GB Wildlife Disease Surveillance Partnership


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**Highlights**

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VIDA diagnoses are recorded on the APHA FarmFile database and SAC Consultancy: Veterinary Services LIMS database and comply with agreed diagnostic criteria against which regular validations and audits are undertaken.

The investigational expertise and comprehensive diagnostic laboratory facilities of both APHA and SAC C VS are widely acknowledged, and unusual disease problems tend to be referred to either. However recognised conditions where there is either no diagnostic test, or for which a clinical diagnosis offers sufficient specificity to negate the need for laboratory investigation, are unlikely to be represented. The report may therefore be biased in favour of unusual incidents or those diseases that require laboratory investigation for confirmation.

APHA VICs have UKAS Accreditation and comply with ISO 17025 standard. SAC C VS have UKAS accreditation at their central diagnostic laboratory and at the Aberdeen, Edinburgh, Perth, Ayr, Dumfries, Inverness, St Boswells and Thurso Disease Surveillance Centres which comply with ISO 17025 standard.
INTRODUCTION
The GB Wildlife Disease Surveillance Partnership comprising the Animal and Plant Health Agency (APHA), Scottish Agricultural College Consulting (SAC Consulting), Institute of Zoology (IoZ), the Centre for Environment, Fisheries and Aquaculture (CEFAS), the Wildfowl and Wetlands Trust (WWT), Natural England (NE), the Forestry Commission England (FCE) and the Garden Wildlife Health (GWH) project produces the GB Wildlife Disease Surveillance Partnership Quarterly Reports. :- https://www.gov.uk/government/publications/wildlife-disease-surveillance-reports-2016

OVERVIEW
Issues and trends
The H5N8 High Path Avian Influenza Virus (HPAIV) outbreak in the UK is of greatest concern at present having spread with migrating birds across Europe to Britain. HPAIV work has meant a necessary reduction in other wildlife work at APHA. H5N8 has been found in wild and farmed birds in the UK. A number of measures are in place to reduce the risk of disease spreading. There been so far (14/02/17) confirmed outbreaks on nine farmed premises as well as at several isolations in waterbirds across Britain. Public Health England advises that the risk to public health is very low and the Food Standards Agency has said there are no food safety risks for UK consumers.

NOTIFIABLE DISEASE

Avian Influenza Virus
SUMMARY: Notifiable disease; threat to UK farming and international trade, not recorded as a zoonosis

H5N8 High Path Avian Influenza Virus (HPAIV) hits GB waterbirds
The APHA Veterinary Investigation Centres (VICs) have been dealing with H5N8 in wild birds since the first isolation of this virus was made by Weybridge in mid-December 2016. Two projects at APHA deal with scanning surveillance in wild birds: these are the Diseases of Wildlife Scheme (DoWS) and the AIV in Wild Birds project. In addition to providing diagnostic examinations, these schemes also monitor the majority of wild birds submitted for AIV (since 2005) and (in season) West Nile Virus and Usutu Virus. From the period December 2016 to the third week in January 2017, provisional figures indicate that approximately 120 wild birds (mainly water birds) from over 60 submissions were examined by all VICs. From week 51; 2016 to week 3; 2017, 36 wild birds of 13 species (wigeon (Anas penelope), pochard (Aythia ferina), mallard (Anas platyrhynchos), teal (Anas crecca), tufted duck (Aythya fuligula), white fronted goose (Anser albifrons), Canada goose (Branta canadensis), greylag goose (Anser anser), mute swan (Cygnus olor), black headed gull (Chroicocephalus ridibundus), cormorant (Phalacrocorax carbo), peregrine falcon (Falco peregrinus) and common buzzard (Buteo buteo)) have tested positive for H5N8. These came from a wide distribution of locations throughout England and Wales. Pathology among those birds that tested positive has been variable. In a female teal in fair body condition, for example, the liver was enlarged with a haemorrhagic pattern, there was generalised mild jaundice, an increase in pericardial fluid and an enlarged spleen (see photo next page, courtesy Arthur Otter, APHA Shrewsbury VIC) while in other positive birds there has been no obvious gross pathology. Updates can be found on the Defra website and at https://www.gov.uk/government/publications/avian-influenza-in-wild-birds-winter-2016-to-2017
Paul Duff, APHA Wildlife Expert Group
Wildfowl and Wetlands Trust’s (WWT) role in GB Avian Influenza Wild Bird Surveillance (AIWBS): October – December 2016

SUMMARY: Threats - HPAIV, targeted active surveillance of wetland birds

This quarter began with typical wild bird avian influenza surveillance by conducting at least weekly patrolling of WWT’s eight, well established GB wetland reserves and ad hoc patrolling of the WWT-managed wetland, Steart Marshes in Somerset. As the threat of incursion of H5N8 HPAI increased the frequency of patrolling and vigilance for dead birds was substantially increased. In total, 75 dead birds of 19 species were found from nine reserves. Cloacal and buccal swabs were taken and submitted to APHA Weybridge for virological examination. See APHA report above for fuller details on GB HPAI-positive cases found which include wigeon (*Anas penelope*) from three WWT sites with additionally three goose species from one of these sites (white-fronted *Anser albifrons*, greylag *A. anser*, and Canada *Branta canadensis*).

WWT Slimbridge
ZOONOTIC DISEASES

APHA Diseases of Wildlife Scheme (DoWS); Salmonellosis in wildlife

SUMMARY - THREAT: Zoonotic disease, farmed and pet animal risk

October – December 2016

There is no routine monitoring of Salmonella spp in wild birds or wild mammals. Therefore all isolates are usually from clinical cases, although salmonella may often not be the primary cause of disease. Occasionally it is isolated from small-scale surveys.

Faecal samples were submitted from three post-weaned badger (Meles meles) cubs that had been scouring, losing weight and eventually dying in pre-release pens. One had a raised Capillaria spp. worm egg count and one had a raised Eimeria spp. count. However Salmonella Durham was isolated on direct culture from the former and also after enrichment from the third badger cub. S. Concord was isolated only after enrichment from the coccidiosis case. Eimeria spp. and Capillaria spp. have been reported in one West Country study as one of the most common gastro-intestinal parasites of badgers (Cottrell, 2011). S. Durham has been recorded by Defra (2015) ten times between 2012-2015, with four cases in sheep, three in cattle, two in chickens and one in turkeys. There were only two incidents of S. Concord in this period, one in cattle and one in chickens.

No salmonella species were isolated by APHA DoWS from wild birds this quarter. Also there were no reports of bird variant S. Typhimurium DT40, DT56 or DT56v from domestic species.

Quality statement regarding these data: - UK data and the output of ad-hoc data retrieval from APHA FarmFile database. These figures are provisional. Research project and game bird isolates were excluded. All are from England and Wales.

References


Alex Barlow, APHA Diseases of Wildlife Scheme

APHA Salmonella reports for 2016

Salmonella Typhimurium Copenhagen phage type 1 was isolated from tissues submitted from two goldfinches (Carduelis carduelis) after a number of goldfinches were reported to have been seen ill and dying around a garden bird feeder.

S. Typhimurium Copenhagen phage type 56 was isolated from a horse. It is suggested that host adapted salmonellae from garden birds may be a source of infection for domesticated species (Horton and others, 2013).

Salmonella septicaemia/enteritis due to S. Enteritidis phage type 11 was diagnosed as the cause of rapid death of a hedgehog (Erinaceus europaeus) hoglet submitted from a hedgehog rescue centre. Cleansing and disinfection advice was given regarding this zoonotic disease. Subsequent screening of other hedgehogs was carried out but no further cases of salmonellosis were identified. S. Enteritidis phage type 11 is common and widespread in hedgehogs in England (Keymer and others, 1991). Robinson & Routh (1999) suggest that S. Enteritidis phage type 11 appears to be endemic in hedgehogs.

Faecal samples were submitted from three post weaned badger (Meles meles) cubs. S. Durham was isolated on direct culture from one and also after enrichment from another. S. Concord was isolated only after enrichment from the third case.

There were no reports of S.Typhimurium Copenhagen DT40 or S. Typhimurium DT56 variant from wildlife or domestic species during the year.
References
Alex Barlow, APHA Diseases of Wildlife Scheme

Pathogen of suspected human origin in seal pups on the east coast of England
SUMMARY – Threat to wildlife and possible human health. Sewage probable risk pathway
A recently published paper reported the isolation of multi-antibiotic resistant Klebsiella pneumoniae subspecies pneumoniae (Kpp) of probable human origin, in lesions in three, free-living common seals (Phoca vitulina) found independently and in ill-health on the east coast of England. Two isolates were Kpp Sequence Type 11, which represents an epidemic clone found worldwide in man. Kpp is a common human nosocomial pathogen where the human gastro-intestinal tract is considered one of the main reservoirs of the organism. The probable risk pathway whereby Kpp infected the seals in the marine environment is by means of contaminated sewage.
Reference

Salmonellosis in passerines; Report by IoZ
SUMMARY including possible threats – Alert;
Public health and animal welfare concern
In Q4 2016, no cases of garden bird salmonellosis were diagnosed. In 2016, only two incidents of garden bird salmonellosis were diagnosed, one in England and one in Scotland, which is similar to the low number confirmed in recent years. Both incidents involved a siskin (Carduelis spinus) from which Salmonella Typhimurium DT 56(v) was isolated, as reported in Q1.
A paper was published on the genomic analysis of Salmonella enterica serovar Typhimurium from wild passerines in England and Wales: these isolates did not carry antimicrobial resistance genetic determinants or the S. Typhimurium virulence plasmid (Mather and other 2016). This study found that S. Typhimurium isolates (definitive phage type DT40 and DT56v) from passerines were genetically closely related to matched phage types from non-passerine hosts, including humans. This is consistent with the hypothesis that wild birds represent a potential reservoir of these salmonella subtypes and may pose a threat to public, companion animal and livestock health. Nevertheless, the risk of human infection is considered low and these garden bird-associated strains accounted for only 0.2% of salmonella infections diagnosed in people by Public Health England between 2000 and 2010 (Lawson and others 2014).
References
IoZ
Passive surveillance for lyssaviruses in UK bats
Thirty seven wild bats and two zoo bats were tested for Lyssaviruses at APHA in this quarter. All tested negative. No human biting or scratching incidents were recorded.

Rabies surveillance in terrestrial wildlife
One fox showing neurological signs was submitted for testing with negative results.

WNV surveillance in wild birds SV3045
Eighty nine wild bird tissue samples representing 18 species were tested for WNV during the period 1st October – 31st December 2016 all with negative results.

West Nile virus surveillance in Equids
One serum sample from a horse showing neurological signs was tested for WNV by cELISA with negative result.

Paul Phipps, Wildlife Zoonoses and Vector Borne Disease Research Group, APHA Weybridge

EBL, Rabies and WNV testing 1st January to 31st December 2016

Passive surveillance for lyssaviruses in UK bats
318 wild British bats were screened for European Bat Lyssavirus (EBL); all were negative apart from two. These were, one juvenile Daubenton’s bat (Myotis daubentoni) found dehydrated and undernourished in the daytime at Bolton Abbey, Yorkshire and died whilst attempts were made to revive it. No contact with humans, no biting or scratching was recorded. The second bat, also M. daubentoni, was found weak and distressed on a footpath at Haydon Bridge, Northumberland and also died whilst attempts were made to revive it. No human biting or scratching incident was recorded. 14 zoo bats were also screened for EBL, all with negative results.

Rabies surveillance in terrestrial wildlife
19 dogs were tested, 14 were deaths in quarantine, four were illegal landings and one was a suspect case. All were negative. There were four negative cats, of which two were deaths in quarantine and two suspect cases. A single fox (Vulpes vulpes) was also tested as it was showing neurological signs and this was negative.

WNV surveillance in wild birds SV3045
225 wild bird tissue samples were tested for WNV with negative results. Serum samples from two horses with neurological signs were also negative.

West Nile virus surveillance in Equids
One hundred and thirty three horses destined to travel to the Olympic Games in Rio were tested by cELISA for WNV, all with negative results.

Paul Phipps, Wildlife Zoonoses and Vector Borne Disease Research Group, APHA Weybridge

ONGOING NEW AND RE-EMERGING DISEASES, UNUSUAL DIAGNOSES AND HORIZON SCANNING

AVIAN REPORTS

Wild bird report from the IoZ

Finch trichomonosis
SUMMARY including possible threats – Alert;
Biodiversity threat to British populations of greenfinch with continued significant population decline, animal welfare, cause of considerable public concern
Finch trichomonosis is an emerging infectious disease first recognised in GB in 2005 which has resulted in epidemic mortality affecting the British greenfinch (Chloris chloris) population. The disease is caused by a clonal strain of the parasite Trichomonas gallinae and has led to a significant decline of the UK’s
greenfinch population (Lawson and others 2012), which is ongoing with a 60% reduction of the annual index values between 2006 and 2015 (Harris and others 2016). During Q4, trichomonosis was confirmed in nine of 19 wild bird post-mortem examinations conducted. Finches remain the species in which this disease is most often diagnosed, of which the majority were chaffinches (from 5 sites), greenfinches (from 2 sites) and goldfinches (from 2 sites).

In 2016, trichomonosis continued to be the most frequently diagnosed infectious disease in garden birds. Over 600 reports of sick or dead finches considered likely due to finch trichomonosis were received from over 360 sites with a widespread distribution across GB. Analysis of systematic surveillance data collected by citizen scientists, once available, is required to compare the scale of mortality in 2016 with previous years.

A paper was published on the detection of the European epidemic strain of *Trichomonas gallinae* in finches, but not other non-columbiformes, in the absence of macroscopic disease (Zu Ermgassen and others 2016).

The Garden Wildlife Health (GWH) continues to provide the public with information on best practice for feeding garden birds, on the signs of ill health in affected birds to look out for, and recommends temporary removal of supplementary food and water at sites with disease outbreaks to encourage dispersal of finches, reducing the opportunities for parasite transmission between birds of the same or different species (www.gardenwildlifehealth.org).

References


IoZ

**Avian pox virus infection**

**SUMMARY including possible threats – Alert;**

**Animal welfare concern**

Avian pox is an emerging infectious disease of British birds in the Paridae (tit) family, with the great tit (*Parus major*) most frequently affected (Lawson and others 2012). Sporadic disease has been known to affect other common garden bird species, including dunnock (*Prunella modularis*), starling (*Sturnus vulgaris*) and feral pigeon (*Columbia livia*), for many decades.

During Q4, disease incident reports of garden birds with skin lesions consistent with avian pox were received from members of the public from 22 sites in GB with 31 affected birds observed. The species included those in the tit family (*Parus major*, 9 birds), blue tit (*Cyanistes caeruleus*, 2 birds), coal tit (2 birds)) and dunnock (10 birds), starling (5 birds) and woodpigeon (*Columba palumbus*, 3 birds).

Whilst sightings of garden birds with suspected avian pox are relatively common, only a single great tit with suspected avian pox was submitted for post-mortem examination in Q4. Multiple severe proliferative skin lesions were present and sampled for histopathology for confirmation of the diagnosis. In 2016, a total of 92 disease incident reports of garden birds with skin lesions consistent with avian pox were reported (48 in Paridae and 44 in non-Paridae species). IoZ observed seasonality in these reports, with the majority of incidents from July to October (58.7% of all reports). The distribution of these incidents remains similar to recent years with reports widely distributed in England and Wales. Whilst Paridae pox has been reported in Scotland, the number of incidents remains small and the dunnock is more frequently observed with suspected avian pox than tit species.

References

IoZ
**Aprocta cylindrica in a robin**

**SUMMARY including possible threats – Point for information (PFI);**

**Garden bird health and public concern**

In Q4, we detected periocular nematode infestation in a European robin (*Erithacus rubecula*) consistent with our previous findings of the parasite *Aprocta cylindrica* (Beckmann and others 2014). The nematodes were collected and submitted to the Natural History Museum (London, UK) for species identification using morphological examination. If infection with *A. cylindrica* is verified, this will be the second confirmed case of this parasite in a European robin in GB. The risk *A. cylindrica* infection poses to other avian species in Britain is unknown. *Aprocta cylindrica* should, however, be considered a differential diagnosis in periocular abnormalities of robins and other insectivorous and migratory passerines in Western Europe. The appearance of affected birds with this parasitic condition in this common garden bird is striking and generates public concern for animal welfare.

**References**


IoZ

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**Mass mortality incidents of starling due to drowning**

**SUMMARY including possible threats – Point for information (PFI);**

**Animal welfare; mass mortality incidents of wild birds can generate public concern and media attention**

As reported in Q2, a mass mortality incident occurred in May 2016 at a site in South East England. It involved 22 dead juvenile starlings (*Sturnus vulgaris*) in a fish pond. Multiple reports of mass mortality of starlings caused by drowning have been reported since the early 1990s (Lawson and others 2015). These typically involve juvenile birds and occur during May-June. There is no evidence of underlying infectious or non-infectious disease predisposing to these incidents. Continued information on these events may help elucidate the drivers, and perhaps enable mitigation measures to be identified. Current recommendations include provision of a sloping side or ramp in water bodies, particularly during the high risk spring months, to enable wild animals to safely enter and exit.

**References**


IoZ

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**Red kite (*Milvus milvus*) exposure to second generation anticoagulant rodenticides**

**SUMMARY including possible threats – Point for information (PFI);**

**Threat to biodiversity**

Between 2012 and 2015, 21 red kites were examined post-mortem at IoZ by the Disease Risk Analysis & Health Surveillance project, a collaboration between Natural England and the Zoological Society of London. Liver samples were tested for second generation anticoagulant residues (SGARs) by the Predatory Bird Monitoring Scheme and results obtained in 2016. The SGARs most commonly detected were difenacoum (n=21), brodifacoum (n=18) and bromadiolone (n=17). In total, 16 of the 21 birds had summed SGAR levels of higher than 100ng/g wet weight and gross haemorrhages were detected, indicating that SGAR poisoning contributed to death. Seven of these 16 birds also had either a history involving trauma, or post-mortem examination findings suggesting minor to severe trauma had taken place before death. It is likely that, in the cases of minor trauma, the anti-coagulatory effect of the rodenticides contributed towards increased haemorrhaging and death. These findings suggest that SGAR poisoning remains a threat to reintroduced red kites in GB. Guidance to those laying rodent baits should be reviewed to try to reduce these instances of poisoning.

IoZ
**Wildfowl and Wetlands Trust (WWT) report**  
**October – December 2016**

**Passive surveillance of waterbirds**

Between October and December 2016, post mortem examination was undertaken on 49 wild birds of 17 species from seven WWT sites (Slimbridge, Gloucestershire; Arundel, West Sussex; London Wetland Centre, Greater London; Caerlaverock; Dumfries and Galloway; Welney, Norfolk; Martin Mere, Lancashire and Steart, Somerset). The birds examined were: mute swan *Cygnus olor* (7), whooper swan *C. cygnus* (9), Canada goose *Branta canadensis* (2), barnacle goose *B. leucopsis* (1), western greylag goose *Anser anser* (6), pink-footed goose *A. brachyrhynchus* (1), mallard *Anas platyrhynchos* (5), European green-winged teal *A. crecca* (1), European wigeon *A. penelope* (2), tufted duck *Aythya fuligula* (2), coot *Fulica atra* (6), moorhen *Gallinula chloropus* (2), black-headed gull *Chroicocephalus ridibundus* (1), wood pigeon *Columba palumbus* (1), common snipe *Gallinago gallinago* (1), buzzard *Buteo buteo* (1) and kingfisher *Alcedo atthis* (1). HPAI-positive cases were not subjected to post mortem examination at WWT. Results are summarised in Table 1 below.

<table>
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<th>Primary cause of death</th>
<th>Total</th>
<th>Species (and notes)</th>
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<tr>
<td><strong>Trauma</strong></td>
<td>13</td>
<td>3 x mute swan (1 powerline collision), 2 x whooper swan (powerline collisions), barnacle goose, pink-footed goose (euthanised – myiasis following gunshot wounds), tufted duck (euthanised plus tapeworm infestation), moorhen (euthanised plus heavy tapeworm infestation), 2 x coot (1 predated, 1 drowned), wood pigeon and kingfisher (flying accidents)</td>
</tr>
<tr>
<td><strong>Euthanasia on welfare grounds due to poor body condition</strong></td>
<td>6</td>
<td>2 x Canada goose (1 juvenile various conditions, 1 heavy tapeworm infestation), greylag goose, 2 x mallard (1 leg damage and 1 emaciated and wet feather), black-headed gull (starvation)</td>
</tr>
<tr>
<td><strong>Avian mycobacteriosis</strong></td>
<td>6</td>
<td>Greylag goose, 3 x mallard, coot, common snipe</td>
</tr>
<tr>
<td><strong>Peritonitis</strong></td>
<td>3</td>
<td>Whooper swan (plus enteritis/possible necrotic enteritis – secondary predation), greylag goose, coot (coelomitis plus enteritis)</td>
</tr>
</tbody>
</table>
Necrotic enteritis  3  
Whooper swan (euthanised), 
mute swan (juvenile, euthanised),
moorhen

Aspergillosis  3  
2 x whooper swan (1 juvenile), greylag goose

Gizzard impaction  2  
Greylag goose

No gross abnormalities found  5  
2 x mute swan (1 euthanised, 1 possible heavy metal ingestion),
2 x whooper swan,
wigeon

Trichomonosis  1  
Buzzard

Renal malfunction  1  
Coot

Cardiac failure  1  
Mute swan (suspected cardio vascular disease)

No diagnosis (due to predation/decomposition etc)  5  
Whooper swan (juvenile), 2 x green-winged teal, tufted duck, coot

| 49 |

Table 1. Primary causes of wild bird mortality found at WWT reserves Oct-Dec 2016.
This quarter’s post mortem findings were fairly typical early-mid winter causes of mortality. Powerline collision for swans is a relatively common cause of mortality (trauma and/or electrocution) (Frost 2008, Kelly and Kelly 2005). WWT is working with the electricity companies to reduce bird strike risks by installing high visibility deflectors on lines in identified higher risk locations e.g. flight-lines between feeding and roosting areas which reduces both mortalities and electricity outages.

References

Targeted Surveillance for Sarcocystis
The project harnessing wildfowlers’ ability to identify sarcocystis within dabbling ducks in shot birds and report them via the website sarcocystissurvey.org.uk brought a further 19 cases for this quarter from a range of dabbling ducks (mallard, teal, wigeon and gadwall (*Anas strepera*)) from across the UK. As case submissions were continuing into the next quarter, a fuller report will be provided at the end of the shooting season i.e. in the next report. Tissues collected from some of the affected birds will be used to further investigate the infection and parasite involved. A questionnaire survey of shooters will be undertaken also to try to understand more about the reporting of the infection and whether this indicates real increase in incidence and/or greater awareness/reporting. From the anecdotes of wildfowlers to date it would certainly seem like this is a fairly recent emerging infection.

Ruth Cromie, WWT
AQUATIC ANIMAL DISEASES

Investigation into Atlantic salmon (Salmo salar) population decline

SUMMARY Threat: Threat to biodiversity, screening for notifiable fish disease.

Following reports of low populations of Atlantic salmon fry in the river Usk catchment, the Fish Health Inspectorate (FHI) worked with Natural Resources Wales (NRW) to sample the fish populations to establish the cause of the absence of this year class. Extensive sampling from a number of sites, and from a fish farm on the catchment, ruled out the possibility of infection with Gyrodactylus salaris. A possible cause is believed to be water temperature profiles at the time that the fry should first start to feed which resulted in the poor recruitment of the year class.

CEFAS

Crayfish Plague (Aphanomyces astaci) outbreaks

During 2016 in England, four outbreaks of Crayfish Plague were confirmed. All outbreaks were in rivers and associated with mortality of native crayfish (Austropotamobius pallipes) populations. The first case was in June in the river Wensum, Norfolk. Crayfish Plague had been previously identified in the river but this outbreak showed that it had spread further upstream. The three other outbreaks were all new to the river systems, all were in September, although may have started a few weeks prior. These were in By Brook and Nailsworth stream in Gloucestershire and Bell Brook (aka Dowles Brook) in Worcestershire. All were raised to Centre for Environment Fisheries and Aquaculture Science (Cefas) by the Environment Agency (EA) and a range of samples of alive and dead individuals were supplied by the EA to the Fish Health Inspectorate, Cefas for testing and diagnosis. All positive tests were identified using Polymerase Chain Reaction (PCR). It is not known whether the outbreaks are connected in any way.

CEFAS

UK Priority and Conservation Concern Species

MAMMALIAN REPORTS

Verminous pneumonia (lungworm) in juvenile hedgehogs (Erinaceus europaeus)

SUMMARY including possible threats – Point for information (PFI);
Animal welfare concern

Lungworm is the common name for a parasitic infection with Crenosoma striatum or Capillaria aerophila and is an endemic and commonly diagnosed disease in GB, especially in juvenile hedgehogs (Majeed and other 1989). The prevalence of parasitic infestation of the lungs in hedgehogs in GB can reach up to 100% in some areas in autumn (Gaglio and others 2010). In some hedgehogs, severe bronchopneumonia and subsequent mortality can occur, especially in chronic cases (Bexton 2017). In Q4, IoZ received 37 disease incident reports of hedgehogs and conducted 12 post mortem examinations, of which at least nine had lungworm. On two occasions, concurrent disseminated bacterial infections were diagnosed, one with Pasteurella multocida and one with Bordetella bronchiseptica. Histopathological examination verified pneumonia in both these hedgehogs: the high burden of lung parasites was considered likely to play an important role in the pulmonary disease predisposing to severe secondary bacterial infection.

Hedgehog populations in GB are in decline and it is important to investigate whether infectious or non-infectious disease may be contributing to this decline.

References

Majeed SK, Morris PA and Cooper JE (1989) Occurrence of the lungworms Capillaria and Crenosoma spp. in British hedgehogs (Erinaceus europaeus). Journal of Comparative Pathology 100(1): 27–36

IoZ
Cetacean Strandings Investigation Programme (CSIP)

**Sperm whale (*Physeter macrocephalus*) Unusual Mortality Event (UME)**

**SUMMARY including possible threats – Point for information (PFI);**

*Multiple mortality, incident of public interest which generated considerable media attention involving species of conservation concern*

The largest sperm whale unusual mortality event (UME) in the North Sea region for many years occurred in January and February 2016, with 30 sperm whales stranding in five different countries (Germany, Netherlands, UK, France and Denmark), as described in Q2. The six whales which stranded in England all occurred in and around the Wash region of the east coast and were found between 22\(^{nd}\) January and 4\(^{th}\) February 2016. As with all stranded sperm whales previously recorded around the UK coast, they were juvenile/subadult males. Nothing significant was noted during the limited gross post mortem examinations that could be conducted. There was no evidence of recent feeding and no significant evidence of marine debris ingestion or external evidence of anthropogenic interaction noted. The findings are considered to be consistent with death consequential to live stranding for unknown reasons. IoZ

**Fin whale (*Balaenoptera physalus*) stranding, Norfolk, October**

**SUMMARY including possible threats – Point of information (PFI);**

**Animal welfare concern**

A juvenile female fin whale found dead stranded at Holkham in Norfolk on 20\(^{th}\) October 2016 (national reference SW2016/546) was in very poor nutritional condition. Abrasions on the underside of the keel and on the leading edge of the right tail fluke, together with the fresh nature of the carcass on initial discovery, were consistent with recent live stranding.

The evidence gathered to date indicates that the fin whale had developed a spinal abnormality as a result of an historical traumatic event (probably ship strike), which limited the degree of movement and led to progressive wasting of the musculature. Bacteriological evidence indicates a generalized bacterial infection, with route of ingress likely to be through the wound observed on the left side of the body. These factors contributed to the animal’s eventual live stranding and death.
Plate 1 Fin whale stranding (SW2016/546) at Holkham, Norfolk
Images credit Holkham Estate (top left image); Penny Clarke (bottom right hand image); CSIP-ZSL (all others)

BIRDS

Great Crane Project
Post-release health surveillance of birds from the Great Crane Project in both Somerset and Gloucestershire found Campylobacter spp. and coccidia (Eimeria gruis and E. reichenowi) in both flocks, which are typical findings for this monitoring.

Publication

AMPHIBIAN REPORTS

Chytrid fungi and ranavirus surveillance
SUMMARY including possible threats – Alert;
Horizon scanning for Batrachochytrium salamandrivorans (Bs); potential threat to newt health and biodiversity if Bs becomes established in the wild in GB
In Q4, we received no amphibian morbidity or mortality incident reports: this reflects the seasonal period of amphibian hibernation.
In 2016, we received a total of 210 amphibian disease incident reports from 150 sites of which the majority involved anurans (frogs and toads; 136 sites) and newts from 16 sites. Multiple mortality was observed at 81 sites (range 2-50 dead amphibians). The reported incidents had a wide distribution throughout England, Wales and Scotland with no apparent geographical clustering.
Post mortem examinations were conducted on 73 amphibians from 54 incidents and comprised 55 common frogs (Rana temporaria), 15 common toads (Bufo bufo), one natterjack toad (Epidalea calamita) and 2 smooth newts (Lissotriton vulgaris); from a single site. Liver samples and skin swabs were collected from each amphibian examined (where the state of carcass preservation permitted) for real-time PCR screening for ranavirus and for chytrid fungi (Batrachochytrium dendrobatidis (Bd) and B. salamandrivorans (Bs)) respectively. Samples from 65 amphibians tested negative for ranavirus with samples from three common toads pending results for ranavirus PCR. Batrachochytrium dendrobatidis was detected by rt-PCR in a skin swab from a natterjack toad examined from a site in Lancashire in April 2016. Histopathology confirmed cutaneous chytridiomycosis which was considered the likely cause of death (see Q2 & Q3). Samples from all remaining amphibians tested negative for Bd and Bs. Whilst Bs has been confirmed in captive amphibians in GB, it has not yet been detected in the wild. Vigilance for possible incursion of Bs into free-living amphibians in GB continues as a scanning surveillance priority. There is considerable concern regarding the threat Bs may pose to native newts in GB should it become established in the wild, particularly the great crested newt (Triturus cristatus), which is known to be susceptible to fatal Bs infection (Martel and others, 2013).

References

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