HEALTHY GARDENS FOR PEOPLE, PLANTS AND WILDLIFE

24 October 2019

ZSL SYMPOSIUM
Huxley Lecture Theatre, Zoological Society of London
Regents Park, London, NW1 4RY
This symposium will be hosted by the Garden Wildlife Health Project, and the Wildlife Gardening Forum

Garden Wildlife Health (GWH) is a collaborative project, between ZSL, the British Trust for Ornithology (BTO), Froglife, and the Royal Society for the Protection of Birds (RSPB). As a citizen science project, GWH appeals for reports of sick and dead wildlife from members of the public to conduct disease surveillance for amphibians, garden birds, hedgehogs and reptiles across Great Britain, alongside raising public awareness of disease threats and providing best practice mitigation advice.

The Wildlife Gardening Forum (WLGF) a charity with the aim to inspire and encourage everyone to garden with wildlife in mind. Its main priorities are to help gardeners and decision makers understand the significance of the garden resource for biodiversity, sustainable urban development and human health and wellbeing, and provide evidence-based advice to help people manage their gardens sympathetically for themselves and wildlife.

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One of the biggest threats facing wildlife on a global scale is the speed and extent of habitat loss, fragmentation and degradation. As urbanisation and agricultural intensification increase with human population growth, natural refuges for wildlife are not only decreasing in size and connectivity, they are also at a greater risk of damage through anthropogenic factors such as pollution and climate change. Consequently, there is a need to recognise domestic gardens as an important but often overlooked resource for many wildlife species. Furthermore, there are potential benefits to human health and well-being because domestic gardens provide an opportunity for people to connect with wildlife.

THE SYMPOSIUM

This one-day event will explore the benefits and potential risks that garden habitats can represent to plant, animal and human health, with speakers discussing best-practice for wildlife friendly gardening, and highlighting a One Health approach to maximise the advantages of these unique habitats. The symposium will draw upon and disseminate the research of the GWH project and the WLGF, and their collaborators. It will provide an excellent opportunity to engage with a varied audience of students, academics, members of the public with an interest in science-based recommendations for wildlife-friendly gardening, representatives of animal welfare and conservation NGOs, ZSL Fellows and policymakers. The goal is to share findings on optimising garden habitat management to safeguard the health of all parties, whilst identifying areas for future research and collaboration.
PROGRAMME: 24 OCTOBER 2019

09:30 REGISTRATION & INTRODUCTIONS
10:00 Welcome address by Ken Norris, Zoological Society of London
10:10 The importance of gardens for biodiversity and people
   Steve Head, Wildlife Gardening Forum

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12:50 PANEL DISCUSSION Q & A with speakers from Sessions 1 & 2

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SESSION 3: PLANTS & INVERTEBRATES
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14:20 Stemming the tide: the Royal Horticultural Society’s approach to plant health
Andrew Salisbury FRES, Royal Horticultural Society and Chair of the Trustees Wildlife Gardening Forum

14:40 Risks of plant poisoning to animal and human health
Nick Edwards, Veterinary Poisons Information Service

15:00 Conserving pollinators through gardening
Nicholas Tew, University of Bristol

15:20 BREAK

SESSION 4: GARDEN MANAGEMENT FOR HEALTH
Chair: Steve Head, Wildlife Gardening Forum

15:40 What should we plant for a thriving garden? The thorny question of natives or non-natives
Helen Bostock, Royal Horticultural Society

16:00 Just Add Water – the benefits of garden ponds for wildlife and wellbeing
Jenny Tse-Leon, Froglife

16:20 Healthy gardens – inspiring the masses
Adrian Thomas, Royal Society for the Protection of Birds and Wildlife Gardening Forum

16:40 PANEL DISCUSSION Q & A with speakers from Sessions 3 & 4

17:00 SUMMARY & CLOSING COMMENTS

17:05 DRINKS RECEPTION

18:30 END OF SYMPOSIUM
ABSTRACTS
24 October 2019

10:00  WELCOME ADDRESS BY KEN NORRIS, ZOOLOGICAL SOCIETY OF LONDON

10:10  THE IMPORTANCE OF GARDENS FOR BIODIVERSITY AND PEOPLE

Steve Head, Wildlife Gardening Forum
Email: steve@wlgf.org

We have come a long way since 1966, when no less an ecologist than Charles Elton described gardens as “biological deserts, or at any rate very unnatural surroundings”. The seminal work of Jennifer Owen, the Sheffield BUGS project and others, has shown that far from deserts, typical domestic gardens are hot-spots of biodiversity, more diverse than most classic habitats in Britain and Ireland, and in species per area terms, comparable with African rainforest.

There are many reasons why gardens are so biodiverse and, while individual gardens may be small, collectively they are a massive conservation resource. As privately owned and managed land, they are often neglected in considering urban greenspace, but they are a key element of the green infrastructure which we now recognise as vital for human health and wellbeing. Safe access to gardens and greenspace is also very valuable for education.

The urban environment is probably the only biodiverse habitat type which is expanding in developed countries. The biodiversity importance of gardens continues to grow as the impact of commercial land management increases, and will become crucial for climate change adaptation. However, the quality of the environment remains under threat from poorly conceived development, garden grabbing, ignorance on the part of decision makers, and a general prevalence of myths and assumptions.

SESSION 1: PEOPLE
Chair: Andrew Salisbury FRES, Royal Horticultural Society and Chair of the Trustees Wildlife Gardening Forum

10:30  BENEFITS OF NATURE ENGAGEMENT AND GARDENING TO HUMAN HEALTH AND WELLBEING

Becca Lovell, Exeter University Medical School
Email: r.louvell@exeter.ac.uk

Gardens, which represent about 30% of urban land cover in the UK, are an important health and wellbeing resource. We now have a relatively robust and extensive evidence base which indicates that living in greener environments has a positive influence on mortality rates, certain types of morbidity, mental health, quality of life, and is associated with less stark inequalities in health. The benefits come about through direct and ‘active’ pathways such as promoting positive mental health states, providing a context for physical activity and recreation, and allowing people to experience nature. The evidence also suggests that gardens and other forms of good quality green infrastructure influence health and wellbeing through indirect pathways such as contributing to healthy micro-biomes and better nutrition, and through the mitigation of health risks such as heat island effects, noise pollution, flooding, and poor air quality. We also have tentative evidence that greener living environments are associated with lower inequalities in health; higher levels of domestic garden coverage appears to mitigate health deprivation. Studies have shown that the act of gardening is associated with reduced rates of depression and anxiety, stress, mood disturbances and with lower body mass, and that people who take part in gardening report higher quality of life, sense of community, physical activity
levels, and cognitive function. All types of gardening, including therapeutic, community and allotment gardening, appear to be associated with higher levels of wellbeing. Importantly the benefits of gardens are multiple, benefiting those actively gardening, the local community, and wider ecosystem services. Gardens are an important component of good living environments and should be considered and promoted as a key health resource.

10:50 THE SCIENTIFIC AND SOCIETAL BENEFITS OF CITIZEN SCIENCE – DOES WATCHING WILDLIFE MAKE A DIFFERENCE?
Debbie Lee, British Trust for Ornithology
Email: debbie.lee@bto.org

Thousands of volunteers take part in wildlife recording schemes. Do their efforts make a difference - or are they just wasting their time? Does recording the robin that visits your garden most days really help in any way at all? Well, it just might, in more ways than one. It’s possible that as well as participants making a direct contribution to research, these schemes are opportunities for personally transformative experiences that could be of benefit to wider society.

A growing body of evidence suggests that personal experiences and connections with nature provide powerful benefits for individual and societal health; that they could improve a person’s sense of wellbeing and increase civic action in support of conservation.

That may sound a tall order and responsibility for a simple act of recording what you see or hear, so what makes any particular citizen science worthwhile? The design and authenticity of the scheme are key to the value of the recording and the overall efficacy of the scheme itself. Get it right and citizen science could not only give insights to the drivers of change and inform the management of nature but, perhaps just as importantly, be a way to cultivate a love of nature and scientific understanding within society. In short, it could empower people and provide a wonderful source of hope in an age of extinction.

11:10 RISKS OF GARDEN WILDLIFE DISEASE TO PUBLIC AND DOMESTIC ANIMAL HEALTH IN GREAT BRITAIN
Becki Lawson, Zoological Society of London
Email: becki.lawson@ioz.ac.uk

A zoonosis is an infection that can spread from animals to people and may be caused by viruses, bacteria, parasites or fungi. Although less frequently reported, infections can also pass in the opposite direction, from humans to other animals, and these are known as anthroponoses. Some diseases that affect wild animals can also cause ill health in domestic animals. The Garden Wildlife Health project adopts a One Health approach, collaborating with medical and veterinary authorities, using the information gained from wildlife disease surveillance to help inform potential risks to public and domestic animal health.

For example, working together with Public Health England, our long-term datasets combined with a variety of bacterial typing methods, have provided evidence to support the hypothesis that garden birds and hedgehogs can act as sources of specific types of *Salmonella* Typhimurium and *S. Enteritidis* infection, respectively, to humans. However, the risk of these infections should be kept in context since these passerine and hedgehog-associated strains represent only 0.2% and 0.6%, respectively, of human *Salmonella* infections in England and Wales in recent years.

We have a library of disease factsheets focusing on conditions that have been diagnosed in British wildlife, including potentially important emerging threats to wildlife welfare and conservation, available online (www.gardenwildlifehealth.org). Whilst these focus on wildlife health, we also provide information on risks to human and domestic animal health, with potential symptoms and
signs to be aware of, and recommend that people seek medical advice or contact their veterinary surgeon if they or their animals are unwell or in case of any further questions.

We recommend sensible hygiene precautions as a routine to help to reduce the risk of exposure and to safeguard public health, such as avoiding direct contact with wild animal faeces or carcasses (e.g. by using gloves or an inverted plastic bag to handle them); washing hands after feeding wildlife; and cleaning wild bird feeders outside while wearing rubber gloves.

11:30  BREAK

SESSION 2: VERTEBRATE WILDLIFE
Chair: Katharina Seilern-Moy, Zoological Society of London

11:50  NON-NATIVE SPECIES AND PATHOGEN INTRODUCTIONS: RISKY TIMES FOR GARDEN AMPHIBIANS
Jim Foster, Amphibian and Reptile Conservation Trust
Email: jim.foster@arc-trust.org

Whilst habitats for amphibians in the wider countryside are often degraded, garden ponds and associated terrestrial habitat can provide important refuges for some of Britain’s frog, toad and newt species. By their very nature, garden habitats also help engagement with nature. However, in recent decades there has been increasing concern over the potential impacts of introduced non-native species and pathogens on amphibians. Gardens represent both a possible source of such introductions, and a habitat which supports populations likely to be impacted. In common with other wealthy nations, Britain has seen an increase in the rate of non-native amphibian introductions, as well as other alien taxa. The growth in animals entering the wild via the pet trade is of particular concern. Pets can appear in the wild through deliberate or accidental releases. Britain now has many populations of alpine newts, *Ichthyosaura alpestris*, resulting from intentional releases into garden ponds, for instance. The release of non-native plants is also of particular concern for amphibians and other freshwater wildlife. These introductions can affect garden amphibians through competition, predation and disease transmission. Although many releases end with the population dying out, the long-term outcomes are difficult to predict, and of course the impacts may extend beyond the original introduction point in a garden. The introduction pathways for pathogens are perhaps less well understood but the most likely source is via release of infected non-native amphibians or fish. There is particular concern about fungal and viral diseases. Ranavirus infection has been shown to result in long-term declines in common frogs in British garden ponds. Given the scale of the potential impacts from non-native species and pathogens, we should aim to prevent further introductions through better awareness, policy and practice.

12:10  HEALTH HAZARDS TO WILD BIRDS ASSOCIATED WITH SUPPLEMENTARY FEEDING
Kate Risely, British Trust for Ornithology
Email: kate.risely@bto.org

In 2018 we published a major review of the health risks posed to birds by garden feeding, in a collaborative study by the Zoological Society of London (ZSL), the British Trust for Ornithology (BTO) and Fera Science Ltd. We analysed more than 25 years’ worth of data on the occurrence of wild bird health threats, including protozoal, viral and bacterial diseases. Much of this work was based on observations contributed by members of the public, highlighting the ongoing importance of these surveys in helping scientists track the evolving health threats facing garden wildlife.
In my talk I will review our findings and discuss the benefits of providing additional food resources to birds in our gardens, and how we can weigh these up against the risks of disease transmission. I’ll explain how three common diseases – finch trichomonosis, Paridae pox and passerine salmonellosis – have changed both dramatically and unpredictably over the past decade, both in terms of the species they affect and their patterns of occurrence. I will also cover our evidence-based recommendations on how to feed garden birds safely and reduce the risks of disease transmission, as well as the value of reporting sightings of diseased birds and animals to the Garden Wildlife Health project and how to do this.

12:30 CURRENT EVIDENCE FOR THE IMPACT OF DOMESTIC CAT PREDATION ON WILD BIRDS AND HERPETOFAUNA IN GREAT BRITAIN
Laurence Jarvis, Froglife
Email: laurence.jarvis@froglife.org

Road traffic has severe impacts on wildlife species, including amphibians and reptiles. Consequently, there are increasing efforts to establish sites where road mitigation measures are installed to reduce direct mortality and re-establish connectivity between habitats. However, while the beneficial impacts of connectivity are well recognised, there is little information on the potentially negative consequences of enhancing connectivity in densely human populated areas. Free-ranging domestic cats (*Felis catus*) are a major threat to wildlife, including amphibians and reptiles. Free-ranging cats might greatly benefit from road mitigation measures such as tunnels, which offer safe and simple access towards nature reserves. We monitored several sites in the UK and Europe during 1-4 years using a combination of trail cameras and customised time-lapse cameras to investigate cat usage. Cats were abundant and frequent users of both large and small tunnels and their activity patterns suggested substantial potential for impacts on wildlife. Cat abundance on a large nature reserve in England was strongly linked with both the distance to the nearest house and the distance to the road mitigation tunnels. Our results indicate that in suburban settings, road mitigation measures facilitate cat access onto a variety of sites of high wildlife importance and could contribute substantial mortality to local wildlife species.

Sarah Binnie¹, Essex Wildlife Trust and Kate Plummer², British Trust for Ornithology
Email: ¹sarahbinnie@hotmail.co.uk; ²kate.plummer@bto.org

Domestic cats are major predators of wild birds with the potential to cause significant population declines. As well as causing direct mortality, cats could also have detrimental sublethal effects on their prey, if these birds alter their behaviour (particularly foraging decisions and habitat use) to avoid possible predation. Understanding the relationship between domestic cats and bird populations could greatly improve our ability to manage the risk cats pose to bird populations, however quantitative evidence of these relationships is currently lacking. Using national-scale data from the British Trust for Ornithology’s Garden BirdWatch (GBW), we will present new research investigating whether domestic cats negatively impact garden use by wild birds and further discuss the potential implications of the findings.

12:50 PANEL DISCUSSION Q & A with speakers from Sessions 1 & 2

13:10 LUNCH IN PRINCE ALBERT SUITE & OPTIONAL VISIT TO ZSL WILDLIFE GARDEN
SEE MAP ON PAGE 18 FOR DIRECTIONS
14:20 STEMMING THE TIDE: THE ROYAL HORTICULTURAL SOCIETY’S APPROACH TO PLANT HEALTH
Andrew Salisbury FRES, Royal Horticultural Society and Chair of the Trustees Wildlife Gardening Forum
Email: andrewsalisbury@rhs.org.uk

New species are arriving in the UK at an increasing rate; a few become established and some cause problems in gardens and other garden-like plantings. These ‘pests and diseases’ can have serious effects on the horticultural industry and native diversity. They can broadly be divided into: long established problems such as the lily beetle (Lilioceris lilii); more recently introduced species such as the oak processionary moth (Thaumetopoea processionea); and potential new threats such as Asian longhorn (Anoplophora glabripennis) or the froghopper vectored Xylella fastidiosa bacterial plant disease. Such pests and diseases have the potential to severely impact the appearance and operation of gardens. The Royal Horticultural Society (RHS) is often the first to see the effects of new problems and takes a leading role in developing advice for gardeners. The Society is also implementing new policies for its gardens, shows and retail activities that go beyond current statutory controls, to reduce the chance of new problems arriving and mitigate the effect of those already established. The presentation will outline these issues and discuss the approach to plant health being developed by the RHS.

14:40 RISKS OF PLANT POISONING TO ANIMAL AND HUMAN HEALTH
Nick Edwards1, Veterinary Poisons Information Service and Elizabeth Dauncey, Botanical Researcher and Author
Email: 1nick.edwards@vpisglobal.com

Many plants contain compounds that have profound physiological effects. Some of these have been put to good use, with much of the western pharmacopeia (the medicines we use) at one time being derived from plants – deadly nightshade, foxglove, poppy to name a few obvious candidates. But it was the Swiss polymath Paracelsus who said (to paraphrase) “Everything is poisonous, it’s only the dose that makes the difference”, and this is true for plants, including some that grow in gardens, houses and the countryside. Toxicology is all about risk management – of the things lurking in your garden, which could be of concern for you, your child or dog? In addition to the plants you intended to be in your garden, there are wild species that will make use of the space and shouldn’t be overlooked.

The good news is that the number of people that are seriously ‘poisoned’ each year is small. The number that are adversely affected, however, will be larger – especially as you must include reactions following accidental skin contact. The number of companion animals that suffer harm is larger still. Dogs figure disproportionately in this group; dogs’ feeding behaviour and lack of discrimination adds to their particular risk. Cats, chickens, rabbits, guinea pigs, goats and other garden companions are not immune from harm. Finally, if potential dangers are identified – what could you do to mitigate and what should you do after something has happened?

15:00 CONSERVING POLLINATORS THROUGH GARDENING
Nicholas Tew, University of Bristol
Email: nicholas.tew@bristol.ac.uk

Covering six times the area of National Nature Reserves in England, domestic gardens represent a major opportunity for conserving wildlife. However, gardens are an anthropogenic land use
comprising many small fragments of managed greenspace and are often dominated by non-native plants. Whilst these habitats may not suit many of our animal species, insect pollinators show a remarkable tolerance towards and even preference for them. In fact, domestic gardens might represent flower-rich oases for bees, hoverflies and other insects within landscapes dominated by intensive agriculture. Thus, gardeners have a fantastic opportunity to directly contribute towards pollinator conservation by managing their land with insects in mind.

Research from my PhD shows that per unit area gardens and allotments provide the most abundant and diverse supply of food for pollinators in urban areas. However, at the scale of a whole city, gardens are by far the most important habitats for foraging insects. By measuring the food availability for pollinators in gardens we can gain a deeper understanding as to why these habitats are so important and how they can be improved. Individual gardens vary enormously in how they are managed and so there is huge scope for improving the prospects for our declining pollinators if we consider their foraging needs.

15:20  BREAK

SESSION 4: GARDEN MANAGEMENT FOR HEALTH
Chair: Steve Head, Wildlife Gardening Forum

15:40  WHAT SHOULD WE PLANT FOR A THRIVING GARDEN? THE THORNY QUESTION OF NATIVES OR NON-NATIVES
Helen Bostock, Royal Horticultural Society
Email: helenbostock@rhs.org.uk

We’re only just beginning to understand the power plants can bring to the function of a healthy garden ecosystem. Certainly, gardeners and garden designers have always asked what is the ‘perfect’ combination of plants for their plots? Maybe only 10 or 20 years ago this would have meant the longest flowering, the most disease-resistant or simply the best looking. But with an awakening consciousness of the role our gardens play in supporting a vast array of living organisms against the backdrop of worldwide species declines, the gardening community now want the answers to a more pressing question, ‘What can I plant to best support wildlife’? Using the very latest findings from the unique ‘Plants for Bugs’ experiment (an RHS study inspired by the Wildlife Gardening Forum investigating whether the geographical origin of garden plants affects the abundance and diversity of invertebrates they support), Helen Bostock explores the myths and truths around planting native and non-native plants. Are British native plants always the right option? Are there planting decisions we can take depending on what we most want to attract or the degree of nibbled leaves we’re prepared to tolerate? In an experiment that collected nearly 80,000 specimens and identified over 300 species, the answers were never going to be simplistic, raising many new questions in the process. But for perhaps the very first time our advice on planting natives or non-natives for wildlife can be backed up by scientific evidence and gives gardeners the information needed to plant with confidence.

16:00  JUST ADD WATER – THE BENEFITS OF GARDEN PONDS FOR WILDLIFE AND WELLBEING
Jenny Tse-Leon, Froglife
Email: jenny.tse-leon@froglife.org

Froglife is a UK amphibian and reptile conservation charity which aims to encourage people from all walks of life to take part in nature conservation activities. ‘Just Add Water’ is a national campaign to encourage the public to dig wildlife ponds, especially in urban environments. In some areas this can counteract the enormous loss of countryside ponds in recent years, and help local frogs, newts and
other wildlife flourish. One third of ponds are thought to have disappeared in the last 50 years or so and of those that remain more than 80% are thought to be in ‘poor’ or ‘very poor’ condition. This has had an enormous impact on wildlife, particularly amphibians. However, individual’s efforts locally can make a big difference. This talk explores the benefits of creating garden ponds for wildlife and wellbeing and how everyone can achieve this despite common worries about lack of knowledge, space and health and safety.

16:20  HEALTHY GARDENS – INSPIRING THE MASSES
Adrian Thomas, Royal Society for the Protection of Birds and Wildlife Gardening Forum
Email: adrian.thomas@rspb.org.uk

Gardens and (wildlife-friendly) gardening are increasingly being recognised for their benefits to human health and wildlife conservation, and so it would seem an obvious aim that as many people as possible are encouraged and empowered to participate. So what are the best strategies for achieving mass participation, and what are the barriers? What motivates people to take part? Or are as many people as can be expected already doing their bit?

Experience and insight from a range of projects such as the RSPB’s ‘Giving Nature a Home’ and ‘Homes for Wildlife’ initiatives, together with examples from France and the USA, suggest that the barriers to participation are a powerful combination of: lack of connection with wildlife; lack of connection with growing things; lack of time/competition from other interests; lack of money; lack of garden space; restrictive health issues; competing cultural norms for gardens; lack of confidence; and perceived or real issues of the difficulty level of the activities suggested. There are then further added issues for schools seeking to participate in such activities such as health and safety.

Addressing these barriers is not easy, and requires an understanding of the basis of ‘connection’. It also requires a movement-building approach that seeks to shift cultural norms and empowers people to take action over the long-term, rather than a time-limited project approach. People also need to be able to easily select from a ‘menu’ appropriate to their situation, and the rewards and successes of an activity must be readily seen.

Ultimately, in a crowded marketplace, it may be that a brand-generous approach is needed that draws together as many of the players as possible in a concerted, collaborative and coordinated programme.

16:40  PANEL DISCUSSION Q & A with speakers from Sessions 3 & 4

17:00  SUMMARY & CLOSING COMMENTS

17:05  DRINKS RECEPTION IN THE HUXLEY FOYER & BARTLETT ROOM

18:30  END OF SYMPOSIUM
SARAH BINNIE
ESSEX WILDLIFE TRUST

Whilst studying her MSc in Applied Ecology at the University of Exeter 2017-2018, Sarah investigated the impact of domestic cats on the use of gardens by wild birds, using data from the British Trust for Ornithology (BTO) Garden BirdWatch (GBW). This was supervised by Dr Kate Plummer, Research Ecologist at the BTO, whose principal role is to conduct research into wildlife responses to environmental change, and in collaboration with Kate Risely, who leads the BTO's Garden Ecology team as GBW Organiser. Sarah currently works in the Biological Records Centre at Essex Wildlife Trust, managing county-wide datasets and recording activities as well as assisting the Landscape Conservation team.

HELEN BOSTOCK
ROYAL HORTICULTURAL SOCIETY

Helen Bostock, RHS Senior Horticultural Advisor, trained in horticulture at Askham Bryan College, Yorkshire, before joining the Royal Horticultural Society in 1998. As well as her role as advisor, Helen is manager of the RHS ‘Plants for Bugs’ project, a long-term study into the value of native and non-native garden planting for invertebrates. The first paper was published in August 2015 in the Journal of Applied Ecology. She works closely with The Wildlife Trusts on their joint campaign, Wild About Gardens and assists in developing the RHS Plants for Pollinator plant lists. She has also been a trustee of the Wildlife Gardening Forum.

NICK EDWARDS
VETERINARY POISONS INFORMATION SERVICE

Nick is an experienced toxicologist in both human and veterinary fields, and a fellow of the European Association of Poison Centres and Clinical Toxicologists (EAPCCT). Nick has nearly 40 years of experience in toxicology and giving advice on poisoning cases. Originally, Nick was a botanist (Manchester University), and retains an interest in botany and agriculture.

JIM FOSTER
AMPHIBIAN AND REPTILE CONSERVATION TRUST

Jim is Conservation Director at Amphibian and Reptile Conservation (ARC) Trust, where he works on biodiversity policy and species recovery. Jim has worked with colleagues on species ranging from the pool frog, Britain’s rarest amphibian, to the common frog, our most widespread. Currently Jim is exploring how best to counter threats to amphibians arising from disease and non-native species. He is also developing projects to restore degraded habitats, and examining how projects can best deliver for a range of species. Before working at ARC, Jim was national amphibian and reptile specialist at Natural England.

STEVE HEAD
WILDLIFE GARDENING FORUM

Dr Steve Head’s Cambridge PhD was on the ecology of corals in the Red Sea. He then taught invertebrate zoology, ecology and marine science, at Oxford University, and in Jamaica and Oman. Following this, he ran two large practical conservation NGOs in the UK, and was a founder board member of the Wildlife Gardening Forum (www.wlgf.org), and later as Coordinator brought it to Charity status specialising in the science and evidence base for garden biodiversity. Steve is very chuffed to have led a team that won Gold and Best in Show for a garden at Chelsea Flower Show in 2010.
LAURENCE JARVIS  
FROGLIFE
Laurence has a long-standing interest in the ecology and conservation of amphibians and completed a PhD on the microhabitat preferences of the great crested newt (*Triturus cristatus*) in 2012. Laurence has since collaborated with the Amphibian Specialist Group (ASG) re-assessing the status of priority amphibian species in Peru and Brazil. Prior to joining Froglife Laurence worked in environmental ecotoxicology with a particular interest in the impacts of pesticides on amphibian populations. Laurence is currently Science and Research Manager at Froglife and manages a range of amphibian and reptile projects including ‘Toads on Roads’, tunnels mitigation and conservation on the Hampton Reserve, Peterborough.

BECKI LAWSON  
ZOOLOGICAL SOCIETY OF LONDON
Becki is a Senior Research Fellow based at the Zoological Society of London since 2005. Her research investigates the epidemiology and impact of disease in free-living wildlife populations, and its potential implications for public and captive animal health. Becki oversees the Garden Wildlife Health project (www.gardenwildlifehealth.org) which ZSL co-ordinates in collaboration with the British Trust for Ornithology, Froglife and the Royal Society for the Protection of Birds. She also co-supervises a European College of Zoological Medicine residency training programme in Wildlife Population Health in collaboration with the Royal Veterinary College.

DEBBIE LEE  
BRITISH TRUST FOR ORNITHOLOGY
Deb is Head of Engagement for the British Trust for Ornithology (BTO), working with the charity since 2014. She ensures BTO’s constituency is stewarded to the highest standards while also reaching out to new audiences. Deb passionately believes the connection BTO provides through watching and studying birds benefits both people and wildlife. An important aspect of her role is working with her team to ensure BTO’s membership and Garden BirdWatch schemes are accessible and relevant to society as a whole. Since starting at BTO, Deb has trained as a nest recorder and loves it!

BECCA LOVELL  
EXETER UNIVERSITY MEDICAL SCHOOL
Becca is a Lecturer in Biodiversity and Health Policy, her research focuses on synthesising and translating evidence of the links between nature and health for policy and practice and has undertaken work with and for the WHO, CBD, PHE, and Defra. Becca is currently working on how a better understanding of the social and health values of natural environments could inform Green Infrastructure decision making, the valuation of urban greenspaces, and is contributing to multiple studies on green health interventions funded by NIHR, MRC and Defra. Becca is a member of several key strategy groups including the Royal Horticultural Society’s Science Committee and the Health and Horticulture Advisory Committee.

KATE RISELY  
BRITISH TRUST FOR ORNITHOLOGY
Kate runs the British Trust for Ornithology’s Garden BirdWatch, a ‘citizen science’ project through which volunteers record birds and other taxa using their gardens on a weekly, year-round basis, as well as additional garden-based surveys. Kate is interested in the research and conservation applications of garden wildlife sightings, and has been involved with the Garden Wildlife Health project since 2014.
ANDREW SALISBURY (FRES)
ROYAL HORTICULTURAL SOCIETY AND CHAIR OF THE TRUSTEES, WILDLIFE GARDENING FORUM
Andrew joined the Royal Horticultural Society (RHS) in 1998 and became the Principal Entomologist in 2014. He has had a lifelong interest in insects, particularly beetles. Andrew has an Entomology Degree, an MSc in Applied Entomology and completed a PhD in 2008 on the Lily Beetle. As part of a team of entomologists and plant pathologists, Andrew provides advice and research for the RHS on Plant Health and Garden Wildlife. Recent work included the ‘Plants for Bugs’ project, investigating which plantings are best for garden wildlife.

KATHARINA SEILERN-MOY
ZOOLOGICAL SOCIETY OF LONDON
Katharina graduated from the Veterinary University Vienna in 2011, specialising in Conservation Medicine and completing several internships in Africa and Europe. She pursued her PhD on “Pathogenic Characteristics of Elephant Endotheliotropic Herpesvirus Infection in Asian Elephants” at the University of Surrey and the Animal and Plant Health Agency (APHA) in the UK. Since September 2016, Katharina is working as a wildlife veterinarian/research associate and project coordinator for the Garden Wildlife Health project at the Institute of Zoology, ZSL London Zoo, which is a citizen science project aiming to monitor the health of, and identify disease threats to, British wildlife.

NICHOLAS TEW
UNIVERSITY OF BRISTOL
Nicholas Tew is a PhD student based in the community ecology group at the University of Bristol. His current research focuses on the conservation of insect pollinators in towns and cities, which he aims to enhance by understanding the food availability in these novel environments. Previously, he has worked on bumblebee foraging behaviour as part of his master’s at Imperial College and web building in spiders at the University of Oxford during his undergraduate degree. In his spare time, he is a keen gardener and proud owner of a wildlife-friendly allotment.

ADRIAN THOMAS
ROYAL SOCIETY FOR THE PROTECTION OF BIRDS AND WILDLIFE GARDENING FORUM
Adrian Thomas is the Royal Society for the Protection of Birds’ (RSPB) wildlife gardening expert, having championed the subject for almost 20 years. He wrote the RSPB Gardening for Wildlife and RSPB Guide to Birdsong books, and writes regularly in Garden Answers and other publications. His day-job with the RSPB includes varied projects such as working with Barratt Homes to set a new standard for wildlife-friendly housing, leading the campaign to stop new housing destroying the nation’s best site for Nightingales, and making the RSPB’s ‘Let Nature Sing’ pop single! He is Trustee of the Wildlife Gardening Forum, and - most importantly - is a passionate and hands-on gardener.

JENNY TSE-LEON
FROGLIFE
Jenny is the Education & Strategy Manager for Froglife alongside her honorary lectureship at The University of Brighton. Her expertise is in engaging people, especially those from disadvantaged backgrounds, with nature conservation. Jenny has an MSc in Conservation Science from Imperial College and has worked in community development, engaging local communities with nature as a means to improving health, well-being and community cohesion. Froglife is a national wildlife conservation charity concerned with the conservation of the UK’s amphibian and reptile species and their associated habitats. Froglife’s holistic approach to nature conservation enables them to take individuals on a wildlife journey, whilst also delivering amazing results for UK amphibian and reptile species.
ROUTE TO WILDLIFE GARDEN TO MEET ZSL HORTICULTURAL TEAM DURING LUNCH HOUR

ENTRANCE TO HUXLEY THEATRE FROM OUTER CIRCLE

LUNCH IN PRINCE ALBERT SUITE (THROUGH TUNNEL)

SUGGESTED ROUTE
To walk between ZSL London Zoo and Camden Town underground station takes around ten minutes.

**Travel Information**

*Transport for London Travel information*
Telephone: 0843 222 1234 (24 hours a day); Textphone: 020 7918 3015

**BUS 274 to Camden Town and Baker Street**
[www.citimapper.com](http://www.citimapper.com)

**Taxi numbers**
Taxi One-Number bookings: 0871 871 8710
Call-A-Cab: 020 8901 4444
Computer Cab: 020 7908 0207
DataCab: 020 7432 1540
Dial-A-Cab: 020 7253 5000
Radio Taxis: 020 7272 0272
Addison Lee: 020 7387 8888

THANK YOU FOR ATTENDING