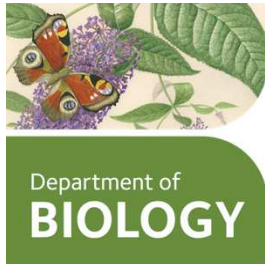


Conference Abstract Book



www.hedgehogconference.com

The International Conference for Hedgehog Rehabilitators is hosted by:



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Conference programme

Saturday the 13th of January 2024

08:30: Conference registration opens

Coffee, tea and snacks are served

9:45-10:00: Welcome to the International Conference for Hedgehog Rehabilitators

Session: UK hedgehog conservation NGOs and their initiatives

10:00-10:30: Nigel Reeve: "The BHPS – what do we do?"

10:30-10:45: Grace Johnson: "Introducing the National Conservation Strategy for Hedgehogs in Britain"

10:45-11:00: Paulina Malgorzata Pawlikowska: "Introducing the National Hedgehog Monitoring Programme"

11:00-11:30: Coffee break

Session: The importance of data

11:30-12:00: Kate Davies: "Legislation and policy as drivers of wildlife rehabilitation practice across Europe"

12-12:30: Anne Berger: "The importance of keeping hedgehog station protocols for hedgehog conservation and population monitoring"

12:30-13:00: Philip Baker: "An examination of temporal trends in hedgehog admissions to wildlife centres: lessons learnt and future recommendations"

13:00-13:45: Lunch

13:45-15:15 Workshop: Introducing the International hedgehog database

15:15-15:30: Short break

Session: Pollutants in hedgehogs

15:30-16:00: Katharina Seilern-Moy: "Garden Wildlife Health – update on recent hedgehog disease investigations"

16:00-16:15: Sophie Lund Rasmussen: "Pesticides and biocides in the Danish population of European hedgehogs (*Erinaceus europaeus*)"

16:15-16:45: Emily Thrift: "Assessing the presence of plastics within the European hedgehog's diet – supplementary food and wild prey"

16:45-17:15: Coffee break and change of lecture room

Session: Medical conditions and treatments of hedgehogs

17:15- 17:30: Yannick Van de Weyer: “Efficacy of levamisole, ivermectin and moxidectin against *Capillaria* spp. in European hedgehogs (*Erinaceus europaeus*)”

17:30-17:45: Rikke Hansen: “Is Tessie an option for light sedation of hedgehogs by the caretakers? – And why does Sileo not seem to work?”

17:45-18:00: Dylan Yaffy: “Describing a syndrome? Investigating “pug-nosed”/”dwarf” hedgehogs””

And finally, an important and uplifting last talk of the day

18:00-18:30: Hugh Warwick: “Why did the hedgehog cross the road?”

18:30-18:45: Rounding off and thank you for today!

19:00: *Conference dinner*



Sunday the 14th of January 2024

9:00: Good morning

Session: Hedgehogs under the microscope

9:00-9:15: Rikke Hansen: “How to handle wounds and abscesses in hedgehogs”

9:15-9:45: Emily Harper: “Scratching the surface: A systematic review of hedgehog parasites”

09:45-10:15: Barbora Bolfikova: “Hedgehogs and genes on the islands”

10:15-10:45: *Coffee break*

10:45-12:15: Workshop: What research is needed and how to get updated and access the publications?

12:15-13:00: *Lunch*

Session: Applying research for hedgehog conservation

13-13:30: Brawin Kumar: “People’s Perceptions: Unveiling Threats and Conservation Strategies for the Endemic Madras Hedgehog (*Paraechinus nudiventris*) in Tamil Nadu, India”

13:30-14: Sophie Lund Rasmussen & Aage Kristian Olsen Alstrup: “Robotic lawn mowers and European hedgehogs- the process of designing a hedgehog safety test to create more hedgehog friendly robotic lawn mowers”

14:00-14:30: *Coffee break*

Session: Hedgehog conservation and regulation

14:30-15:00: Abigail Gazzard: “Assessing the statuses of hedgehogs in Europe”

15:00-15:30: Vicky Grant & Thomas Churchyard: “Introducing the Uist Native Wildlife Project”

15:30: Rounding off the conference, thank you, and get home safely!



“The BHPS – what do we do?”

Dr Nigel Reeve

British Hedgehog Preservation (BHPS) trustee,

Former Head of Ecology,
The Royal Parks in London, UK

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<https://www.britishhedgehogs.org.uk>



Abstract

The BHPS is a UK registered charity with a mission to protect the future and welfare of native British hedgehogs (*Erinaceus europaeus*). Based in Shropshire, the society was founded in 1982 by Major Adrian Coles who campaigned for hedgehog escape ramps to be fitted in cattle grids. Now, with over 11,500 supporters, through our campaigns, advocacy, educational projects and partnerships, we raise awareness of what can be done to help reverse the decline of hedgehogs in the wild, improve their welfare and safeguard the future of this much-loved animal. Leaflets and other information can be downloaded from our website www.britishhedgehogs.org.uk and we provide free information packs to schools and project packs for Scouts and Guides. We offer advice to enquirers with sick, injured or orphaned hedgehogs and we maintain a list of about 590 independent rehabilitators in the UK so that we can hopefully find a local contact for them. We also produce advice and guidance for rehabilitators and veterinary practitioners. Partnerships are important, and Hedgehog Street is one very successful public engagement project jointly delivered in partnership with the People’s Trust for Endangered Species (<https://ptes.org/>) and involving over 121,000 hedgehog champions. The talk will give an over-view of our work with examples including some of the scientific research funded by the BHPS that provides important new insights into the conservation and welfare of hedgehogs.

Notes

“Introducing the National Conservation Strategy for Hedgehogs in Britain”

Grace Johnson, BSc (Hons) Zoology,

Hedgehog Officer, Hedgehog Street, People’s Trust for
Endangered Species and British Hedgehog Preservation
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Abstract

Hedgehogs are an unwaveringly popular species, frequently topping polls of our favourite British wildlife species. Sadly despite ongoing public affection, this once common mammal has suffered significant declines in recent decades. Survey data indicate that rural hedgehog populations remain critically low in places (Wembridge et al 2022). While a more hopeful picture is emerging for their urban counterparts, overall the species continues to struggle.

In recent years The British Hedgehog Preservation Society (BHPS) and People’s Trust for Endangered Species (PTES) have led the charge to conserve hedgehogs. Through collaborative research, targeted conservation and a dedicated public awareness campaign, Hedgehog Street, much has been achieved to address knowledge gaps, form critical partnerships, disseminate information, and raise nationwide concern for the species. Wider partnership collaborations spearheaded by the two charities include work with farmers, land managers, housing developers and other key stakeholders.

Despite determined efforts to address the various threats facing hedgehogs, the decline in their population continues. It was therefore decided by BHPS and PTES that a more targeted and concerted effort was needed to halt their decline and to ensure this popular species becomes common with sustainable populations across Britain once again. A new national conservation strategy has been produced with process design and facilitation support from the International Union for the Conservation of Nature (IUCN) and in collaboration with a diverse group of stakeholders (covering sectors including housing, farming, land management, transport and rehabilitation). The new strategy aims to unify and strengthen existing conservation efforts, while engaging many more people, groups and industries in scaled-up efforts working towards practical goals and research priorities. This strategy will act as a framework and reference point for all actions relating to hedgehogs in Britain.

Notes

“Introducing the National Hedgehog Monitoring Programme”

Paulina Malgorzata Pawlikowska,

Magister in Applied Psychology,

National Hedgehog Monitoring Programme,
PhD student, Nottingham Trent University, UK

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Abstract

Estimates of population size are essential for managing and conserving wildlife. Hedgehogs are a species of conservation concern, and a lack of robust population estimates limits our understanding of their population trends and assessment of their conservation status. To address this, we have initiated a 3-year pilot monitoring project that uses a network of camera traps to provide robust annual hedgehog population estimates across a range of habitats and regions of Great Britain. Whilst hedgehogs will be the key focus, the monitoring methodology will be valid for multiple co-occurring species of interest, fulfilling some of the objectives that the Tracking Mammal Partnership aimed to fulfil almost two decades ago. In this presentation, we will describe the challenges such a survey creates and how we hope to overcome these. We also call for organisations to join the partnership and describe how they can become involved.

Notes

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“Legislation and policy as drivers of wildlife rehabilitation practice across Europe”

Kate Davies, Kate Davies, MRes in ecology,
PhD student, Nottingham Trent University, UK

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Authors: Kate Davies¹, Dr Antonio Uzal¹, Dr Dmitry Kishkinev², Dr Sophie Lund Rasmussen^{3,4} & Prof. Dawn Scott¹

¹Nottingham Trent University, UK

² Keele University, UK

³ University of Oxford, UK

⁴Aalborg University, Denmark



Abstract

Wildlife rehabilitation is the practice of caring for sick, injured, or orphaned wild animals, with the goal of releasing them back to the wild. This practice is carried out across Europe and is underpinned by varying levels of legislation and policy, ranging from no specific legislation or regulation, to comprehensive laws that require wildlife rehabilitators to only operate under licence or permits. This review aims to examine the current legislation and policy pertaining to wildlife rehabilitation across Europe and how this influences and shapes the wildlife rehabilitation communities and practices of those countries.

Notes

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“The importance of keeping hedgehog station protocols for hedgehog conservation and population monitoring”

Dr Anne Berger

Leibniz- Institute for Zoo and Wildlife Research,
Berlin, Germany

Leader of the project „Behaviour, genetics, and
protection of urban and suburban hedgehogs“

<https://www.izw-berlin.de/en/behaviour-genetics-and-protection-of-urban-and-suburban-hedgehogs.html>

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Abstract

Despite their high popularity and widespread distribution, wild hedgehogs are a difficult to study due to their nocturnal, hidden way of life; moreover they are difficult to distinguish individually without markings. As a result, basic data are often lacking for wild hedgehogs, or many data (e.g., on litter time and size) are based on quite old studies. This lack of hard data about hedgehogs in the wild starts with population information ("How many hedgehogs live in my area?"), continues with updated reproduction features ("When were how many young born?") and ends with data on their causes of death ("Was it lack of food, disease or injury?"). Since a relatively high proportion of hedgehogs nowadays are in care of rehabilitation centers, information from the hedgehogs in these centers provides a solid data base for evaluating phenomena at the national level provided that information is recorded in most centers at all and can be provided by them. Thus, based on data provided by rehabilitation centers and citizen science campaigns, basic data can be obtained for population development models or on the effects of various environmental factors or human activities (e.g., cut wounds, plastic entanglements). In my presentation, I will show examples of scientific studies based on data obtained at hedgehog rehabilitation centers. Many of these studies are an irreplaceable argumentation aid in the fight for better protection of hedgehogs by law or for the enforcement of national protection measures in practice. Recommendations for hedgehog rehabilitation centers on their data collection and management result from these examples.

Notes

“An examination of temporal trends in hedgehog admissions to wildlife centres: lessons learnt and future recommendations”

Dr Philip Baker,

Lecturer at School of Biological Sciences,
University of Reading, UK

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Authors:

Lucy Bearman-Brown¹, Adam Grogan² & Philip Baker³

¹ Hartpury University, UK

² Royal Society for the Prevention of Cruelty to Animals, Wildlife Department, UK

³ University of Reading, UK



Abstract

Recent estimates suggest that there are more than 300 hedgehog rescue hospitals / centres operating in Britain, collectively taking in >40,000 hedgehogs each year. Given the large number of animals involved, wildlife rehabilitation records could represent a potentially valuable source of information relating to different aspects relevant to the conservation of hedgehog populations in the UK. In this study, we analysed >20,000 records spanning a 13-year period examining factors associated with the rehabilitation of hedgehogs admitted to the RSPCA's four wildlife centres in England & Wales. In general terms, the numbers admitted annually increased over time, with natural causes, man-made causes, orphaned young and animal attacks comprising 46.1%, 14.9%, 19.1% and 3.0% of admissions, respectively; given the indirect impacts of humans, however, anthropogenic factors could have been responsible for up to 47.2% of cases. Overall, 50.6% of hedgehogs survived to be released, with survival probabilities being highest for orphans (63%) and lowest for man-made causes (39%). However, 31.0% of animals that died / were euthanased perished more than >48h after being admitted, suggesting that improvements in triage procedures may be warranted. Several limitations associated with the dataset were identified (e.g., missing data, biases in missing data) such that there are likely to be significant challenges associated with the use of such data as a research and conservation tool.

Notes

“Garden Wildlife Health – update on recent hedgehog disease investigations”

Dr Katharina Seilern-Moy,

Wildlife Veterinarian and Postdoctoral Researcher

Garden Wildlife Health Project,
Institute of Zoology, Zoological Society of London, UK

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www.gardenwildlifehealth.org



Abstract

The Garden Wildlife Health (GWH) project (www.gardenwildlifehealth.org) is a national citizen science project that conducts scanning disease surveillance of garden wildlife, including hedgehogs, across Great Britain and launched in its current form in 2013. The Zoological Society of London co-ordinates GWH in collaboration with the Royal Society for the Protection of Birds, the British Trust for Ornithology, and Froglife. With hedgehogs declining across the country, the aim of the GWH project is to monitor their health and identify any disease threats that might impact their welfare and conservation, as well as captive animal or public health. Therefore, GWH focuses on infectious as well as non-infectious disease conditions, two of which will be explored in more detail: 1. The recently identified hedgehog arterivirus infection, which was found to be associated with multiple neurological disease outbreaks in wildlife rehabilitation centres, and its potential implications for free-living hedgehogs; and 2. The investigation of pesticide and rodenticide residues in hedgehogs in England, and the potential significance such chemical exposure may have on their health.

Notes

“Pesticides and biocides in the Danish population of European hedgehogs (*Erinaceus europaeus*)”

Dr Sophie Lund Rasmussen,

Research fellow at Wildlife Conservation Research Unit (WildCRU) and Linacre College, University of Oxford

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sophie.rasmussen@biology.ox.ac.uk

Follow my research here:



Pindsvineforskning Dr Hedgehog Dr_Pindsvin ResearchGate



Authors: Sophie Lund Rasmussen ^{1,2,3}, Peter Roslev ³, Jeppe Lund Nielsen ³, Cino Pertoldi ^{3,4} and Katrin Vorkamp ⁵

¹ Wildlife Conservation Research Unit (WildCRU), University of Oxford, UK

² Linacre College, University of Oxford, UK

³ Department of Chemistry and Bioscience, Aalborg University, Denmark

⁴ Aalborg Zoo, Denmark

⁵ Department of Environmental Science, Aarhus University, Denmark

Abstract

The exposure to potentially toxic chemicals in hedgehogs could be a contributing factor to the general decline of this species, either due to the reduction of food items through insecticide use, or poisoning, or due to non-acute toxic health consequences for the hedgehogs. Our research studied the occurrence of various pesticides and biocides in the population of European hedgehogs from Denmark as well as factors potentially explaining the levels of chemicals detected, such as age, sex, location, cause of death and habitat type of the samples, as well as the prevalence of *mecC*-MRSA and endoparasites in the hedgehogs tested. We used 115 liver samples obtained from dead hedgehogs collected through citizen science in Denmark during 2016 as part of The Danish Hedgehog Project, and analysed them for a selection of commonly used rodenticides (N= 7), insecticides (N= 4) and herbicides (N= 8), utilising a liquid chromatography-tandem mass spectrometry (LC-MS/MS) method. We chose seven types of rodenticides for the target analyses: bromadiolone, coumatetralyl, brodifacoum, difenacoum, difethialon, chloralose (consisting of α -chloralose and β -chloralose) to obtain a diverse representation of these compounds. The following four insecticides were prioritised: imidacloprid, permethrin (cis and trans) and fipronil. The eight herbicides selected for analyses were: metamitron, MCPA, 2,4-D, diflufenicane, prosulfocarb, bentazon, pendimethalin og fluroxypyr. Rodenticides were detected in 84% of the samples (N= 97/115), insecticides in 43% of the samples (N= 50/115) and herbicides in 50% of the samples (N= 58/115). The compounds most frequently detected included the insecticide imidacloprid (35%), the herbicide metamitron (29%) and the rodenticide bromadiolone (79%). The presence and median concentrations of pesticides and biocides did not appear to be affected by sex, age, habitat type or the prevalence of *mecC*-MRSA and endoparasites in the hedgehogs tested.

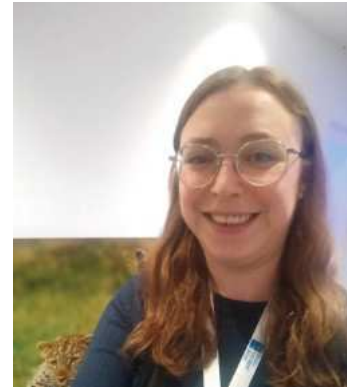
“Assessing the presence of plastics within the European hedgehog’s diet – supplementary food and wild prey”

Emily Thrift, MSc in zoology,

PhD student, University of Sussex, UK

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Twitter: @EmilyZoologist1



Abstract

To understand the movement of plastics through a terrestrial food web, both the European hedgehog's supplementary feed and wild prey species were analysed for potential microplastics. This was achieved by carrying out a survey of 30 rescue centres and testing the top 8 brands of dog, cat and hedgehog foods, which resulted in 48 samples being tested. For the wild prey species > 600 samples of 6 different insect groups were collected from 5 different habitat types and analysed. This allowed for an understanding of the plastic content in both types of food and their potential impacts on the European hedgehog.

Notes

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“Efficacy of levamisole, ivermectin and moxidectin against *Capillaria* spp. in European hedgehogs (*Erinaceus europaeus*)”

Yannick Van de Weyer, DVM, MSc (Wild Animal Health), MRCVS,

Resident in veterinary pathology,
University of Liverpool, UK

Authors: Yannick Van de Weyer ^{1,3}, Mariana C. Santos ¹, Nicola Williams ¹, Alda M. Gonçalves ¹, Wendy Hawley ¹, Kate McVay and Steve Bexton ².

¹ RSPCA Stapeley Grange Wildlife Centre, UK

² RSPCA East Winch Wildlife Centre, UK

³ Institute of Infection, Veterinary and Ecological Sciences,
University of Liverpool, UK



Abstract

This randomised study aimed to assess and compare the efficacy of treatment protocols containing levamisole, ivermectin or moxidectin against *Capillaria* spp. in naturally infected European hedgehogs (*Erinaceus europaeus*) presented to a British wildlife rehabilitation centre. Faecal analysis, consisting of wet mount and flotation, was performed for 229 hedgehogs weighing ≥ 200 g. The prevalence of *Capillaria* was 81%, whereas *Crenosoma striatum* was detected in 41%. Animals testing positive for *Capillaria* spp., excluding pregnant females, were randomly allocated a treatment protocol. Initially, hedgehogs ($n = 50$) received one of six ‘pilot’ protocols, whereas the remaining animals ($n = 97$) received one of three ‘main’ protocols. Faecal analysis was repeated on day 8 and day 12 after treatment initiation. Efficacy of each treatment was assessed based on *Capillaria* reduction rate (CRR), weight gain, presence of respiratory clinical signs and outcome. Pilot protocols containing only moxidectin had a significantly lower CRR ($\geq 28.1\%$) compared to those with levamisole or ivermectin ($\geq 86.6\%$), whereas the main protocols containing levamisole had a significantly higher CRR ($\geq 93.0\%$) compared to those containing only ivermectin ($\geq 69.3\%$). Clinical parameters did not differ significantly between treatments, but animals with respiratory clinical signs at the end of the trial were significantly more likely to test positive for *Crenosoma striatum* and had lower CRR. Based on the formulations and dosages trialled, moxidectin is not recommended for treating capillariosis in European hedgehogs, whereas levamisole given orally for two consecutive days at 25-35mg/kg is suggested as the treatment of choice. Animals with persistent respiratory clinical signs and refractory *Crenosoma* burdens, may require additional levamisole between day 10-12. Anthelmintic therapy is not without risk and sensible use is advised. The goal of therapy should never be complete parasite elimination, but rather, reducing parasite burdens to acceptable levels which are not associated with clinical signs or failure to thrive.

Notes

**“Is Tessie an option for light sedation of hedgehogs by the caretakers?
– And why does Sileo not seem to work?”**

Rikke Hansen, Veteriarian, DVetMed,
City Dyreklinik, Denmark

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Authors: Rikke Hansen¹, Sophie Lund Rasmussen^{2,3,4}, Aage Kristian Olsen Alstrup^{5,6}

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³ Linacre College, University of Oxford, UK

⁴ Department of Chemistry and Bioscience, Aalborg University, Denmark

⁵ Department of Nuclear Medicine and PET, Aarhus University Hospital, Denmark

⁶ Department of Clinical Medicine, Aarhus University, Denmark



Abstract

Starting in the late spring of 2023 we have conducted a small study of the use of Tessie as a light sedative for hedgehogs in Denmark.

Tessie is a new anxiolytic for dogs. Tasipimidin is a strong and selective alpha2 adrenoceptor agonist, that mimics the actions of drugs like dexmedetomidine. However, Tessie can get absorbed through the GI system, which none of the other alpha 2 adrenoceptor agonists can.

Sileo is a gel with dexmedetomidine that has a transmucosal absorption and is not working if swallowed. We tried to use this drug without success a couple of years ago. This might be due to the problem with securing transmucosal absorption in the hedgehog.

Notes

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“Describing a syndrome? Investigating “pug-nosed”/“dwarf” hedgehogs”

Dylan Yaffy, BVetMed, DipACVP,

Lecturer in Zoo and Wildlife Pathology,
Royal Veterinary College, UK

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¹Department of Pathobiology and Population Sciences,
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²Department of Clinical Science and Services, Royal
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³ Wildlife Conservation Research Unit (WildCRU),
University of Oxford, UK

⁴ Linacre College, University of Oxford, UK

⁵ Department of Chemistry and Bioscience, Aalborg University, Denmark



Abstract

A mysterious physical and behavioural syndrome affecting free-ranging European hedgehogs (*Erinaceus europaeus*) has been reported by wildlife carers across the United Kingdom. Anecdotally, affected hedgehogs present to wildlife carers as juveniles with a variety of physical distortions and behavioural abnormalities, including a “squashed” face and shortened limbs with a subdued or “dumb” demeanour. Affected hedgehogs have either been euthanised due to welfare concerns, released back into the wild or cared for within an enclosed garden. The initial aim of this study is to raise awareness of this syndrome through the implementation of a questionnaire directed at hedgehog carers. To facilitate the development and distribution of the questionnaire, a pilot study comparing and contrasting the physical features of an apparently normal hedgehog with one of the so-called “pug-nosed”/“dwarf” individuals was performed. An affected hedgehog and a control individual that either died or were euthanised while under care in England were examined. A preliminary morphologic description of each hedgehog was performed, including a detailed CT examination of the cadavers followed by a macroscopic post-mortem examination. Measurable differences between the two individuals were described. The main morphologic feature distinguishing between the affected and unaffected hedgehogs was the presence of a shorten snout and reduced nasal cavity size. Further work is required to better describe the syndrome and begin to investigate the inciting cause. Initially, future work will describe the morphologic features in at least four additional affected individuals to better compare with a larger number of controls. Following on from an increased awareness of the syndrome, the goal is to obtain at least 50 individuals from across the UK to complete a more thorough morphological description alongside genetic testing to investigate the cause of the abnormality. Through collaboration with hedgehog carers, we aim to highlight the welfare implications associated with this syndrome.

“Why did the hedgehog cross the road?”

Hugh Warwick, author, ecologist and
spokesperson for the British Hedgehog
Preservation Society
Visiting Fellow at Oxford Brookes University

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Abstract

Sometimes a little light relief can help a conference, especially towards the end of the day - and here comes a talk with plenty of that. A less than serious dive into the wonderful world of our favourite animal - from the answer to the question posed in the title through to the entirely reasonable claim that the hedgehog is the most important creature on the planet - possibly via the International Hedgehog Olympic Games and the strange places that hedgehogs have appeared in history and art.

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“How to handle wounds and abscesses in hedgehogs”

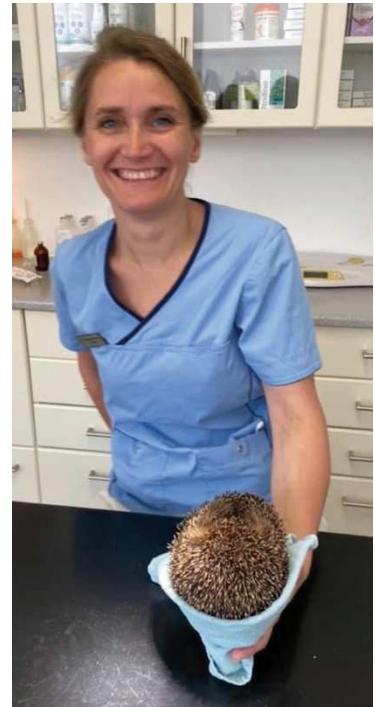
Rikke Hansen, Veteriarian, DVetMed,

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Abstract

This lecture will give an overview of first handling by the caretaker and the following treatment at the veterinarian of abscesses and wounds with different causes. It will pinpoint both what to be careful of and the need for close teamwork between the veterinarian and the caretakers. There will be doses for some medications but please be aware that doses are constantly being altered, as new studies/research find their way. There are still no licensed drugs for wild hedgehogs and doses therefore are anecdotal.



The aim of this lecture is to provide an insight into the treatment of even severe wounds and to show, that even very deep and big wounds often will heal successfully given the right treatment. Finally, the need for multimodal analgesia during treatment of wounds and abscesses are essential, as this provides a better as well as a more speedy recovery.

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“Scratching the surface: A systematic review of hedgehog parasites”

Emily Harper,

PhD student, Nottingham Trent University
Wild Hogs Hedgehog Rescue Manager

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Authors: Emily Harper¹, Dawn Scott¹, Iain Barber² &
Richard Yarnell¹

¹ Nottingham Trent University, UK

² School of Life Sciences, Aberystwyth University, UK



Abstract

Hedgehogs admitted to rehabilitation centres are frequently treated for parasites.

However, the range of parasite species that can infect hedgehogs and the effects parasites have on individuals and populations have not been comprehensively studied.

A systematic review was carried out to identify the parasites infecting hedgehogs globally.

116 studies were retrieved, and 73 parasite species were identified from the studies. The

European hedgehog, *Erinaceus europaeus* was the subject of 47 studies, with far fewer studies of other species of hedgehog. Of the parasites infecting hedgehogs, *Crenosoma striatum* was the most widely reported. Prevalence of parasites in populations varied greatly between studies. Hedgehogs were found to carry zoonotic parasites

Cryptosporidium spp. (human variant), *Capillaria hepatica*, *Sarcoptes scabiei* as well as 10 tick-borne diseases. Studies found that parasite burden did not differ significantly by sex or body condition, but age was a factor. Hoglets were less likely to be parasitized, and in most cases, juveniles had fewer parasites and at lower intensity than adults. Behavioural changes were reported in three studies, hedgehogs were active in the day (2) and restless (1). Clinical symptoms were reported in thirteen studies, with skin conditions (6), gastrointestinal problems (5) and respiratory symptoms (2) described. The effects of parasites on individuals ranged from sub-clinical to fatal. Increased mortality in hedgehog populations from parasites was reported in only three studies with 8% of deaths in a rehabilitation centre compared with 11- 25% of deaths attributed to parasites and starvation found in wild hedgehogs. Hedgehogs naturally carry a range of parasites and some of these can cause clinical symptoms and lead to increased mortality. However, more research is required to consider the impact on populations. Those working directly with hedgehogs should consider the zoonotic risks from parasites and vector-borne diseases.

Notes

“Hedgehogs and genes on the islands”

Dr Barbora Černá Bolfíková,

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Czech University of Life Sciences,
Prague, Czech Republic

bolfikova@ftz.czu.cz

<https://www.researchgate.net/profile/Barbora-Cerna-Bolfikova>



Abstract

This talk will focus on the role of habitat fragmentation on gene flow and viability of the populations because the islands are not necessarily only in the sea. From the genetic perspective, isolated populations with limited or absent gene flow are perceived as islands as well. Gene pools of the small isolated populations are affected by increased inbreeding and by genetic drift. The rural populations of hedgehogs are generally considered as declining and the decline is mainly attributed to the intensification of agriculture. Urban areas therefore often play a role as a refuge, however, populations might be highly fragmented due to heavy traffic, high building density etc. The human-mediated translocations can significantly impact connectivity of the populations, however, it is also affecting dynamics of the already established populations. Case studies from Central Europe illustrate that intensive sheltering tends to homogenize the gene pool and when multiple species coexist in an area, the risk of hybridization increases.

Notes

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“People’s Perceptions: Unveiling Threats and Conservation Strategies for the Endemic Madras Hedgehog (*Paraechinus nudiventris*) in Tamil Nadu, India”

Dr Brawin Kumar, hedgehog researcher,
Project coordinator for the Hedgehog
Conservation Project,
Act India Foundation, India
Hedgehog Conservation Alliance (HCA), India

brawinkumarwildlife@gmail.com



Authors: Brawin Kumar¹, Sophie Lund
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Abstract

In the tropical and developing regions of India, small mammals often receive inadequate attention, even though they play crucial ecological roles. Among these often-neglected species is the Madras hedgehog (*Paraechinus nudiventris*), which is endemic to the Southern states of India. Unfortunately, this hedgehog faces numerous threats, including hunting, habitat loss, and the perils of road mortality. To gain a better understanding of this species and its conservation needs, we conducted interviews in the southeastern region of Tamil Nadu, a presumed stronghold for the Madras hedgehog.

In our study, we interviewed a total of 955 participants from 66 villages, garnering valuable insights into the natural history, ecology, threats, and conservation of this hedgehog. Notably, we found that 72% of the respondents reported the consumption of hedgehogs, primarily for medicinal purposes, with a focus on treating conditions such as whooping cough. According to those interviewed, hedgehogs are primarily nocturnal creatures (67.8%) and are commonly spotted during the rainy season (63.9%).

Hunting emerged as a major threat to the hedgehog, identified by 33.3% of respondents, followed by habitat loss (12.7%), poor breeding (12.4%), and road kill (4.9%). Other potential threats include pollution, pesticide use, urbanization, and the effects of global warming. Significantly, over half of the respondents (56%) believed that the hedgehog had become rare or uncommon in the last decade.

While many interviewees were unaware of specific conservation actions, some did express views similar to our findings, suggesting measures like preventing hunting, reducing habitat loss and degradation, raising awareness about alternatives to traditional medicines, and improving the species' protection status. In conclusion, landscape-level surveys will be essential to assess the population and threats to *P. nudiventris* comprehensively and to reassess its conservation status.

Notes

“Robotic lawn mowers and European hedgehogs- the process of designing a hedgehog safety test to create more hedgehog friendly robotic lawn mowers”

Dr Sophie Lund Rasmussen (see page 12) &
Dr Aage Kristian Olsen Alstrup, Associate Professor,
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The publications are available here:



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Abstract

Substantial evidence, based on monitoring data from a range of European countries, indicates that the European hedgehog (*Erinaceus europaeus*) is declining. Research exploring causes for this decline, including anthropogenic sources, may be used to improve conservation initiatives to protect this species in the wild.

A concern has arisen that a growing number of hedgehogs are injured in residential gardens by robotic lawn mowers. This is a cause for concern, as the global market for robotic lawn mowers is expanding dramatically. Research indicates that European hedgehogs are increasingly associated with human habitation and are often seen foraging on grassy turf in the gardens and green spaces of urban areas. It seems likely that numerous individuals will encounter several robotic lawn mowers during their lifetimes. This presentation intends to describe our investigations of the effects of robotic lawn mowers on hedgehogs. Initially, we studied whether robotic lawn mowers were indeed harmful towards (dead) European hedgehogs. Secondly, we studied the personality and behaviour of hedgehogs during controlled encounters with robotic lawn mowers, allowing for the definition of a hedgehog safety test. Subsequently, we designed a hedgehog crash test dummy to be applied in safety tests with the purposes of quantifying and improving the design, and thereby safety, of the robotic lawn mowers for hedgehogs. The implementation of a standardised hedgehog safety test for robotic lawn mowers entering the European market will hopefully eventually introduce a labelling system guiding the consumers to purchase the hedgehog friendly models.

“Assessing the statuses of hedgehogs in Europe”

Dr Abigail Gazzard

Programme Officer,
IUCN SSC Small Mammal Specialist Group and
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<https://small-mammals.org>

The IUCN Red List of Threatened Species:

<https://www.iucnredlist.org>



Abstract

Hedgehogs have clearly undergone significant declines in the UK, but what about elsewhere across their range? And what do we know about other hedgehog species in Europe? In this talk, I will introduce the process of gathering information for IUCN Red List assessments of European hedgehogs, and discuss why evaluating their statuses is important. These assessments can be hindered by gaps in knowledge of hedgehog populations, their limits of distribution and threats. By pooling information from records websites, regional groups, researchers, rehabilitators and more, we can start to fill these gaps.

Notes

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. There are no margins, text, or other markings on the paper.

“Introducing the Uist Native Wildlife Project”

Vicky Grant, MSc in Environmental Assessment and Management,

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Outer Hebrides Island Manager, RSPB Scotland, UK

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Abstract

The Uist Native Wildlife Project is an ambitious multi-year project which will seek to live capture and translocate invasive non-native hedgehogs from Uist, in the Western Isles of Scotland, to the mainland where the hedgehog is native.

Uist (including North Uist, South Uist and Benbecula) supports some of the most important populations of nesting waders (dunlin, ringed plover, redshank, snipe, lapwing, and oystercatcher) in Europe; with dunlin and ringed plover nesting at among the highest densities recorded anywhere in the world.

Hedgehogs were introduced to Uist in 1974 and became well established across the islands. Since the mid-1980s, numbers of nesting waders were witnessed to have declined severely. Investigation of these declines in the 1990s, demonstrated that high levels of egg predation by introduced hedgehogs was the most important factor in the decline of some species of breeding waders. By 1996, hedgehog predation of wader nests had become a significant conservation issue for the Special Protection Areas on the islands and wader numbers were predicted to decline dramatically as a result. The continued presence of the introduced hedgehogs on Uist threatens the long-term stability of these important populations.

With hedgehogs facing their own conservation challenges within their native range, the traditional invasive species eradication methods are not acceptable in this case. The Uist Native Wildlife Project is therefore developing a ground-breaking approach where the conservation of waders, the welfare of hedgehogs and the potential benefits to mainland populations are all being addressed in what we hope will be a win-win project for both species.

Notes

We are grateful to the following sponsors of gifts for the conference delegate packs and raffle prizes:



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Please join our Facebook group “International Group for Scientists and Carers of the European Hedgehog”:



<https://www.facebook.com/groups/161362745159018>

Dear delegates.

Thank you for attending the conference!

If you have any questions or comments, please contact us:

info@hedgehogconference.com
www.hedgehogconference.com

Best wishes from the planning committee:

Dr Lucy Bearman-Brown & Dorthe Madsen, hedgehog rehabilitator, Dyrenes Beskyttelse & Dr Sophie Lund Rasmussen



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Thank you for attending the conference and see you next time!

Watch www.hedgehogconference.com and follow our Facebook group for information and updates.

