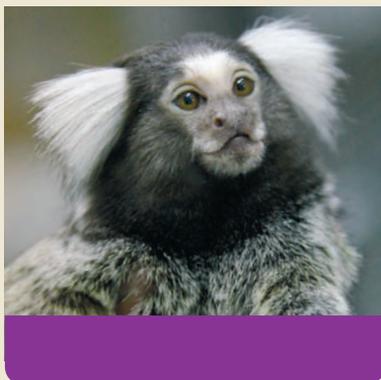




Helping animals

THROUGH WELFARE SCIENCE



SCIENCE GROUP REVIEW OF 2012

»» www.rspca.org.uk/sciencegroup

Published February 2013

Foreword

As an internationally acknowledged centre of expertise, the RSPCA Science Group provides a sound scientific base from which the RSPCA works to advance the cause of animal welfare effectively and efficiently. A great strength of the RSPCA is that we strive to base our policies, activities and approaches to promoting animal welfare on scientific evidence and practical experience. This gives the organisation credibility with its supporters, the general public and decision makers, as well as helping to ensure we make the right decisions for animal welfare.

The RSPCA Science Group consists of approximately 25 postgraduate and postdoctoral animal welfare scientists. We aim to be a well respected authority on a wide range of animal welfare science through gathering, assessing and presenting comprehensive scientific and technical information and advice on many relevant issues. In order to promote practical advances in animal welfare, we engage actively with policy and decision makers in governments, industry and the wider community, both nationally and internationally,

Our work to support the animal welfare activities of the RSPCA is wide ranging and includes, for example, the development of the RSPCA standards for the welfare of farmed animals that underpin the *Freedom Food* scheme. This latest edition of the *RSPCA Science Group Review of 2012* highlights some of the most significant animal welfare issues of the past year, along with key activities undertaken by the specialist scientific and veterinary staff within the four departments of the RSPCA Science Group, as well as RSPCA wildlife centres and animal hospitals.

We hope you find this *Review* both interesting and informative. Please circulate it freely to colleagues. For further details about the ongoing work of the RSPCA Science Group visit www.rspca.org.uk/science_group.



Helping animals through welfare science

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Companion animals

The RSPCA helps many thousands of companion animals every year, either directly through rescue and rehoming or through focussed educational initiatives and engaging with various stakeholders. This year has seen a number of initiatives including major campaigns on rabbits and pedigree dogs; the launch of the puppy contract; several promising governmental initiatives, especially in Wales; fruitful collaborations with the horseracing industry and pet shops and a major investment in behavioural training within RSPCA animal centres.

The RSPCA companion animals department helps to direct and support this work. The department's scientists have a wide range of experience – including kennelling, clinical behaviour, enrichment and ethics – alongside years of practical experience in animal centres, RSPCA branches, pet shops and veterinary practice. Our specialist knowledge, combined with rigorous ethical analyses of our



responsibilities, allows us to make best use of scientific evidence to help animals. Evidence from experience inside and outside the department as well as a deep engagement with carers and policymakers helps us to meet the specific welfare needs of the animals in RSPCA care.

Joining forces

In July 2012, the RSPCA entered into a ground-breaking partnership with Pets at Home that could see major advances in the welfare of pets. Both organisations expect there to be a range of potential animal welfare benefits including:

- promoting RSPCA-rescued animals in desperate need of loving homes
- pooling of information held by both organisations about the number of animals rehomed, neutered or microchipped to reveal key animal welfare trends and data that could be used to improve education campaigns and provision of services
- providing the right advice and products to potential owners, and communicating clear messages on responsible pet ownership, to reduce the number of people taking on an animal without clear knowledge of how to care for them
- developing joint promotional work, giving specific advice to people on the dietary and welfare needs of rabbits and other pets.

To support the RSPCA's work with Pets at Home, the RSPCA companion animals department has been developing jointly branded pet care literature based on current scientific research and RSPCA field expertise. The aim of the literature is to ensure customers are making the right decision when introducing a new pet to the family and have the information they need to keep their pets happy and healthy. The literature covers a range of species and topics including chinchillas, hamsters, gerbils, travelling with your pet and flea and worm treatments.

The companion animals department is working closely with colleagues in other departments and Pets at Home to develop a range of product kits for cats, dogs and rabbits. These products have been chosen to encourage responsible pet ownership and to help owners meet the welfare needs of their pets

The RSPCA also launched its first in-store adoption centre in Pets at Home's flagship store in Stockport on the 26th November 2012. This is the first time the RSPCA has opened an adoption centre in a retail environment and the companion animals department was closely involved in the design of the centre and developing guidance to ensure the welfare needs of the animals whilst housed. It will provide the RSPCA with a unique opportunity to find new homes for cruelly treated and neglected cats, dogs and rabbits. Customers can also seek advice on pet care and information about other RSPCA animals available for adoption in the local area. This is the first of several centres planned across England and Wales.



RSPCA licensing conditions

In March, 2012, the RSPCA launched a review of the RSPCA Licensing Conditions used in RSPCA animal centres. The companion animals department has worked closely with colleagues in the veterinary department to collate and review animal welfare research for the range of companion animals in our care. The review and eventual dissemination of the new conditions will ensure that the welfare needs of the animals in our care are met to the extent required by good practice, underpinned by the most recent scientific evidence.

This project also involves collaboration with colleagues in the field to ensure that all conditions set are practical for staff caring for the animals. Evidence-based guidance is also being produced to offer further support to those that follow and enforce them. It is anticipated that the new version of the RSPCA Licensing Conditions will be launched in 2013.

Puppy power

The companion animals department has been working with the British Veterinary Association Animal Welfare Foundation (BVA AWF) to develop a puppy sales contract and puppy information pack (PIP) which were launched in April 2012. The contract and PIP empower puppy buyers to make properly informed decisions when buying a puppy and help them avoid the problems that can arise from buying a puppy from an irresponsible breeder.

Puppy buyers can use the information provided by the breeder or seller to make a decision on whether they want to buy the puppy they have seen. For breeders and sellers the contract is a record of the thought and attention they have devoted to their puppies' breeding and care.

The PIP contains important information about the puppy and his/her parents, and is tied into the contract which contains a warranty from the seller that the information in the PIP is true and complete. Accompanying guidance notes explain the relevance of the information in the PIP to the welfare of the puppy. The contract can be used for all puppies, whether they are pedigree or not, and by any breeder or seller.

The puppy contract and PIP are endorsed by many key animal welfare organisations and can be downloaded from: www.puppycontract.org.uk



Model licence conditions

Throughout 2012, we have continued working with other welfare organisations, local authorities and relevant industry bodies to review model licence conditions for private boarding establishments for cats.

The current licence condition guidelines are based on The Animal Boarding Establishments Act 1963, but with the introduction of the Animal Welfare Act (AWA) 2006 these guidelines have become outdated. The working group is reviewing the conditions to ensure that they are in line with the AWA and contain all of the information needed to ensure the welfare of cats boarded at these establishments. In 2012, a similar review of the model licence conditions for dog breeding establishments began, to ensure that the welfare needs of all dogs at breeding establishments are met. Work on this will continue in 2013.

Pedigree dogs

Throughout 2012, the RSPCA companion animals department has been continuing important work on the welfare issues associated with pedigree dog breeding.

Three major reports on dog breeding have been published in the UK¹ in the last three years, including an independent scientific report commissioned by the companion animals department.

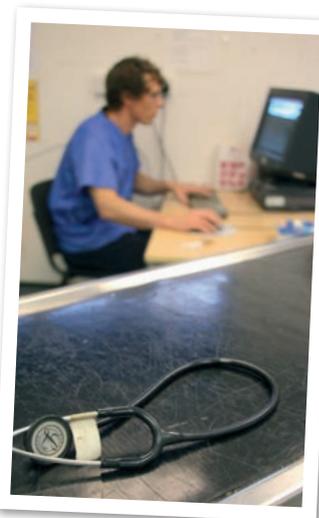
Each of the reports concluded that the welfare issues associated with pedigree dog breeding are very serious, and that urgent action is needed to improve and protect the welfare of pedigree dogs. Each report also included a series of recommendations for possible ways forward – these have informed the department's activities on this significant animal welfare issue over the last three years.



All three reports on dog breeding identified an urgent need for the systematic collection of data on the occurrence of inherited diseases from first-opinion veterinary practices. Consequently, throughout 2012 the companion animals department have continued to fund a VetCompass PhD research project with the Royal Veterinary College and the University of Sydney.

It is not just dogs that are affected by welfare issues from selective breeding, so the PhD study aims to estimate the prevalence of inherited and acquired disorders in both dogs and cats to highlight breeds at greatest risk of specific conditions.

Work on the VetCompass project started in October 2010 and, by the end of 2012, VetCompass held clinical data on over 184,000 cats and 232,000 dogs. More information is available on the VetCompass project website at: <http://www.rvc.ac.uk/VetCOMPASS/>



Born to suffer

The RSPCA's *Bred for looks, born to suffer* campaign was launched in December 2011 and seeks an end to the breeding of dogs based on appearance.

The online petition calls for breed standards to be changed so that they prioritise the health, welfare and temperament of a dog over its looks. At the end of 2012 the petition had over 20,000 signatures, indicating this is an issue that the public also feel very strongly about.

More information is available on the campaign website: www.rspca.org.uk/bornertosuffer

1. *Pedigree Dog Breeding in the UK: A Major Welfare Concern?* commissioned by the RSPCA is available at: www.rspca.org.uk/pedigreedogs
A Healthier Future for Pedigree Dogs by the Associate Parliamentary Group for Animal Welfare (APGAW) is available at: www.apgaw.org/reports-and-publications
The Independent Inquiry Into Dog Breeding, commissioned by the Kennel Club and the Dogs Trust is available at: www.dogbreedinginquiry.com

Pet school

An exciting opportunity to promote responsible pet ownership involved the companion animals department working with the RSPCA's Performing Animals Consultancy on the *Pet School* television series. Commissioned by the BBC, the series was filmed during August and aired as a season of programmes about pets in December 2012 on BBC 1 and CBBC.

Nine children who wanted to get a pet were chosen to take part, completing daily husbandry tasks, learning about animals from a range of visitors and spending time with their own 'pet'. Featuring a wide range of companion, exotic and farm animal species, many of the animals used were supplied by rescue organisations, including the RSPCA, and so were looking for a home at the time of filming.

Throughout the series, there was a strong emphasis on promoting the idea that children thoroughly research their choice of pet, including where to source their animal from, how much is involved in caring for a pet and the poor welfare outcomes if people are irresponsible pet owners. The series culminated with the children's parents deciding if their child was capable of looking after their chosen pet at home.

A member of the RSPCA companion animals team worked as an independent animal welfare advisor on the series, offering advice to the production team on all aspects of the animals' welfare, including accommodation design and husbandry advice. Animal welfare risk assessments were produced to ensure that all members

of the production team understood their responsibilities for the animals' welfare. The RSPCA advisor was present during filming and post-production support was also offered by assisting in the editing process to guide the production in the programme's messaging.

More information about the Performing Animals Consultancy and the work it does can be found by visiting: <http://performinganimals.rspca.org.uk/home>



Rabbit welfare in the UK

Improving companion rabbit welfare is a top priority for the RSPCA. *What Bugs a Bunny?* – the RSPCA's rabbit welfare campaign – was officially launched in June. The campaign aims to change the common perception that rabbits are easy pets to keep, increase understanding of their complex needs and ultimately improve rabbit welfare.

The campaign is based on the findings of an RSPCA-commissioned study into the state of rabbit welfare in the UK, conducted at the University of Bristol by a team of welfare scientists, behaviourists and vets. The 16-month study investigated the husbandry, housing, behaviour and health of the UK rabbit population and sheds light on the most important rabbit welfare issues. The results of the study are due to be published in 2013.

Through extensive press coverage, online videos and social media activities, the first part of the campaign – *Hay Fever* – promoted the importance of feeding rabbits the correct diet of mainly hay and grass. This topic was chosen because the Bristol study identified a lack of grass and hay in rabbits' diets as one of the key welfare issues affecting companion rabbits in the UK.



In September, the campaign focussed on the issue of preventative health care through Rabbit Awareness Week (RAW). The RSPCA is an official partner of RAW, which aims to raise awareness of the welfare needs of pet rabbits. RSPCA centres and branches ran rabbit education events and offered free health checks in association with local veterinary practices. This year's theme was the importance of regular veterinary health checks and vaccinations against Myxomatosis and Rabbit Haemorrhagic Disease. The Bristol study found that these two diseases were rated by experts as the welfare issues that cause the most intense suffering to pet rabbits.

The RSPCA has also funded a further study at the University of Bristol to investigate the spatial needs of pair-housed rabbits. The findings of this study will form the basis for new evidence-based rabbit housing guidelines which the RSPCA hopes to launch in 2013. The ongoing campaign will seek to address other priority rabbit welfare issues in 2013 and beyond, including suitable housing and companionship.

Further details of the campaign can be found at: www.rspca.org.uk/whatbugsabunny

Understanding dog behaviour

Research has shown that young children are more at risk of getting bitten than any other population group and people are more likely to be bitten by a dog in their family than an unfamiliar one. Providing information for prospective parents and families with children can help to safeguard both child safety and dog welfare as well as encouraging children and dogs to enjoy one another's company.

In 2012 the RSPCA companion animals department published *Growing up with a dog* which includes information and advice on how to prepare a dog for the arrival of a new-born baby. The leaflet also advises on how to help children learn about dogs as well as providing invaluable pointers to understanding dog behaviour and communication. This leaflet can also be downloaded at: www.rspca.org.uk/dogs

Postal workers regularly come into contact with unfamiliar dogs and around 6,000 employees are injured every year.

Most dogs show aggression because they feel threatened so understanding how to avoid such situations can help protect human safety and dog welfare. In 2012, funding received from Postal Audits, the UK's largest mail auditing company, was used to produce both online advice for those who regularly come into contact with dogs, as well as a leaflet which explains why dogs use aggression and what to do when meeting an unfamiliar dog. For further information go to: www.rspca.org.uk/dogs



Engaging with decision makers

Membership of committees and working groups

- Model licence conditions kennel and cattery group.
- Model licence conditions dog breeding establishments group.
- Dog breeding stakeholder group.

Meetings and events

- Status dog summit, University of Warwick.
- Equine summit, Horsham, West Sussex.
- *Emotional Enrichment* workshop held at Hunter College, New York City.
- Dog breeding stakeholder group meeting to discuss the RSPCA/BVA AWF *Puppy contract*.
- Attended panel sessions for APGAW.
- Meetings with various elected politicians across all parties.
- Meetings with Animal Health and Welfare Board for England.
- Advised British Horseracing Authority.
- Spoke at conferences on euthanasia and dog population control.
- Spoke at UK party political conference fringe events (with Blue Cross).
- Lectured at Bristol, Cambridge and Glasgow.
- Chaired cat neutering workshops to coordinate efforts based on research.
- Association of Pet Behaviour Counsellors (APBC) annual feline conference, Northants.
- Feline Advisory Bureau annual conference, Basingstoke.
- London Vet Show, Olympia.
- Joint meeting of the Advisory Council and the Dog Welfare Review Board.
- Meeting with Grey2KUSA.
- RSPCA Cymru Annual Gala Dinner and launch of the *Dog Welfare Indicators* report.
- Companion Animal Welfare Council (CAWC) – Companion Animal Sector Council (CASC) joint meeting, House of Lords.
- Rabbit Welfare Association & Fund Annual Conference: Rabbit Interactive, Cambridgeshire.

Responses to consultations included the following:

Welsh Government

- Second consultation on the draft Animal Welfare (Breeding of Dogs) (Wales) Regulations 2012.
- Compulsory microchipping of dogs.

APGAW

- Dog Breeding Update report.

Defra

- Tackling irresponsible dog ownership.
- Proposal to increase the fee to add a prohibited type dog to the Index of Exempted Dogs (Wales).

Efra

- Dog control and welfare.

Royal Mail Group Ltd

- Independent inquiry into attacks on postal workers in the UK.

External funding

- VetCompass.

Scientific publications and presentations

- Ensuring kennelled dog welfare – a presentation at the RSPCA status dog summit.
- Emotional Enrichment in captive animals – a presentation at Emotional Enrichment workshop held at Hunter College, New York City.
- Yeates, J. (2012) *Quality Time: Ethical Approaches to the 'Life Worth Living' Concept in Farm Animal Welfare* Journal of Agricultural and Environmental Ethics 25(4): 607-624.
- Yeates, J.W. (2012) *Economics and animal welfare in small animal veterinary practice: the case of genetic welfare problems*. Animal Welfare 21(S1): 155-160.
- Yeates, J. (2012) *How should veterinary surgeons adapt to achieve animal welfare?* [Editorial] The Veterinary Journal 192: 6–7.
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- Bones, V.C. & Yeates, J. (2012) *The Emergence of Veterinary Oaths: Social, Historical, and Ethical Considerations* Journal of Animal Ethics 2(1): 20-42.
- Yeates, J.W. (2012) *Whistle-blowing in the veterinary profession* The Veterinary Journal 191: 147-150.
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Neutering kittens eliminates the likelihood of unplanned offspring. This litter was neutered prior to adoption – any subsequent difficulty associated with scheduling a neutering appointment for an owned animal is therefore avoided.



RSPCA animal hospitals

Our four RSPCA animal hospitals and 38 clinics provide preventative medicine and welfare treatments for pets belonging to owners who are unable to afford private veterinary fees.

Quality or quantity?

It has been estimated that over 90 per cent¹ of cats will be neutered during their lifetimes. Despite such a high percentage uptake, each year unwanted kittens and unplanned litters place a significant burden on RSPCA hospitals, animal centres and branches.

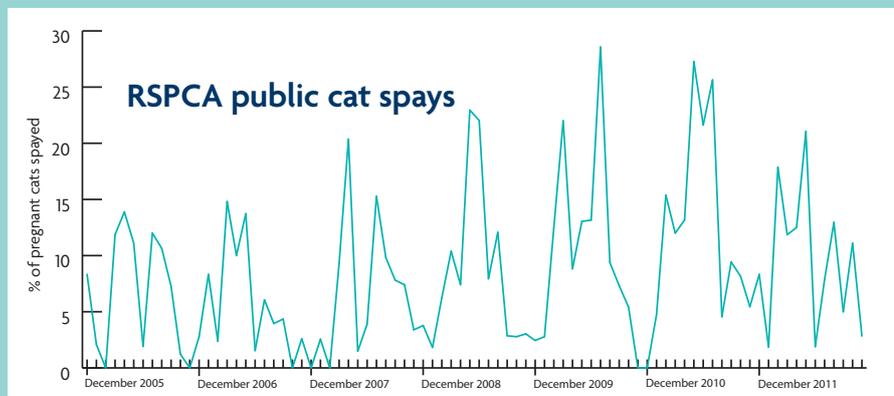
An un-neutered female cat in a multi-cat household or with outdoor access is likely to conceive soon after puberty, which may occur from four months of age. Unplanned pregnancies may be found in almost 30 per cent of elective public cat neuters at RSPCA hospitals during the summer months.

A widespread neutering campaign will not achieve population control if the patients have produced offspring prior to their surgical appointment. Success is likely to involve neutering prior to puberty as well as convincing the owners of the refractory 10 per cent of cats about the importance of neutering before conception.

Finding the elusive 10 per cent

Rather than focusing on the total number of neuters, the hospital is using two methods to identify those cats most likely to contribute to pet overpopulation:

1. Analysis of postcode data relating to pregnant cat spays belonging to charity hospital clients.
2. Analysis of RSPCA telephone call data relating to 'kitten problems' within the hospital catchment area.



This graph shows the percentage of public cat spays which are found to be pregnant at surgery. Each year shows a peak of reproductive activity in the summer months. An alarming number of owners are unaware of the possibility of pregnancy in their cats.

REFERENCES: 1 *Vet Rec* 2009 Jan 31;164(5):137-41 Survey of the characteristics of cats owned by households in the UK and factors affecting their neutered status. Murray JK, Roberts MA, Whitmarsh A, Gruffydd-Jones TJ.

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Subsequently, clinical audit can be used to analyse hospital neutering performance.

1. When the hospital vets carry out off-site neutering at RSPCA animal establishments, it is vital that all animals are neutered prior to adoption. The target is 100 per cent surgical sterilization prior to adoption.
2. The mean age at neuter for public owned queens should reduce as prepubertal neutering is adopted. Ideally, the mean spay age should approach or be lower than four months for female cats.
3. When 'welfare hotspots' are correctly identified, hospital staff should be prepared to deal with a high percentage of surgical terminations of unplanned pregnancies. Each pregnant cat spay significantly eases the local rehoming burden.

Neutering prior to puberty

In 2012, the RSPCA Greater Manchester Animal Hospital published a pain study² which supported the idea that neutering prior to puberty could be accomplished in a pain free manner in small animal practice. Furthermore, hospital staff have delivered training lectures to both veterinary surgeon and nursing audiences. Prepubertal neutering is gaining popularity as a procedure associated with reduced morbidity compared to conventional neutering.

2. *J Feline Med Surg*. 2012 Aug;14(8):553-9 Analgesia after ovariohysterectomy under midazolam-medetomidine-ketamine anaesthesia with buprenorphine or butorphanol, and carprofen or meloxicam: a prospective, randomised clinical trial. Polson S, Taylor PM, Yates D.



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Farm animals

The RSPCA farm animals department is working to improve the welfare of as many farm animals as possible, at every stage of their lives. Hundreds of millions of farm animals are reared in the UK each year, the majority of whom are reared, transported and slaughtered/killed in ways that the RSPCA believes do not meet their behavioural and physical needs, although legally permitted.

The department's scientific and field staff use the latest scientific research and practical experience of farm animal welfare to inform the development of the RSPCA farm animal welfare policies, as well as developing best practice in the care and welfare of the major species farmed in the UK, set out in the RSPCA welfare standards for farm animals.

The department works to encourage improvements in farm animal welfare in a variety of ways. These include working with the food and



farming industries (such as farmers and retailers) and governments (including in England, Wales and the EU) to improve welfare through voluntary changes in practices, as well as strengthening of legislation. The department also works to raise awareness, through media interviews, presentations, information resources and reports, of key welfare issues and how everyone can help to improve the welfare of farm animals.

A strong evidence base for farm animal welfare

The farm animals department believes that the most effective approach to ensuring that the RSPCA can have a tangible positive impact on the welfare of farm animals is to develop the Society's policies and practices in this area using a robust and well-considered evidence base. Part of the department's role, facilitated by the unique collective experience, knowledge and expertise of its staff, is to gather, assess, analyse and effectively 'translate' a wide variety of evidence sources into a usable form that can be applied through a range of activities in order to achieve improvement in the welfare of livestock.

Sources and evaluation of evidence

The department gathers information from many different evidence sources. Particular emphasis is placed on peer-reviewed, published scientific research, but practical trial data, recommendations and advice from expert bodies and individuals, and increasingly, validated welfare outcome assessment are also considered. Individual case studies and practical demonstrations, as well as information from other specialist organisations can also be useful. In addition, taking account of the nature of the source, in each case, the validity and robustness of the 'evidence' is evaluated by considering, among other things, the following:

- independence of the source (likelihood of intentional/unintentional bias)
- number and variety of sources providing similar or same information/advice (cumulative effect)
- scale of the source(s) (amount of data available; sample size)
- robustness of any analysis (statistical; other)
- opinion of others with relevant expertise on the reliability/value/robustness of the source(s).

Application and use of evidence

The department applies 'evidence' in a number of areas of the RSPCA's farm animal welfare work, including most notably during development of the RSPCA welfare standards for farm animals and welfare assessment. In addition, the RSPCA's policies and positions on a wide variety of livestock welfare issues, support for campaigns, external advocacy and lobbying, technical reports and other literature are also informed by the evidence base

collected and 'processed' by farm animals department staff.

This information is also used to evaluate the impact on farm animal welfare of the activities undertaken by the RSPCA, and can also allow effective prioritisation of those activities by judging them against the RSPCA's evaluation/prioritisation criteria (e.g. scale of suffering; severity of suffering, duration/frequency of suffering; likelihood/degree of impact). Issues such as economics, logistics, the degree of change needed, effective knowledge transfer/training issues and attitudes/culture all represent significant challenges to achieving effective implementation of 'best knowledge' and 'evidence', often necessitating a step-wise, considered and patient approach to eliciting progress.

Lack of evidence: making decisions

Despite significant and important advances in knowledge and understanding of farm animal welfare over the past few years, some key areas continue to present major challenges due to the lack of robust evidence as to the nature, severity or scale of the animal welfare problem. For example, comparatively little evidence exists in the areas of mental/psychological welfare and emotional needs and states of farm animals, the level and impact on welfare of certain physiological states (e.g. chronic hunger in certain species/classes of livestock) or the variability in the needs of individual animals within species/classes of animals.

In the absence of robust evidence, the RSPCA farm animals department bases its decisions and recommendations on a number of factors, including the following:

- extrapolation from evidence, experience, knowledge of similar situations and/or species
- reference to/comparison with current 'best practice'
- use of own primary research/experience
- application of reasonable/justifiable anthropomorphism (e.g. qualitative behavioural assessment-type approach)
- application of 'common sense'
- consideration of ethical issues
- application of the Precautionary Principle ('informed prudence').



Developing RSPCA welfare standards

The RSPCA farm animals department develops the RSPCA welfare standards for farm animals. These detailed documents aim to represent best practice in the care and welfare of farm animals and go above and beyond standard production systems and legislation in the UK, in a number of key areas. The standards cover every aspect of an animal's life, including food and water provision, the environment, transportation and humane slaughter/killing. At present there are 10 sets of standards, covering the major species farmed in the UK.

The standards are continually being reviewed and revised by the department in light of scientific evidence and practical experience and through consultation with key stakeholders. Development of each set of standards is facilitated through consultation with a species-specific technical working group, which consists of producers (usually *Freedom Food* members), specialist veterinarians, animal welfare scientists, *Freedom Food* scheme representatives and RSPCA farm animals department scientific and field staff. Through these

groups the department gathers and discusses information to inform the development of the standards. By continually reviewing the standards we can ensure that they remain at the forefront of what is achievable in terms of animal welfare, husbandry and commercial viability.

The standards are primarily implemented through the RSPCA's own farm assurance and food labelling scheme, *Freedom Food*. Farms, hauliers/transporters and abattoirs approved by the *Freedom Food* scheme must implement all the relevant RSPCA welfare standards and are assessed annually by *Freedom Food* assessors to check compliance with the standards. In addition RSPCA Farm Livestock Officers (FLOs) conduct risk based monitoring visits, often completely unannounced, on a proportion of *Freedom Food* members each year, as an extra check of compliance with the standards – see farm livestock officers section.

In 2012 revised editions of the RSPCA welfare standards for pigs, turkeys and farmed Atlantic salmon were published. Key changes in the RSPCA welfare standards for pigs included prohibiting tail docking for free-range pigs and the inclusion of minimum space requirements for outdoor pig production. Within the RSPCA welfare standards for turkeys it became a requirement to provide natural light in all houses and for farms to undertake independent welfare audits for each flock. In 2012, the RSPCA welfare standards for farmed Atlantic salmon introduced a banded freshwater stocking density, based on the liveweight of the fish. This new approach to freshwater stocking densities makes it easier to measure the operational indicators which impinge upon fish welfare during these juvenile fish lifecycle stages.

Farm livestock officers

During most of 2012 the farm livestock officers team consisted of seven members, the largest number to date. This was made possible through a grant obtained during 2011 from the Persula Foundation, enabling the team to monitor a greater number of *Freedom Food* members during this year than has been previously possible. This had a particular impact on the monitoring of the aquaculture sector and the East Anglia area which has a high *Freedom Food* membership level.

The team continues to deliver Welfare Outcome Assessment (WOA) on laying hen and dairy member units after receiving training on dairy WOA in mid 2012. Several members of the team have also been involved in the development of pig WOA protocol – see *AssureWel* section.

The team attended a pig health and welfare training course provided by XL Vets FarmSkills, along with attending several other trade shows and meetings to keep up to date with best practice and advances in farm animal welfare. This continuing professional development helps to ensure that the FLOs remain highly effective and skilled deliverers of hands-on animal welfare in the field.



Green Food Project

In the Natural Environment White Paper for England, published in June 2011, it was stated that government, industry and environmental partners would work together to explore how to improve the environment, whilst at the same time increasing food production to meet the demands of an ever expanding global population. The Green Food Project is the body tasked to try and achieve these goals. As the animal welfare representative on the dairy sub-group, the RSPCA sought to ensure focus on the animal welfare issues which might affect the animals involved under such an ambitious project.

A number of issues were considered, such as the indicators which define the relationship between output per hectare and technical efficiency. One of the things that the group recognised was that some environmental impacts can be reduced by optimising efficiency, resource use and reducing waste, whilst at the same time improving the health and welfare of the cattle. For example, by reducing mortality and endemic disease in the herd, inputs such as feed/energy/water/land use per unit of (milk) production, would be reduced. By teasing out some of the tensions and challenges involved, it was possible to look at how animal welfare might be affected as a result, and advice was given in order to ensure that the progress being made in improving the welfare of the dairy cow at present is not adversely affected by the ambitious 'sustainability' goals of the project in the future. We have previously contributed to similar initiatives in Wales.



AssureWel advances assessment of welfare on farms



The five year *AssureWel* project, a collaborative programme between the RSPCA, the Soil Association and the University of Bristol, continued into its third year. The project has a primary aim of implementing welfare assessments into farm assurance schemes, with the RSPCA *Freedom Food* and the Soil Association Farm Assurance Schemes leading the way.

Welfare assessments for laying hens have been developed and now, for over a year, all *Freedom Food* approved laying hen farms have been receiving a welfare assessment by both *Freedom Food* assessors and RSPCA farm livestock officers. The results are being used to provide useful feedback and benchmarking to producers to help identify any problem areas and drive welfare improvement. For each welfare measure there is a target for producers to aim for, as well as a caution level to highlight where action needs to be taken. Setting these threshold levels helps producers better understand where they should be and also supports assessors' decision-making on compliance.

The *AssureWel* project has also led to the publication of an industry-wide advice guide to help tackle one of the most widespread welfare issues facing the laying hen industry: feather loss. This is typically caused by injurious feather pecking, and sometimes aggression. The advice document was developed with input from the University of Bristol *FeatherWel* project and British Egg Industry Council.

For dairy cattle, welfare measures (including lameness, body condition and lying comfort) have been developed and introduced into all *Freedom Food* farm assessments. *AssureWel* has been working with Red Tractor Dairy, which assures 95 per cent of the milk produced in Great Britain, to help introduce these measures into their scheme. Red Tractor Dairy is currently considering the inclusion of some of the welfare measures into their dairy assessments, subject to final consultation. This industry-wide approach will help generate results that could be used to measure and improve welfare across the dairy industry. *AssureWel* is also working with other stakeholders, including major retailers, to achieve harmonisation of welfare measures and methodologies across the dairy industry.

Development of welfare measures for pigs has begun, and their introduction into *Freedom Food* scheme assessments is planned for 2013.

AssureWel is beginning to promote the use of the *AssureWel* measures more broadly, and will be approaching organisations, in the UK and internationally, to discuss welfare assessments and their implementation in more detail. From producer groups in the UK, to the European Food Safety Authority and standards developers in the USA, interest is growing in our practical and field-tested approach to animal welfare assessment.

Dairy 2020

The RSPCA was invited to participate as the sole animal welfare representative in the Dairy 2020 initiative by the *Forum for the Future* – a leading global sustainable development non-profit organisation – to consider how a sustainable dairy industry in the UK would look in the future, and what would be the key drivers to contribute to future sustainability. There was also consideration of how to feed into other major industry initiatives such as the *Dairy Roadmap*.

Some of the key guiding principles identified by the initiative included improving animal welfare – in particular cow comfort when animals are housed, and also incentivising outcome-based systems, which are focussed on delivering a positive impact on animal welfare. Minimising environmental impact and stewarding nature through improving biodiversity, soil fertility and nutrient availability were also highlighted as important issues.

New open water standards for ducks

A three-year research project, commissioned by the RSPCA and funded by The Tubney Charitable Trust, to help evaluate and identify practical ways of providing farmed ducks with a suitable open source of water, concluded in 2011. During 2012 the RSPCA farm animals department consulted with the duck industry, including producers, vets, researchers and other poultry experts, to discuss the results of the research and consider how best to strengthen the RSPCA welfare standards for domestic/common ducks in this area.

New standards concerning the provision of open water have now been developed, which build on the current requirements. These new standards take into account not only the RSPCA-commissioned research, conducted by Cambridge University, but also research published over the last few years by other academic institutions. The new standards will be published in 2013, ensuring ducks have access to bathing water that enables them to perform their important water related behaviours freely.

This work has also been used to inform

and drive the RSPCA's *Like a Duck to Water* campaign, launched in September 2012, to help improve the rearing conditions of farmed ducks. By law, ducks can be provided with nothing more than metal ball-bearing type water drinkers, similar to those given to pet rabbits and hamsters.

The campaign aims to raise awareness about this issue and specifically encourage retailers to ensure the duck meat they sell comes from farms where the ducks were provided with facilities allowing them full body access to water. For more information about the campaign see: www.rspca.org/ducktowater



Pig Health and Welfare Council: new sub-group

This year saw the re-launch of the Pig Health and Welfare Council as a more independent and partnership-led group, with the aim of driving forward the delivery and strategic aims of the pig industry as set out in 20:20 Pig Health and Welfare Strategy. The RSPCA is a member of the Council, along with representatives from the pig industry and associated sectors, veterinary profession and governmental agencies.

As well as convening sub-groups on health related topics such as surveillance, agreement was reached to set up a welfare sub-group to be facilitated by the RSPCA farm animals department. The sub-group aims to achieve consensus on the important pig welfare issues to be investigated, on how to progress these, and on the ultimate aims in each case. Key issues to be addressed, as identified within the 20:20 Pig Strategy, include tail biting/docking and confinement during farrowing, although other issues will also be examined e.g. teeth clipping. The sub-group will provide the Council with analysis, commentary and recommendations as appropriate.



Chicken welfare assessment centre

At present, only slower growing breeds of meat chickens can be used by producers who are members of the RSPCA's Farm Assurance scheme, *Freedom Food*. This is because fast growth rates can significantly contribute to the development of severe welfare problems in chickens, such as chronic leg disorders and heart problems. Consequently, the RSPCA welfare standards for chickens, which must be implemented by *Freedom Food* members, state that the average daily genetic growth rate of a bird must not exceed 45g.

However, there are limitations to the effectiveness of this standard as a mechanism for safeguarding chicken welfare. It is the broiler breeding companies that determine and provide the data on the genetic growth rate potential of their chickens, and they do not apply a standardised process to establish this figure. In addition, as the genetic growth rate potential of a breed is often arrived at using data from a number of different sources, including field trials by producers, it does not necessarily reflect the true genetic growth potential of a breed.

These issues make it difficult to ascertain a breed's true genetic growth rate. Further, growth rate only offers an indirect measure of welfare and, as such, does not offer any guarantees either way about a breed's actual level of welfare. Although these issues have not hindered significant progress in this area to date, the RSPCA has for a long time recognised the challenges associated with this approach in ensuring only breeds with an acceptable level of welfare are used within the scheme.

Since 2008, the RSPCA has been working on developing a new approach, and has now fully developed an RSPCA-approved protocol to assess the welfare of different breeds, which is to be applied at an RSPCA approved Welfare Assessment Centre. Here, meat

chickens are reared and assessed for a number of welfare parameters, including leg health, hock burn, foot pad burn and mortality. This provides independent, meaningful information regarding the welfare of a breed which is used to inform a decision as to whether a breed should be accepted for use under the RSPCA standards. We therefore have direct and specific information relating to the welfare

of a breed and avoid having to assume the level of welfare based on its growth rate.

A Welfare Assessment Centre was identified and the new approach successfully trialled during 2012. The *RSPCA Welfare Standards for Chickens* will be amended in 2013 to reflect this new approach.

Engaging with decision makers

Examples of membership of committees and working groups

- Scotland's Rural College gamebird housing project steering group (funded by Defra).
- Red Tractor Dairy Technical Advisory Committee (TAC).
- Cattle Health and Welfare Group (CHAWG).
- Sheep Health and Welfare Group (SHAWG).
- Pig Health and Welfare Council (PHWC).
- Genetics Advisory Forum (GAF).
- Seals, Aquaculture and Salmon working group.
- Poultry Welfare Forum.
- US Humane Farm Animal Care Scientific Standards Committee.
- Farm Animal Welfare Forum.

Department for Environment, Food and Rural Affairs (Defra):

- Beak trimming action and steering groups.
- Expert Advisory Group for the Defra funded EU Broiler Directive Implementation Review Project.
- Core Stakeholder Group for the Post Implementation Review of the EU Broiler Directive.

Welsh Government

- Animal Health and Welfare Strategy Implementation Group.

Universities/research institutes/research projects

- University of Bristol laying hen fitness to travel project steering group (funded by Defra).
- BPEX welfare outcomes (Real Welfare) project steering group.
- AssureWel Broiler Outcomes Project Group.

Examples of key meetings/events in 2012

- Meetings with the British Egg Industry Council to discuss compliance with the change in law banning barren battery cages in Europe.
- Meetings and visits to turkey farms to investigate indoor turkey production standards.
- Meeting with pet hen housing company to discuss requirements for laying hens.
- Participated in the British Free Range Egg Producers Association conference and discussed issues with producers at a stand for *Freedom Food*.
- With RSPCA inspectorate, meeting with the Farm Crisis Network (FCN) to develop an operational agreement to inform and supply RSPCA inspectorate and farm animals department field staff with information to use in certain on-farm crisis situations.
- Provide expert advice/analysis whilst accompanying the Farm Animal Welfare Committee (FAWC) to Scotland to look at fish farming and fish slaughter.
- Participated in meetings with RSPCA inspectorate with AHVLA offices and Kent police to discuss issues relating to live transport overseas of animals from Kent ports.
- Meeting with Holstein UK to discuss the latest developments in dairy cow genetics.

- Inspected the facilities to accommodate farm animals involved in the live transport overseas from Ramsgate, Dover and Newhaven ports.
- Visited sites, and discussed/advised on the issues associated with the building of a major new freshwater salmon hatchery in Scotland, intended to conform to RSPCA welfare standards.
- Participated in Food and Environment Research Agency (FERA) workshop on pig transport journey times.
- Participated in British Pig Executive (BPEX) Research and Development – future strategy workshop.
- Participated in and presented at the Red Tractor Technical Advisory Committee (Pigs) on welfare outcomes assessment and the AssureWel project.
- Participated in industry organised Pig Assurance Summit to discuss key issues regarding assurance.
- Interview with Poultry World regarding the launch of the RSPCA Welfare Pledge for farm animals.
- Meeting with BBC food and farming TV series producer to discuss key farming issues concerning farm animal welfare and encourage coverage.
- Visited UK duck production company to discuss and advise on welfare issues relating to the provision of open water.
- Visited equipment manufacturer to examine, discuss and provide view on novel rearing system for broilers.
- Visited and discussed new hatchery system for meat chickens and barn system for laying hens in the Netherlands.

Examples of responses to consultations in 2012

- Red Tractor Farm Assurance Pig Standards.
- FAWC consultation on the evidence base for the welfare of farm livestock.
- KFC independent study regarding stakeholder perceptions of the company.
- Interview with Agra CEAS regarding implementation of new farm animal slaughter regulations.
- Consultation on revised slaughter and killing regulations (England; Wales).

Examples of presentations during 2012

- Harper Adams University College presentation to final year degree students on farm animal welfare.
- Iowa State University on the work of the RSPCA farm animals department and the *AssureWel* project.
- FAWC on the RSPCA welfare standards for farmed Atlantic salmon.
- Norfolk Pig Discussion group on tail biting and tail docking.
- Pig producer group meeting on the work of the farm animals department, RSPCA welfare standards for pigs and *Freedom Food*.
- FAWC on how the Farm Animals Department gathers, analyses and applies the evidence base for farm animal welfare.

Papers published in 2012:

- Main, D.C.J., Mullan, S., Atkinson, C., Bond, A., Cooper, M., Fraser, A. and Browne, W.J. (2012). *Welfare outcomes assessment in laying hen farm assurance schemes*. *Animal Welfare*, 21: 389-396.



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Research animals

Animals are used for many different purposes in research and testing and each area of use raises specific ethical, welfare and scientific issues. The RSPCA adopts a constructive, practical approach, judging every issue individually, critically questioning the necessity and justification for animal use and arguing the need to reduce the conflict between the interests of animals and of science. Our primary aim is the replacement of animal experiments with humane alternatives worldwide. Until this can be achieved, we work to help ensure that the minimum numbers of animals are used and that they experience the minimum suffering and have the best possible quality of life.

The Society liaises with those involved in animal use in government, industry and academia to promote initiatives that:

- **develop effective processes of ethical review**
- **lead to fuller implementation of the 3Rs.***



* The 3Rs are: **replacement** of animals with humane alternatives, **reduction** of animal use, and **refinement** of husbandry and procedures to reduce suffering and improve welfare throughout the animals' lives.



New animal experiments law for UK

2012 proved to be a significant year in shaping the future regulatory landscape for animal research and testing in the UK.

Since the European Directive on the Protection of Animals used for Scientific Purposes¹ was agreed back in November 2010, the 27 member states of the European Union have each had to undertake work to ensure that they have made the necessary provisions for transposing the requirements of the Directive into their own national laws. This had to be completed before the new regulations went live on January 1st 2013.

On the face of it, the UK appeared to have less to do than many others in order to 'get ready'. However, with some people pushing simply for a straight transposition of the Directive into UK law, there was a real danger that we could see UK controls and standards weakened. As a result, the RSPCA, along with a range of other organisations and individuals both within and outside of the scientific community, made numerous representations to the government to emphasise the importance of at least maintaining the existing standards in national legislation. We argued that if standards were weakened, then animal welfare would suffer and consequently so would science and public confidence in the level of control. Fortunately, the government appeared to listen.

In May, the Home Office published the results² of the public consultation it had run during 2011. This revealed overwhelming support for the UK to maintain its current standards. We welcomed the Home Office's formal response that for the most part, they were minded to utilise the freedom permitted by Article 2 of the Directive to

maintain existing UK provisions in areas where they were higher than the minimum set out in the Directive.

Throughout the year, the RSPCA has been involved in a series of stakeholder meetings with the Home Office to discuss various aspects of the transposition process, and has also responded to further consultations relating to a new draft code of practice on care and accommodation, methods for the humane killing of animals, potential conflicts of interest of *Named Persons*, and new proposals for a revised format for the *Personal Licence*. We were also invited to present our views and concerns in a number of other fora, including in a presentation at an event hosted by the Parliamentary Science and Technology Committee.

In December, the wording of the amended law was given the nod by Parliament. Most of our concerns with the content of the revised legislation had been addressed but its impact will largely depend upon how the Home Office and others choose to interpret and implement its provisions – and there remain some outstanding issues of concern.

This means that the content and status of the accompanying guidance document (currently being produced by the Home Office) for those it regulates is of critical importance. It is anticipated that the ethical review processes (ERPs) currently in place at all UK research establishments will largely continue with an unchanged role and functions, albeit under the new name of Animal Welfare and Ethical Review Bodies (see later article on *Ethical Review*). However, there remain questions relating to how the new national body – the Animals in Science Committee³ – will actually operate in practice, including the extent to which it will be truly independent from the Home Office department it is being set up to advise. There is also a need for further discussion and clear guidance for those involved in the retrospective assessment of projects and the reporting of actual severity experience by animals, and greater clarity required regarding the new role for a person to ensure that people using animals are trained and competent.

As a final note, it is of continuing and exceptional importance that the Home Office is adequately resourced to fulfill its numerous roles – of inspection, reviewing licence applications and amendments, liaising with licensees, and engaging with initiatives to promote the 3Rs. Despite the running costs of the Home Office Animals in Science Regulation Unit generally being covered by the fees paid by licence holders⁴, in recent years we have seen significant reductions in both the number of Home Office inspectors and the overall number of visits they make to research establishments. This is of serious concern, and the RSPCA has continued to argue the need for a strong and adequately resourced Home Office inspectorate.

FOOTNOTES AND REFERENCES

- ¹ *European Directive on the Protection of Animals used for Scientific Purposes - 2010/63/EU*. Brussels. See: http://ec.europa.eu/environment/chemicals/lab_animals/legislation_en.htm
- ² *Consultation on options for transposition of European Directive 2010/63/EU on the protection of animals used for scientific purposes - Summary report and Government response (May 2012)*: <http://www.homeoffice.gov.uk/publications/about-us/consultations/transposition-protection-animals/summary-response-transposition?view=Binary>
- ³ Which replaces the Animal Procedures Committee.
- ⁴ *Ministerial answer to Parliamentary Question - animal experiments (Dec 2011)*: <http://www.theyworkforyou.com/wrans/?id=2011-12-19a.86188.h&s=speaker%3A11641#g86188.r0>

Ending severe suffering

The level of pain or distress experienced by animals used in experiments depends on the nature of the research and is classified as 'mild', 'moderate' or 'severe' under UK law. Any level of suffering is a concern for the RSPCA, but ending severe suffering is a top priority.

The annual government statistics on the use of animals in research and testing list the number of projects that have been licensed in each of the severity classifications each year, but this is a prospective estimate of suffering that does not indicate how much suffering animals actually experienced in practice. However, as a result of the UK transposing European Directive 2010/63, there will be a new requirement for scientists to assess and report the actual severity experienced by each animal. This means that official statistics on the actual levels of pain, suffering and distress experienced by animals in research will be available from 2015¹. This will allow us to monitor the numbers in each category – including 'severe'.

The RSPCA believes that ending severe suffering is a legitimate, desirable and achievable goal and that the revised UK legislation can provide a useful driver in keeping with the spirit of the European Directive, which requires pain, suffering, distress and lasting harm to be minimised. However, the legislation must be accompanied by clear guidance on effective monitoring of laboratory animals, including proper assessment, amelioration and classification of any suffering they experience.

Regardless of the changes to the UK law, there is an ongoing and widely-recognised need for information and immediate action on this issue and we have set up a number of initiatives to develop and promote ways of avoiding or reducing severe suffering.

We aim to identify:

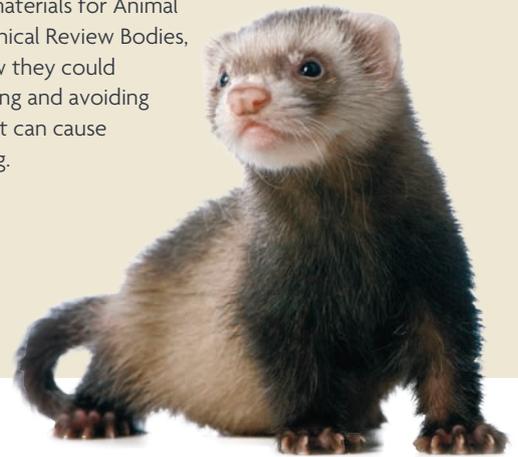
- the kinds of procedures that can cause severe suffering
- the factors that combine to make the level of suffering severe, such as pain, anxiety, or long lasting procedures
- the purpose of severe procedures, for example vaccine testing or studies of painful or stressing disorders
- any perceived obstacles to reducing suffering or avoiding these procedures, and most importantly,
- what can be done to overcome these obstacles.

The RSPCA has been working closely with the scientific community to research this information and to develop strategies and resources to help reduce suffering. These include the development of training resources for researchers, animal technologists and care staff, to help ensure that suffering is detected, recorded and relieved more effectively. The RSPCA is also encouraging information on refinement approaches and methodologies that could avoid or reduce severe suffering to be included in scientific publications. This is a continuation of ongoing work which includes influencing scientific journal editorial policies, liaison with learned societies and other professional bodies, as well as promoting the principle directly with researchers at meetings and research establishments.

The RSPCA also established an expert working group to develop refinements for severe procedures in order to reduce suffering and improve welfare. The group completed two papers in 2012, which focused on animal studies of epilepsy and multiple sclerosis; these have been submitted for publication in peer-reviewed journals which will enable more effective dissemination. Further working groups will be set up in 2013 to address other severe procedures and produce guidance on refining and avoiding these.

Robust local ethical review at research and testing facilities can also play a vital role in reducing severe suffering. The RSPCA is encouraging Animal Welfare and Ethical Review Bodies (AWERBs) – known as Local Ethical Review Processes (ERPs) until 31 December 2012 – to focus on ending severe procedures at their establishments, including by actively visiting establishments and presenting on the subject. We initiated an outreach project and were invited to visit and speak at a range of establishments throughout 2012. This has generated a great deal of discussion and support for the principle of ending severe suffering, which will be further facilitated in 2013 by producing materials for Animal Welfare and Ethical Review Bodies, setting out how they could approach refining and avoiding procedures that can cause severe suffering.

REFERENCE:
1 Based on data to be collected during 2014.



Delivering international training

Provision of advice on ethics, animal welfare, the 3Rs and legislation internationally, is an increasingly important role for the RSPCA research animals department, working closely with the RSPCA's international team.

Issues relating to the use of animals in research and testing need to be considered in a global context. Industries that use animals, whether pharmaceutical or chemical, are multinational and the regulatory testing requirements they work to are international. Scientists in academia also commonly collaborate on an international basis. However, the legislative controls on animal experiments in different countries, and particularly the priority given to animal welfare and ethical review, varies significantly. This is a serious concern.

Key activities and events during 2012

- In March, the RSPCA organised and delivered training workshops in *Taiwan* for representatives from research establishments using animals. The events were organised in association with the *Chinese-Taipei Society of Laboratory Animal Sciences* and covered topics relating to animal welfare and how the 3Rs can be effectively implemented in practice. The workshops were well attended and enthusiastically received by the delegates.
- In September, the RSPCA was invited to give a plenary presentation and run a workshop session on reducing laboratory animal suffering and improving welfare at the annual conference of the *Chinese Association for Laboratory Animal Sciences*.

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Rodent welfare

The RSPCA and the Universities Federation for Animal Welfare (UFAW) jointly hold an annual rodent welfare meeting¹ to discuss current 3Rs research and disseminate information on the practical implementation of the 3Rs with respect to rodent use. Over 120 delegates attended the 2012 meeting, including animal technologists, researchers and veterinarians from a wide range of scientific establishments within industry and academia.

The meeting addressed a range of topics, with a main focus on refinement and reduction. A guest speaker from a university in Santiago gave delegates an overview of the regulatory framework for animal use in Chile, explaining how researchers and animal technologists are working towards better standards of animal welfare, regulation and ethical review.

Other presentations included reducing stress during blood sampling in rats, the welfare impact of different identification methods such as microchips and ear notching in mice, and implementing both refinement and reduction in monoclonal antibody generation using rodents. Another speaker explained how long-term studies, and research into diseases of ageing such as osteoporosis, can often extend to the full lifespan of a mouse. Aged mice have special needs and an appropriately tailored approach to assessing their health and welfare is essential to ensure a good standard of care.

There is currently much discussion of the validity of some areas of animal use, and this was also addressed at the meeting. For example, mice are routinely used (e.g. in safety tests) at six to eight weeks old, but the resulting data may be different



from that obtained when the animals are fully mature at three months, which could lead to potentially misleading results. The meeting discussed how taking account of animal biology and behaviour can lead to benefits for both animal welfare and science. One speaker explained how new approaches to rodent studies of neuropathic pain involve assessing pain using behavioural indicators of anxiety and other behaviours that are important to the animals, such as burrowing. This is a better

way of assessing subtle signs of suffering, so that studies can be ended earlier, and can also provide more meaningful 'outcome measures' when potential new analgesics are being evaluated.

The day ended with a focus on reducing suffering in severe procedures, with an outline of the RSPCA initiative to reduce severe suffering and practical examples of refinements for SOD-1 mice, a genetically altered strain used to study neurodegenerative disease.

The report from the meeting will be published in the journal *Animal Technology and Welfare* during 2013.

FOOTNOTE

1 For more information about the RSPCA/UFAW Rodent Welfare Group and for free to download reports from past meetings, see: www.rspca.org.uk/sciencegroup/researchanimals/implementing3rs/rodentwelfaregroup



The conference, which was held in Yangzhou, attracted hundreds of delegates from across China.

- In November, the RSPCA's international and research animals departments, in conjunction with the *University of Belgrade*, organised and delivered a two-day workshop on laboratory animal welfare, ethics and legislation. Over 100 people attended, including those using and caring for laboratory animals, and members of ethics committees across *Serbia, Croatia and Macedonia*. RSPCA staff and invited experts presented key information on the aspects of the new European Directive and demonstrated and discussed how the various requirements of this legislation might best be met in practice.

Resources

We also provide and disseminate key resources on animal welfare, the 3Rs and ethical review. In one such initiative, the RSPCA is working with the UK's NC3Rs² and the Chinese Association for Laboratory Animal Sciences to develop a Chinese language version of the Procedures with Care website³ which will provide practical examples for refining experimental techniques in order to reduce animal suffering and improve welfare.

FOOTNOTES AND REFERENCES

- 1 For more information about this aspect of our work, see: www.rspca.org.uk/sciencegroup/researchanimals/whatwedo/workinginternationally
- 2 The National Centre for the Replacement, Refinement and Reduction of Animals in Research (UK) www.nc3rs.org.uk
- 3 www.procedureswithcare.org.uk

Genetically altered animals – reduction and refinement

The creation and use of genetically altered (GA) animals continues to rise worldwide.

Mice and zebrafish remain the two most common GA species used in research, although technical developments published during 2012 mean that the genetic alteration of livestock animals and other species (with the exception of birds) is expected to become much more commonplace.

Much of the growth in the number of GA animals reported has been identified as resulting from the creation and breeding of GA animals rather than their use in scientific procedures. Implementation of the 3Rs is therefore particularly important in this field to counteract the escalating numbers and, to this end, the RSPCA research animals department undertook a number of initiatives in 2012.

- In March, a training event was held for scientists and technicians, with the aim of highlighting 3Rs opportunities in the production, breeding and care of GA mice, in order to minimise the number of GA animals created and used, as well as reducing the potential for them to experience pain, suffering or distress. This is the fourth year that the meeting – *Genetically Altered Animals and the 3R's – what's it all about?* – has been held, with over 260 participants having attended to date.
- In June, and for the third consecutive year, the RSPCA co-organised a training event attended by senior animal technicians, animal unit managers, scientists and vets from across Europe. The three-day course on *Managing Mouse Colonies: Best practice in Genetics, Breeding and Welfare* promotes current best practice including two RSPCA initiatives aimed at reducing the numbers of GA animals

involved in breeding and used in research, as well as raising standards of housing, husbandry and care through the use of GA passports.

- In October, a new training event bringing together scientists and senior animal technicians was hosted by The Wellcome Trust. The one day meeting – *Conditional Transgenic Technologies: Principles & Best Practice* – highlighted 3Rs opportunities during the creation of GA animals and promoted the use of conditional technologies to reduce the impact that genetic alteration has on each and every individual animal.
- In December, we planned and co-chaired a session on GA animals as part of an annual meeting held at the Home Office, organised by the Society of Biology, and the Animals in Science Regulation Unit.

For more information on the above initiatives, see: www.rspca.org.uk/sciencegroup/researchanimals/implementing3rs



Ethical review

A key question during the transposition of European Directive 2010/63 into UK law was whether local Ethical Review Processes (ERPs) would be retained or be replaced by the local Animal Welfare Bodies (AWBs) specified in the Directive.

The ERP and AWB have broadly similar functions. However, the latter focuses on animal welfare and implementation of the 3Rs and lacks the explicit reference to ethical review and the consideration of harms and benefits which is integral to the work of UK ERPs and ethics committees generally. The minimum membership requirements are also different – membership of an AWB could comprise just two people, which does not allow for inclusion of the range of expertise and perspectives that are the cornerstone of an effective ERP.

The requirement for institutional AWBs is a major advance for many member states, but in the UK the RSPCA argued forcefully to retain the existing ERP system. There was a great deal of support for this from many research establishments and professional bodies who believe the ERP benefits animal welfare, science and the quality of ethical discussion. The RSPCA was therefore delighted when the government announced that they would transpose the AWB as an Animal Welfare and Ethical Review Body (AWERB) and that local establishments would be encouraged to continue with their existing processes and membership requirements.

Another development is the requirement for a new National Committee for the Protection of Animals in Scientific Procedures in each member state. In the UK, this committee will be named the Animals in Science Committee (ASC) and it will replace the Animal Procedures Committee. National committees will advise the respective competent authority and AWBs on animal care and use, and “ensure sharing of best practice”. They must also “exchange information on the operation of AWBs and project evaluation and share best practice within the Union”. The chair, initial membership and remit of the new Animals in Science Committee will be finalised during the first months of 2013.

The kind of information and best practices which it would be useful to share between the UK's Animals in Science Committee and AWERBs, and also across member states, were topics for discussion at the 2012 RSPCA ERP Lay Members' Forum¹². Ideas on how AWERBs could develop were also collected to help in the imminent updating of the RSPCA handbook for lay members³ and the RSPCA/LASA *Guiding Principles*⁴ on best practice for ERPs.

FOOTNOTES AND REFERENCES

- 1 For more information regarding these forums, or our other work to promote effective ethical review, see: www.rspca.org.uk/sciencegroup/researchanimals/ethicalreview
- 2 See: www.rspca.org.uk/sciencegroup/researchanimals/ethicalreview/eventsandnewsletters
- 3 Current edition available at: www.rspca.org.uk/laymembers
- 4 Current edition available at: www.rspca.org.uk/sciencegroup/researchanimals/ethicalreview/ukandaroundtheworld

Engaging with decision makers

Scientific staff from the RSPCA's research animals department promote the RSPCA's policies, aims and objectives through engagement with governments, statutory bodies, industry, academia and other organisations. They are members of many national and international committees and working groups, and also have expert input into a range of consultations, both to government and non-governmental bodies, on a wide range of laboratory animal issues. Staff have also produced papers on a variety of topics that have been published in peer reviewed scientific journals.

Membership during 2012 included the following

- European Commission – expert working groups on: education and training; retrospective severity assessment; information on alternative methods and 3Rs strategies.
- Animal Procedures Committee (APC) – including member of the sub-committee on housing and husbandry of laboratory animals; and chair of the working group reviewing the revision of the European Directive on animals in scientific procedures.
- Laboratory Animal Science Association – Council member and co-convenor of section on education, training and ethics.
- British Pharmacological Society – Animal Welfare and Integrative Pharmacology Committee.
- BVA(AWF)/FRAME/RSPCA/UFAW Joint Working Group on Refinement (the RSPCA research animals department provides the secretariat for this initiative).
- The Boyd Group.
- UFAW 3Rs Liaison Group.
- European Partnership for Alternative Approaches to Animal Testing – Mirror Group.
- OECD Test Guidelines – Shadow Group.
- Various ethical review processes in industry and academia.
- *Animal Use in Research and the New EU Directive: Challenges and Opportunities for Animal Welfare, Science, Ethics and Society* (conference hosted by Northumbria University School of Law).
- *Models of Experimental Pain: Opportunities and Challenges* (organised by British Pharmacological Society, The Physiological Society and NC3Rs).
- ASAB/SEB/NC3Rs Symposium: *Implementing the 3Rs in Behavioural and Physiological Research*.
- Measuring Behaviour 2012.
- Chinese Association for Laboratory Animal Sciences – Annual Meeting 2012.
- NORECOPA (Norwegian consensus platform for replacement, reduction and refinement of animal experiments); *Harmonisation of the care and Use of Agricultural Animals in Research*.
- Fondazione Guido Bernardini international conference: *The European Commission Expert Working Groups to facilitate the Implementation of the Directive 2010/63/EU*.
- Laboratory Animal Science Association (UK) – annual winter meeting.

Examples of meetings/events participated in during 2012

- Home Office/Animal Welfare and Alternatives Stakeholder Group meetings on transposition of the European Directive.
- Meeting with Home Office Minister Lynne Featherstone MP.
- UK Parliamentary Committee on Science and Technology meeting – *Animal Experimentation: Are EU Regulations Adequate?*
- Home Office Liaison Officers Forum – training for members of ERPs.
- Systematic reviews in laboratory animal science – SYRCLE.
- NC3Rs Annual Science Review Meeting.
- Institute of Animal Technology – Congress 2012.
- 3rd East Mediterranean ICLAS Symposium.
- Joint Convention on the Scientific Roadmap for the Future of Animal-free Systemic Toxicity – coordinated by CAAT-EU.
- British Pharmacological Society – symposium addressing changes to the Animals (Scientific Procedures) Act by transposition of Directive 63/2010/EU.
- World Fisheries Congress – satellite meeting on the welfare of experimental fish.
- British Association of Zebrafish Husbandry – seminar on *The Perception of Pain and its Management*.

Responses to consultations included the following:

- Home Office – invitation to comment: *Draft Code of Practice on Care and Accommodation and Transposition of Annex III* (January).
- House of Commons: Science and Technology Committee – inquiry on the commercialisation of research (February).
- UK Statistics Authority: *Assessment of Statistics of Scientific Procedures on Living Animals Produced by the Home Office* (February).
- Home Office - invitation to comment: *Schedule 1 – Appropriate Methods of Humane Killing* (March).
- Nuffield Council on Bioethics consultation: *Novel Neurotechnologies – Intervening in the Brain* (April).
- Home Office: *Potential Conflicts of Interest in Relation to Named Persons [under the ASPA]* (June).
- Animal Procedures Committee – *Review of the Assessment of Cumulative Severity in Neuroscience Research Involving Non-human Primates* (June).
- Home Office: Proposal for content of the 'new' Personal Licence under ASPA (2013 and beyond) and process for implementation (September).



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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 1984¹). 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



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

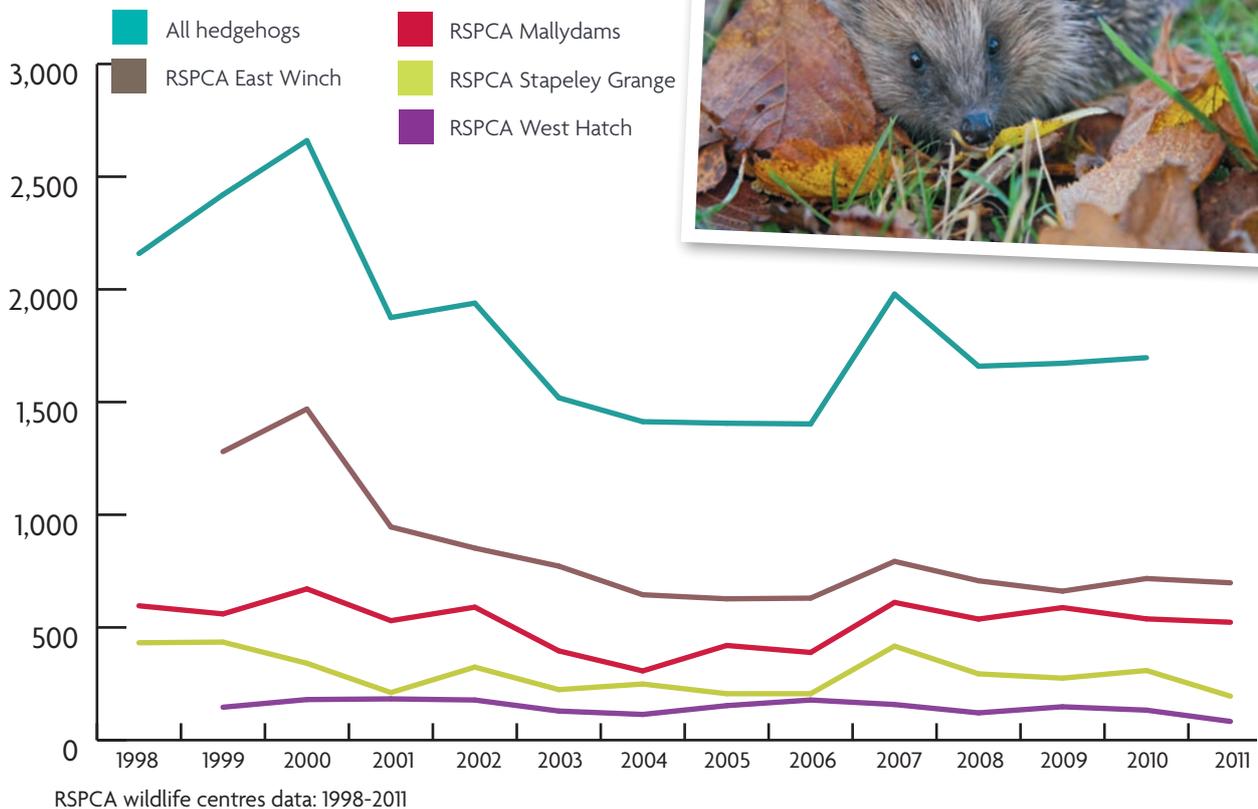
provide permanent, safe and species-appropriate homes for RSPCA-rescued marmosets. Seven RSPCA-case marmosets have recently taken up residence! By providing a funding brief to the team responsible for liaising with the RSPCA's major donors, we have been able to raise over £10,000 for this project.

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.



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 popularity¹. The RSPCA is facing growing numbers of incidents relating to certain exotics such as bearded dragons and meerkats².

Exotic pets were chosen as the focus of one of five *RSPCA Pledges*, launched in February 2012. While the pledge³ 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 expansion¹. 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., Eglinton, 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.
- Balx 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.



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