

## The GB Wildlife Disease Surveillance Partnership

The GB Wildlife Surveillance Partnership, which includes the Veterinary Laboratories Agency (VLA), Scottish Agricultural College (SAC), Institute of Zoology (IoZ), the Food and Environment Research Agency (FERA), the Centre for Environment, Fisheries and Aquaculture Science (Cefas), the Wildfowl and Wetlands Trust (WWT) and Natural England (NE), produces the GB Wildlife Disease Surveillance Partnership quarterly reports. Introductions to the partners are given below.

### The Veterinary Laboratories Agency Diseases of Wildlife Scheme (VLADoWS)

Since 1998 the collaborative VLADoW Scheme funded by Defra and devolved administrations has delivered national surveillance for wildlife disease in England and Wales, with strong links to a similar scheme in Scotland run by SAC. The VLADoW Scheme investigates disease in vertebrate terrestrial wild species and seals at Regional Laboratories in England and Wales



### 17 VLA Regional Laboratories and Surveillance Centres where wildlife are examined



VLADoWS incorporates both scanning and targeted surveillance components.

The triggers for scanning surveillance are unusual mortalities in any wild species. Specimens submitted under scanning surveillance are given post-mortem diagnostic examinations in UKAS accredited laboratories, and reports are sent to the submitter. Generally the examinations are undertaken at no charge to the submitter. Submitters may be members of the public, wildlife organisations and charities, other government agencies and wildlife hospitals.

The VLADoWS objectives in investigating diseases of wildlife are –

- to investigate new and emerging disease
- to provide surveillance for zoonotic disease
- to investigate diseases of wildlife that have conservation importance
- to provide surveillance for disease risks to livestock
- to provide surveillance for exotic infectious diseases such as West Nile fever
- to investigate diseases that may reflect pollution
- to investigate wildlife mass mortality incidents

VLADoWS also delivers-

- consultation to Defra and government on wildlife disease
- maintenance of expertise in wildlife disease
- collaboration with other organisations
- reports to government for example the annual OIE Report

Reference – *Microbiology Today* (2003) Vol 30,157-159. Nov 2003

Partners at the Institute of Zoology (IoZ), Zoological Society of London, manage the following wildlife disease surveillance projects:

### **Cetacean Strandings Investigation Programme (CSIP)**

The collaborative UK Cetacean Strandings Investigation Programme (CSIP) has been running since 1990 and is funded by Defra and the Devolved Administrations. It investigates all whales, dolphins and porpoises (collectively known as cetaceans), marine turtles and basking sharks that strand around the UK coastline. As well as documenting each individual stranding, a number are also retrieved for investigation at post mortem to allow a cause of death to be established. The data and samples collected during the course of these investigations have also facilitated a large number of international collaborations, helping to address a wide range of scientific questions. Further information on the CSIP can be found at [www.ukstrandings.org](http://www.ukstrandings.org), or can be requested from the project manager, Rob Deaville ([rob.deaville@ioz.ac.uk](mailto:rob.deaville@ioz.ac.uk), 020 74496672).



### **Garden Bird Health initiative (GBHi)**

The Garden Bird Health *initiative* (GBHi) was established as a working group of the Universities Federation for Animal Welfare (UFAW) in 2003. The GBHi set out to undertake a major garden bird health surveillance and research project, and to develop and publish guidelines on how to best feed garden birds in order to maximize the benefits for their welfare and conservation. Disease outbreaks occur quite commonly in garden birds and the research, started in March 2005, investigates their causes and prevention. The project involves collaboration with the Scottish Agricultural College, British Trust for Ornithology (BTO), RSPB, and UFAW, and, until recently, Liverpool University and the Wildlife Veterinary Investigation Centre, Cornwall. The project has been generously sponsored by a number of wild bird food companies, the Birdcare Standards Association, the British Veterinary Association Animal Welfare Foundation, the RCVS Trust, RSPB, BTO, UFAW and the John and Pamela Salter Trust. Further information is available on the project's website (<http://www.ufaw.org.uk/gbhi.php>), or can be requested by email ([ufaw@ufaw.org.uk](mailto:ufaw@ufaw.org.uk)), or from the project co-ordinator, Katie Colville (020 74496685).



### **Health Surveillance for the Species Recovery Programme (SRP)**

For the past 17 years, ZSL has carried out health surveillance for English Nature's Species Recovery Programme (SRP). Native species translocations (reintroductions and re-stocking) present disease and welfare risks for the animals being translocated and other native species. We undertake to minimize these risks through disease risk analysis prior to translocation, disease risk reduction if a translocation proceeds, and post-release health and welfare surveillance to monitor the effect of translocation on translocated and sympatric species at the reintroduction site. Projects have concerned the following species: the field cricket (*Gryllus campestris*), barberry carpet moth (*Pareulype berberata*), pool frog (*Rana lessonae*), sand lizard (*Lacerta agilis*), ciril bunting (*Emberiza cirilus*), corncrake (*Crex crex*), red kite (*Milvus milvus*), common dormouse (*Muscardinus avellanarius*), red barbed ant (*Formica rufibarbis*) and red squirrel (*Sciurus vulgaris*). We also carry out disease monitoring on populations of declining native species, for example the remnant red squirrel populations in the north of England. New projects for which disease risk analysis is currently being undertaken include the potential re-introduction of the Eurasian crane (*Grus grus*) and the British short-haired bumblebee (*Bombus subterraneus*). Enquiries should be addressed to Dr. Tony Sainsbury (020 7449 6668, [Tony.Sainsbury@ioz.ac.uk](mailto:Tony.Sainsbury@ioz.ac.uk)) or Dr. Rebecca Vaughan (020 7449 6488, [rebecca.vaughan@ioz.ac.uk](mailto:rebecca.vaughan@ioz.ac.uk)).

### **Amphibian Disease and Mortality Project**

This project, in conjunction with Froglife, deals with amphibian mortalities across the UK. Reports of amphibian mortality received at Froglife of unknown cause are forwarded to the Wildlife Epidemiology Group, IoZ. All amphibians that arrive at the IoZ undergo systematic post mortem examinations and samples are routinely taken for both ranavirus and *Batrachochytrium dendrobatidis* (chytrid fungus) screening. This project has examined the population genetic response of the common frog (*Rana temporaria*) to ranavirus emergence (work done by Dr. Amber Teacher, now at Royal Holloway, University of London). Current work examines the invasion dynamics and evolution of ranavirus in Great Britain (Stephen Price, QMUL and IoZ). Four PhD students (Jennifer Sears, Peter Minting, Rhys Farrer and Freya Smith) are currently investigating the epidemiology of Bd in the UK, including its introduction, impact and spread. Further work on both chytridiomycosis and ranavirus is planned. Further information on amphibian conservation and specimen and data submission is available at [http://www.froglife.org/disease/frog\\_mortality\\_project.htm](http://www.froglife.org/disease/frog_mortality_project.htm), or can be requested from Froglife (Wildlife Information Service 01733 558960 or [info@froglife.org](mailto:info@froglife.org)).

### **Hedgehog health**

The IoZ plans to establish a new disease surveillance project to investigate the health of wild hedgehogs in the UK, in partnership with the BTO and other organisations. Reports of dead and sick hedgehogs from across the UK are currently being received. Enquiries should be addressed to [hedgehog@zsl.org](mailto:hedgehog@zsl.org) or Katie Colvile (020 74496438).

### **Wildlife Health Surveillance in Scotland – the role of SAC Veterinary Services**

The England Wildlife Health Strategy was launched on June 15<sup>th</sup> 2009. Animal Health is a devolved issue and the England Wildlife Health Strategy does not directly apply to Scotland. However Great Britain can be regarded as a single epidemiological unit for many infectious and non-infectious diseases, and the Scottish Government supports a similar programme as part of its Public Good Veterinary and Advisory Services. Key areas of concern are diseases of wildlife that pose a threat to human health, livestock health, wildlife populations and biodiversity. All eight Disease Surveillance Centres of SAC VS contribute to wildlife surveillance, but most of the mammalian surveillance is conducted by the Wildlife Unit at SAC VS Inverness, and most avian surveillance is performed by SAC VS Ayr.

Both scanning and targeted surveillance is carried out by SAC VS as part of Scottish Government's Public Good Veterinary and Advisory Services to look for diseases of wild birds and wild mammals that could affect livestock, humans or wildlife populations. SAC VS has a database with the results of over 2400 wild bird necropsies carried out from 1994, and since April 2005 samples have been collected from over 1200 wild birds for avian influenza screening and from over 200 wild birds for West Nile virus screening.

Wildlife surveillance by SAC VS covers a wide range of mammalian and avian species, from cetaceans weighing over 70 tonnes to garden birds weighing less than 10g! The SAC VS Wildlife Unit in Inverness has managed the Scottish Marine Mammal stranding scheme since 1992. This project manages the Scottish operation of the UK Cetacean Strandings Investigation Programme (CSIP), in addition to supplementary work identified as important for Scotland (an increased number of cetacean postmortems and the extension of surveillance to seals, turtles and basking sharks). In collaboration with other research groups, the Wildlife Unit provides a co-ordinated investigation of marine mammal strandings in Scottish waters in order to: (i) assess the numbers and trends of stranded marine mammals and the potential causes of death, (ii) identify and determine the prevalence of disease and contaminants in marine mammals and (iii) improve knowledge of life history parameters in order to identify any substantial new threats to their conservation status. From 1992 to January 2009, 1365 postmortem examinations have been

carried out under this scheme. At the other end of the weight range, SAC VS is one of the founder members of the Garden Bird Health Initiative, set up in 2005 and collaborating with the Institute of Zoology, Liverpool University and others to investigate deaths in garden birds throughout Great Britain.

The results from the scanning and targeted surveillance are summarised for Scottish Government and for partners in the GB Wildlife Disease Surveillance Partnership. Where appropriate, results are disseminated to Health Protection Scotland, public and environmental health professionals, veterinary surgeons, non-governmental organisations, the popular press, and members of the public.

SAC VS is a partner in the Wildlife Incident Investigation Scheme (WIIS), set up to investigate incidents in which pesticide poisoning may be involved. Postmortem examinations are carried out on wild animals and birds (especially birds of prey), and if poisoning is suspected samples are sent to the Scottish Agricultural Science Agency for toxicological examination. Welfare incidents in wildlife are also investigated on behalf of statutory enforcement authorities and other organisations such as the SSPCA.

In addition to surveillance activities the Wildlife Unit at SAC VS Inverness is collaborating with the Sea Mammal Research Unit (SMRU) to devise monitoring systems to estimate contact networks in wildlife populations, and with SMRU and Moredun Research Institute on the development of a pan-morbillivirus PCR to detect phocine distemper virus (PDV) and cetacean distemper virus (CDV). Both these collaborations are focused on developing the surveillance tools necessary to detect, identify and monitor endemic and new and emerging diseases, ultimately with the aim of establishing risk pathways for the source and outcome of diseases reservoired and vectored by wildlife.

Tom Pennycott, SAC VS Ayr

Andrew Brownlow, Wildlife Unit SAC VS Inverness

### **Fera**

Fera's contribution to the GB wildlife disease surveillance scheme relates principally to wild carnivores. The Fera Wildlife and Emerging Diseases Programme team draws on expertise from veterinarians, ecologists, mathematical biologists and specialists in wildlife management. We have post-mortem and laboratory facilities at two of our sites, one near York and one in Gloucestershire. A carcass collection network for foxes (*Vulpes vulpes*) is already functional and it is the breadth of disciplines in our team that puts us in a position to set up other networks as required. We are also well-placed to interpret disease data, explore epidemiological trends and assess the ecological implications of disease, utilising the broad skill base we have in the team.

Alex Tomlinson, Fera Woodchester Park

### **Cefas**

Cefas is a non-executive agency of Defra undertaking a wide range of regulatory and research activities in the marine and freshwater environment. One of Cefas' responsibilities is the protection of aquatic animal health in England and Wales. The Fish Health Inspectorate (FHI) is one of our specialist units responsible for regulatory fish and shellfish health matters, working on behalf of Defra in England and the Welsh Assembly Government in Wales. The FHI is based at a laboratory in Weymouth which also undertakes a comprehensive programme of aquatic animal health research, which includes investigation of diseases affecting wild aquatic animal populations in the UK. The FHI's main objective is to prevent the introduction and spread of new, emerging and notifiable fish and shellfish disease in England and Wales. Researchers and fish health inspectors work closely together to investigate unexplained mortality in farmed and wild populations and emerging diseases.

### **Wildfowl & Wetlands Trust (WWT)**

WWT's wildlife health surveillance work within the UK focuses on health of wetland species. Previously, this work has included conducting the UK's live wild bird avian influenza (AI) surveillance, today focussing on a continued programme of dead wild bird AI surveillance. WWT conducts long-term surveillance of mainly waterbirds found dead across its UK network of wetland reserves and surrounding areas (which is one of the reasons for the organisation's particular interest in lead poisoning). Additionally, health surveillance forms an integrated part of WWT's broader conservation projects involving declining or threatened species (such as Bewick's Swans *Cygnus columbianus bewickii*, Greenland White-fronted Geese *Anser albifrons flavistrostris*, Water Voles *Arvicola terrestris* and Natterjack Toads *Epidalea calamita*), or species involved in reintroduction programmes such as the Great Crane Project (*Grus grus*). WWT also plays its part in ZSL's chytridiomycosis surveillance programme.

Enquires should be addressed to Ruth Cromie (ruth.cromie@wwt.org.uk 01453 891254)

### **The Forestry Commission**

This is the government department responsible for protecting and expanding England's forests and woodland and increasing their value to society and the environment.

Its important statutory and regulatory functions cover tree felling, plant health, environmental impact assessment, managing the Public Forest Estate, grant schemes and providing national and local expert advice.

There are also new or increasing areas of activity including biosecurity, the Big Tree Plant, leading the work of the Woodland Carbon Task Force, promoting sustainable alternative energy sources and engagement with Big Society. We work to ensure that woodlands can adapt to, and help mitigate, the impacts of a changing climate.

The Forestry Commission employs its own professional wildlife rangers to carry out its sustainable wildlife management for conservation and plant health.