



# Research animals

Animals are used for many different purposes in research and testing, and each area of use raises specific ethical, animal welfare and scientific issues. The RSPCA adopts a constructive, practical approach, to develop more effective processes of ethical review and fuller implementation of the 3Rs\*. Our primary aim is the replacement of animal experiments with humane alternatives. Until this can be

achieved, we work to help ensure that the minimum numbers of animals are used and that suffering is reduced or, ideally, avoided altogether. In addition to the specific initiatives highlighted in this section, we have a high level of ongoing liaison with those involved in the regulation, care and use of animals in science, including senior officials within the European Commission, and the Home Office Animals in Science Regulation Unit.

\*The 3Rs are: replacement of animals with humane alternatives, reductions in animal numbers to the minimum necessary to answer the scientific question, and refinement of husbandry and procedures to reduce suffering and improve welfare throughout the animals' lives.

## PROMOTING EFFECTIVE ETHICAL REVIEW

Helping to ensure robust [ethical review](#) of animal use is a critically important area of work for the RSPCA. The Research Animals Department has a number of initiatives that support Animal Welfare and Ethical Review Bodies ([AWERBs](#)) – local committees that aim to ensure all use of animals at their respective establishments is carefully considered and justified, and that animals are replaced with humane alternatives wherever possible, animal numbers and suffering are minimised, and welfare is improved.

AWERBs have important responsibilities with respect to developing and implementing each establishment's local 'Culture of Care' and providing opportunities for staff with different roles to raise and discuss ethical issues.

## Working together

A second AWERB-UK meeting jointly convened by RSPCA, Laboratory Animal Science Association ([LASA](#)), Laboratory Animals Veterinary Association ([LAVA](#)) and the Institute of Animal Technology ([IAT](#)) was held in London in June 2017, with a theme of 'Putting Ethics into the AWERB', because AWERB members have consistently reported difficulty identifying and considering ethical issues, both during project review and in relation to other tasks.

This meeting aimed to assist – with presentations exploring the interpretation of 'ethics' from different perspectives within science and with workshops – on topics that the organising societies felt presented their members with difficult ethical questions. In total, 96 participants attended, representing a range of AWERB members including animal technologists, project licence holders, Named Persons, lay and independent members.

The presentations from the day are available [online](#), with reports from the workshops addressing how AWERBs might deal with ethical issues that arise from projects that have already been funded or are being conducted overseas; research into diseases affecting only a small percentage of the population; whether some species are 'special'; use of new technologies; and the emotional wellbeing of staff involved in euthanasing animals. The meeting inspired regional events organised by groups of AWERBs, and the Research Animals Department is continuing to promote wider consideration of ethical issues in addition to the 3Rs throughout all of our work areas.

We also used AWERB-UK to launch new RSPCA/LASA guidance on [developing induction materials for AWERB members](#). This freely available, online document provides examples of induction activities for new AWERB members, sets out a self-assessment training tool, and lists useful information about the AWERB. The guidance is intended to be adapted for individual establishments, so that they can devise an induction process reflecting their own local practice and culture of care.



**Dr Penny Hawkins** –  
Head of RSPCA Research Animals Department

“We increased our focus on practical ethics in 2017, inspiring ethics committee members to question whether, as well as how, animals are used in research.”

## Lay Members Forum

The annual RSPCA Lay Members Forum, held in London in December, was attended by over 70 participants from AWERBs within industry and academia. Presentations included: recognising, alleviating and preventing boredom and distress in animals (both can cause significant suffering); assessing the Culture of Care; good practice for addressing all the AWERB's tasks; ethical dilemmas in trauma research; and new findings on environmental enrichment and pain relief for zebrafish.

A discussion session on the Non Technical Summary section of the project licence application form encouraged lay members to help to ensure these are accessible to lay readers and clearly set out harms and benefits of each study.



# FOCUS ON SEVERE SUFFERING

Over the last few years we have been working with the scientific community to challenge them to reduce or avoid experimental procedures that can cause severe suffering to laboratory animals. We made great progress in 2017 on three key fronts:

- **Outreach** – we convened our second international ‘focus on severe suffering’ meeting.
- **Tackling specific ‘models’ and procedures with the potential for severe suffering, including spinal cord injury (see below: ‘Expert Working Groups’)**
- **General guidance** – we held a meeting on ‘predicting and avoiding mortality’ in laboratory animals.
- **We began work on a revised and updated ‘focus on severe suffering’ website.**

## RSPCA international meeting – focus on severe suffering

Following very positive feedback after our first *Focus on severe suffering* event held in Brussels in 2016, we were very pleased to hold a follow-up two day conference in October 2017 in Berlin, in association with the Max Delbrück Centre for Molecular Medicine in the Helmholtz Association. 120 delegates from 16 countries, including regulators, scientists, veterinarians and animal technicians attended to share ideas and promote new approaches for reducing and avoiding ‘severe’ suffering.

The first day focused on case studies in which severe suffering had been successfully reduced, in areas including haemophilia, multiple sclerosis and bone healing. The second day provided an opportunity for speakers to discuss study areas where challenges and obstacles to reduce or avoid severe suffering still remain, including cryoinjury in zebrafish, regenerative medicine therapies for kidney injuries in mice, and trauma models in rats.

The event also included presentations on the harm-benefit assessment; considering prospective severity of procedures; communicating with the public about harms and severe suffering; and reviewing the role of Animal Welfare Bodies, National Committees and others in sharing good practice.

A summary report from the meeting is [available](#) and requests for the presentations from the event can be made via email to: [research.animals@rspca.org.uk](mailto:research.animals@rspca.org.uk).

## Expert working groups

Over the last few years, we have produced a series of expert working group reports which provide guidance for researchers and animal care staff to enable them to reduce suffering of animals used to study epilepsy, multiple sclerosis, sepsis and rheumatoid arthritis. These reports are well received by the scientific community and are widely read and cited. Our latest expert working group looks at ways to reduce suffering of animals used to study spinal cord injury. The group was assembled in 2016 and we have had two meetings to date. The report should be ready for publication in early 2018.

**Dr Elliot Lilley** –  
Senior scientific officer

“Our second international ‘focus on severe suffering’ meeting was a great success – maintaining momentum of our efforts to encourage the scientific community to reduce or avoid experimental procedures that cause severe suffering to laboratory animals.”



## Avoiding mortality

The Research Animals Department held a workshop on avoiding mortality in research animals, jointly convened with the IAT, LASA and LAVA. This topic was chosen to further our joint work on severe suffering, because severity is assumed to be ‘severe’ when animals are found dead and, although this may not always be the case, there is a high risk that animals may suffer severely if it has not been possible to implement humane endpoints.

The workshop – held in September – was hosted by the University of Cambridge. Establishing the fundamental premise that zero mortality should be the goal, and there should never be an ‘acceptable’ level, participants explained how they had successfully reduced and avoided mortality within different research fields, purposes and species.

Good practice was shared with respect to monitoring animals more effectively; conducting in-depth reviews and analyses of records and data to identify better indicators to avoid mortality; and challenging regulatory requirements for mortality data within toxicology. A workshop report with practical guidance and action points will be produced early in 2018.

## Website update

The launch of the *Focus on severe suffering* website in October 2015 received excellent traffic, and we update the resource each quarter with new or revised material.

In 2016 we asked key stakeholders to review the resource and make suggestions for improvements. During 2017 we have been acting on these suggestions and will launch a new web resource in 2018.

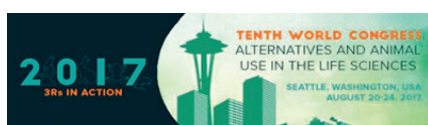
## ON THE INTERNATIONAL STAGE IN 2017

A key element of our outreach and impact is via our work with colleagues in RSPCA International, Eurogroup for Animals and other organisations to promote robust regulation of animal experiments, effective ethical review and fuller implementation of the 3Rs internationally.

■ In June we accepted an invitation from the Thai Association for Laboratory Animal Science to participate in the 11th TALAS International Symposium in Bangkok. We delivered a keynote presentation on understanding animals' behaviours and welfare needs, and a session focusing on making decisions about whether and how animals are used in research, incorporating consideration of 'harms' and 'benefits'.

■ In August, we were asked to input into a training event held at the National Pingtung University of Science and Technology, for members of Institutional Animal Care and Use Committees (IACUCs) from across Taiwan and the wider Pacific Rim region. We provided training on how effective regulation and ethical review of animal research could best be achieved and supported. Prior to this training conference, we also gave a special lecture on the harm-benefit assessment to researchers and students at the National Medical Defense Center in Taipei.

■ Every three years, the [World Congress on Alternatives and Animal Use in the Life Sciences](#) brings together around 1,000 people from government, regulatory bodies, industry, academia, and animal welfare and protection. We accepted an invitation and funding from the organisers to attend the 10th event in Seattle in August, and talk about the RSPCA's work on issues relating to animal research. We also gratefully received a bursary from the UK Laboratory Animal Science Association to allow a second representative from the Research Animals Department to attend and update delegates on our pioneering work in reducing and avoiding severe suffering (see [Focus on severe suffering](#) section opposite).



■ Our longstanding liaison with the Chinese Association for Laboratory Animal Science (CALAS) led to us delivering a satellite workshop on recognising and alleviating animal suffering, along with a plenary presentation on the importance of ethical reporting standards, at the CALAS Annual Congress in Chengdu in September.

■ Building on a relationship formed with the [South African Association for Laboratory Animal Sciences \(SAALAS\)](#) with our input into a 2015 conference on education and training, we were delighted in November 2017 to be able to participate in a follow-up meeting held near Cape Town. In recent years we have been working with SAALAS to help identify and meet the training needs for members of Animal Ethics Committees – the outcome of this work was presented at this event. We also delivered a presentation to the 143 conference delegates present from 23 countries, on achieving and promoting a good culture of care within research establishments.

■ We continue to work to achieve fuller implementation of the requirements of European Directive 2010/63/EU on the protection of animals used in scientific purposes, and faster development and wider uptake of alternative methods across the EU. Most of this activity in this regard is via our membership of [Eurogroup for Animals](#), with whom we liaise closely, and provide the Chair for its Research Animals Working Group.

If you are based outside of the UK and are interested in us working with you to provide specific training or conference input in your region, please contact us to discuss your requirements and opportunities for collaboration. Please email us at: [research.animals@rspca.org.uk](mailto:research.animals@rspca.org.uk)



**Barney Reed** –  
Senior Scientific Manager

“Our high level of collaboration with international partners has enabled us to directly promote the importance of effective regulation, ethical review and the 3Rs to whole new audiences of scientists, regulators and animal care staff”

## ASPECTS OF UK REGULATION

Throughout the year we have continued to liaise, and discuss key aspects of regulation with the Home Office [Animals in Science Regulation Unit](#) (ASRU). We attend regular stakeholder meetings (three in 2017) with ASRU as a member of the Animal Welfare Stakeholder Group.

With Brexit remaining high on the agenda, we continue to monitor developments to ensure that there is no dilution or weakening of the UK's regulatory controls – or standards of animal welfare – as the UK leaves the European Union. This has included working with a range of other animal welfare and protection organisations to produce a [report](#) identifying issues of concern, as well as potential opportunities for achieving improvements in UK animal welfare post-Brexit, including for animals used in research and testing.

### Focus on... wild animals used in research

In October 2017, in conjunction with the Animal and Plant Health Agency (APHA), we convened the third *Welfare of wild animals used in scientific procedures* meeting.

Over 50 delegates involved in regulation, or the use or care of wild animals – from seabirds to squirrels – attended. They heard presentations and discussed animal welfare, ethical and scientific issues relating to the capture, trapping, handling, tagging and post-release monitoring of animals in the wild, as well as refining housing and care of wild animals used for research studies in captivity.



### Animals in Science Committee

The Research Animals Department's Barney Reed continued to participate (in a personal capacity) as an appointed member of the [Animals in Science Committee](#) (ASC) – the public body established in the UK to provide impartial, balanced and objective advice to the Secretary of State on all matters concerning the use of animals in scientific procedures. Dr Penny Hawkins (Head of the Research Animals Department), who had previously served as a full member of the ASC, was co-opted back onto its AWERB Sub-committee until March 2018.

### Office of Science and Technology genomics and gene editing consultation

The advent of new 'gene editing' technology, means that manipulating the genes of animals becomes more straightforward and accessible. Discussion about the ethics of the use of this technology, the impact on animal welfare and the regulation of its use is now vital, and we and other RSPCA Science Group departments [responded](#) to the House of Commons Science and Technology Committee Inquiry in February, detailing our concerns about its use in animals.

### Focus on... rodents and rabbits

The 24th annual [Rodent Welfare Group Meeting](#), convened jointly with the Universities Federation for Animal Welfare (UFAW), was held in Surrey in November. A special session on the welfare needs of breeding rabbit does included talks on the behaviour of rabbit does and their kits in the wild, how the Home Office expects housing in the laboratory to facilitate these, and efforts made by establishments to refine rabbit housing. Rodent-related talks featured the *NC3Rs Year of Lab Rodent Welfare*, reducing stereotypes in gerbils, group housing rats with external devices, positive emotions in rats and good practice for housing male mice. A report of the meeting will be submitted to the journal *Animal Technology and Welfare*.

Our collaborators reported on good practice for housing male mice – an RSPCA-funded project initiated in response to ongoing debate on the issue. It is widely recommended to group house male laboratory mice because they are 'social animals', but male mice do not naturally share territories and aggression can cause serious pain and distress. Even without aggression, not all animals within a group will be in a state of positive welfare, depending on their position in the hierarchy. An essential question is whether it is in the best welfare interests of male mice to be group- or singly-housed. We surveyed current practice for housing male mice and funded a literature review on the pros and cons of single and group housing, through a researcher at the University of Bristol. This has been published in the journal *Animals*, including recommendations to help male mice 'live together better' and outstanding research questions.

## 16+ education in ethical human-animal interactions

At the beginning of 2017, the Government's concern that the UK is facing STEM (Science, Technology, Engineering and Mathematics) skills shortages, led to an inquiry into how these gaps may be addressed. We responded to the House of Commons Science and Technology Committee Inquiry in January calling for ethical decision-making around whether and how animals are used; the 3Rs (replacement, refinement and reduction); and animal welfare; to be included in the education and training programmes of all young life scientists.

Throughout this year we have been building on our relationships with the university community to identify what we can do to help future bioscientists to think more critically and reflectively about the potential use of animals in their research. We are now helping doctoral schools at universities across the country to develop and deliver courses in animal welfare, ethics and humane science for students who are using, or may go on to use, animals in their work.

In November, we delivered a one day workshop for postgraduate students and young researchers at [Sussex University Doctoral School](#). It was an opportunity for young scientists to reflect on their own opinions and practice in humane experimentation. It was a day of active discussion on current issues of concern with respect to the life sciences, not just limited to ethics and animal welfare. In 2018 we hope to run similar events at other doctoral schools in England and Wales.

2017 also saw the [British Pharmacological Society](#) ask us for input in the 'Consultation of the future of education, training and engagement for the use of animals in research'. Our influence on the outcome ensured great progress – including the teaching of animal welfare and ethics and replacing the use of animals in undergraduate education with humane alternatives.

We were also invited to participate in the [National Land Based College's](#) working group to help develop new 'T level' qualifications and apprenticeships for students wanting to pursue a career in the land based sector. In November we and colleagues from the Farm Animals Department attended a discussion meeting with colleges, accrediting bodies and industry representatives at Defra with the Secretary of State.

Throughout the course of the year, in conjunction with staff across other departments, we have also delivered sessions at numerous further and higher education establishments. Subjects requested by tutors have included RSPCA campaigns, animal welfare science and legislation, guidelines, standards, assessments and outcomes, the ethics of human-animal interactions, and careers involving animals.

■ In August, we joined a new international panel of experts set up by the Animals in Science Policy Institute. Participating in a meeting in Vancouver in a 'virtual' capacity, meant that we could talk to our international partners from Canada, USA, and New Zealand without leaving the UK. The aim of this new working group is to replace the dissection of animals in schools across the United States and Canada with humane alternatives, and we will play an active role in this project's future development.



**Juliet Dukes –**  
Senior Scientific Officer

“Our work with young bioscientists and their tutors empowers them to challenge current approaches and make ethical decisions that improve the lives of animals and the quality of science.”



# Responses to consultations

- House of Commons Science and Technology Committee: Inquiry on closing the STEM skills gap.
- House of Commons Science and Technology Committee: Inquiry on genomics and genome-editing.

- All-Party Parliamentary Group on Animal Welfare: Tackling livestock worrying and encouraging responsible dog ownership.

## National Assembly for Wales

- National Assembly for Wales. First 1000 days.

## Welsh Government

- Welsh Government Taking Forward Wales' Sustainable Management of Natural Resources.
- Welsh Government Code of Practice for the Welfare of Equines.
- Welsh Government Code of Practice for the Welfare of Dogs.

- Welsh Government consultation: A refreshed TB eradication programme.
- Welsh Government consultation: Mobile Animal Exhibits.

## Department for Environment, Food & Rural Affairs (Defra)

- Mandatory CCTV recording in slaughterhouses.
- Codes of Practice for the Welfare of Meat Chickens and Breeding Chickens.

- Consultation response to Defra on Bovine TB: Supplementary badger disease control.
- Consultation response to Defra and Welsh Government: Proposals to ban the use of plastic microbeads in cosmetics and personal care products in the UK (and call for evidence on other sources of microplastics entering the marine environment).

## Local government

- Denbighshire Council Proposed Public Spaces Protection Orders.
- Flintshire County Council Dog Control Public Space Protection Orders.

## World organisation for animal health (OIE)

- OIE terrestrial code of pigs.
- OIE Chapter: Animal Welfare and Laying Hen Production Systems.
- OIE Chapter: Animal Welfare and Pig Production Systems.

## Eurogroup

- Eurogroup for Animals submission to the European Commission's *Questionnaire for targeted stakeholder organisations involved in the development, validation or promotion of non-animal alternatives to the use of animals for scientific purposes* (2017).

## Biotechnology and Biological Sciences Research Council

- Strategy for UK Biotechnology and Biological Sciences.

## The Agriculture and Horticulture Development Board (AHDB)

- AHDB Quality Standard Mark for Halal Sheepmeat.
- AHDB: Proposal to introduce a farm assurance scheme for Halal sheepmeat.

## Others

- Certified Humane: Draft Humane Farm Animal Care Standards. Pigs – January 2018.
- Certified Humane: Draft Humane Farm Animal Care Standards Laying hens – January 2018.
- FAWAC: Animal Welfare Guidelines for Emergency Killing of Pigs on Farm.
- Global Animal Partnership 5-Step Animal Welfare Rating Standards for Chickens Raised for Meat v3.0.
- RSPCA Australia Approved Farming Scheme Standards – Meat chickens.
- RSPCA Australia Approved Farming Scheme Standards – Pigs.
- Soil Association slaughter standards.
- Soil Association standards for farming and growing-pigs.
- Soil Association standards for farming and growing-meat chickens.
- Scottish Environment Protection Agency: Regulation of marine cage fish farms – updating our approach to protecting the sea bed.
- Cargill: Does salmon farming cause deafness in salmon?

Companion animals Farm animals Research animals Wildlife

# Publications

## Companion Animals Department

- **Gaines, S.A.** (2017) *Campaign to end breed specific legislation*. Veterinary Record 180 (5).
- **Gaines, S.A.** (2017) *Petition seeks support for campaign to end BSL*. Veterinary Times. January 30, 2017 p27.
- **Gaines, S.A.** (2017) *Why you should join the end BSL campaign*. The Veterinary Nurse. 8(7) p412.
- **Oxley, J.A., Gaines, S.A.** *The welfare implications as a result of breed specific legislation in the UK*. Poster presented at *Measuring Animal Welfare and Applying Scientific Advances: Why Is It Still So Difficult?* UFAW International Animal Welfare Science Symposium (2017) Jun 27-29, Surrey, UK.
- **Gaines, S.A.** *Review of The Domestic Dog – its evolution, behavior and interactions with people, by James Serpell*. Animal Welfare. November, 2017. p479-481.

## Farm Animals Department

- Van Dijk, L., Elwes, S., Main, DCJ., Mullan, SM., 2018. *Farmer perspectives on welfare outcome assessment: learnings from four farm assurance scheme consultation exercises*. Animal Welfare 27, pp. 1-11.
- *RSPCA welfare standards for hatcheries (chicks, poults and ducklings)*. Updated 2017.
- *RSPCA welfare standards for meat chickens*. Updated 2017.
- *RSPCA welfare standards for laying hens*. Updated 2017.
- *RSPCA welfare standards for turkeys*. Updated 2017.

## Research Animals Department

- Kappel S, Hawkins P, Mendl M T. (2017). *To group or not to group? Good practice for housing male laboratory mice*. Animals 7(12), 88; DOI:10.3390/ani7120088.
- **Hawkins P, McNeilly A, Wilson J, Brown A, Krall C, Rees J, Rogers S, Peirson S, Walker M, Ryder K & Golledge H.** (2017). *Report of the 2016 RSPCA/UFAW Rodent and Rabbit Welfare Group meeting*. Animal Technology and Welfare 16(2), 77-86.
- **Lilley, E** (2017). *Animal 'models': How a mechanistic approach can reduce suffering and improve translatability*. ATLA 45, 159-160.
- **Smith A, Clutton E, Lilley E, Hansen K & Brattelid T.** (2017) *PREPARE: guidelines for planning animal research and testing*. Laboratory Animals, DOI: 10.1177/0023677217724823.
- **Lilley E, Bailey, S & Robinson E.** (2017). *Using animals in research? It's time to refine!* Pharmacology Matters 10(1), 4-6.
- **Reed B, Beatham S, Carter S, Clubb R, Garrod K, Gale M, Gomm M, Knight K, Lane J, Mathews F, Pimlott P, Smith A, Wilson R, Weyer U & Hawkins P** (2017). *Report of a RSPCA/APHA meeting on the welfare of wild animals used in research*. Animal Technology and Welfare 16(1), 13-25.

- **Hawkins P & Golledge H** (2017). *The 9 to 5 Rodent – Time for Change? Scientific and animal welfare implications of circadian and light effects on laboratory mice and rats*. Journal of Neuroscience Methods, <https://doi.org/10.1016/j.jneumeth.2017.05.014>.

## Wildlife Department

- **Dubois, S., Fenwick, N., Ryan, E. A., Baker, L., Baker, S. E., Beausoleil, N. J., Carter, S., Cartwright, B., Costa, F., Draper, C., Griffin, J., Grogan, A., Howald, G., Jones, B., Littin, K. E., Lombard, A. T., Mellor, D. J., Ramp, D., Schuppli, C. A. and Fraser, D.** (2017), *International consensus principles for ethical wildlife control*. Conservation Biology. doi:10.1111/cobi.12896.
- **RSPCA** (2017) *Understanding the Motivation of Beginner Reptile Owners*. Published online.

## BLOGS

### COMPANION ANIMALS

- [Seven puppies euthanised under Breed Specific Legislation.](#)
- [Caring for rabbits in winter.](#)
- [Rabbit Haemorrhagic Disease – are your rabbits protected?](#)
- [Are your rabbits as happy as can be?](#)
- [Why do my rabbits...?](#)
- [Preparing your rabbits for winter.](#)
- [Playing with dogs.](#)
- [We're all going on a summer holiday.](#)
- [Another year at Crufts.](#)
- [Nine things that anyone who's ever owned a puppy will know.](#)
- [Liven up your walk with these training games.](#)
- **Contributor to:** [What would make the world a better place for dogs?](#)

### FARM ANIMALS

- [What are we doing about non-stun slaughter? RSPCA Insights.](#)

### WILDLIFE

- [Why do foxes behave the way they do?](#)
- [Fifty year anniversary of the Torrey Canyon oil tanker disaster.](#)
- [Ducklings – when to help them and when to leave them alone.](#)
- [Six common hedgehog mishaps.](#)



# RSPCA Science Group

## Chief Scientific Officer

Julia Wrathall BSc MSc PhD ChMIACE

## Companion Animals Department

Samantha Gaines BSc MSc PhD

Lisa Hens BSc

Alice Potter BSc MSc

Jane Tyson BSc MSc PhD

## Farm Animals Department

Marc Cooper BSc MSc PhD

John Avizienius BA MSc

Kate Parkes MA MSc

Mia Fernyhough BSc MSc PGCE

Siân Phillips BSc

Sophie Elwes MA MSc

Emily Coughlan BA BVetMed (Cantab) MRCVS

Sconaid Wastie BSc MSc

Sophie Collins BSc MSc PhD

Eoina Rodgers BSc BA

Luisa Dormer BSc MSc

Belinda De Lara

## Regionally based field staff

Allan Pearson OND

Charlotte Thomas BSc

Phil McCarthy

Emilie Wix BSc

Ian Michie BA NSch

Rob Howorth (until 17.11.17)

Grace Harris-Bridge BSc MSc (until 10.11.17)

## Research Animals Department

Penny Hawkins BSc PhD

Barney Reed BSc MSc

Elliot Lilley FBPhS BSc PhD

Juliet Dukes FRSB BSc MSc PhD

Maria McGrath (also covers Companion Animals)

## Wildlife Department

Adam Grogan BSc

Ros Clubb BSc DPhil

Nicola White BSc MSc PGDip

Llewelyn Lowen BSc MSc

Sue Gallagher

Evangeline Button BA

## RSPCA Wildlife Centre Managers

Alison Charles VN

Bel Deering BSc DPhil

Lee Stewart BSc MSc

Simon Fathers BSc



Helping animals through welfare science

[www.rspca.org.uk/sciencegroup](http://www.rspca.org.uk/sciencegroup)