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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/collections/animal-disease-surveillance-reports#wildlife

Overview

Issues and trends

Avian Influenza in wild birds; winter 2016 – 28th April 2017 – update

Following the last update, there have now been a total of 24 (7 in 2016; 16 in 2017) Highly Pathogenic Avian Influenza Virus (HPAIV) infection incidents in wild birds involving HPAIV H5N8 in this period. The largest number of birds with HPAIV H5N8 per incident was 9 birds (all mute swans (Cygnus olor)) in January 2017. In total, HPAIV H5N8 has been detected in 15 species; Ducks – wigeon (Anas penelope) (8), pochard (Aythya farina), mallard (Anas platyrhynchos), teal (Anas crecca), tufted duck (Aythya fuligula); Geese – grey-lag goose (Anser anser), white fronted goose (Anser albifrons), Canada goose (Branta canadensis); swans – mute swan (Cygnus olor) (11), whooper swan (Cygnus cygnus); Other waterbirds – black-headed gull (Chroicocephalus ridibundus), cormorant (Phalacrocorax); birds of prey – peregrine falcon (Falco peregrinus), buzzard (Buteo buteo), kestrel (Falco tinnunculus). Perhaps significantly, the last H5N8 isolation was on the week commencing 13th March 2017 and there have been no further isolations since going to press on 28th April, that is, there have been no HPAIV isolations from wild birds for a period of 5 weeks. Further analysis of the results will follow.

Paul Duff, APHA Diseases of Wildlife Scheme

Notifiable Disease

Avian Influenza Virus

Summary: Notifiable disease; threat to UK farming and international trade, not recorded as a zoonosis

Great Britain AI Wild Bird Surveillance (AIWBS): Winter 2016/17

Total wild bird surveillance

The 2016 H5N8 HPAI incursion in wild birds (first reported in November 2016) continued in to the first quarter of 2017. A total of 421 birds were tested for Avian Influenza; 24 were found positive to H5N8; a range of species were represented, but the majority were waterfowl, including 11 mute swans (Cygnus olor).

Table 1: Number of wild birds tested and results in GB – 1st Quarter 2017

<table>
<thead>
<tr>
<th>Surveillance activity</th>
<th>Number of birds tested*</th>
<th>Positive AI virus result and species of bird</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Found dead/injured</td>
<td>421 (122)</td>
<td>There were 24 H5N8 positive cases found in a range of species of wild birds; the majority were waterfowl.</td>
<td>Scanning surveillance All-year-round</td>
</tr>
</tbody>
</table>

*Number of birds tested: figures for January-March 2016 are shown in brackets.
In March 2017, changes were made to surveillance requirements and for certain target species (wild geese, wild ducks, swans, gulls and birds of prey): the surveillance threshold was reduced to the finding of one dead bird. Members of the public are asked to remain vigilant and report findings of these target species in addition to mass mortality incidents to the Defra Helpline: 03459 33 55 77. The criteria for a mass mortality incident are five or more wild birds of any species at any location (irrespective of county) in England, Scotland and Wales.

**Warden Patrol Scheme**
The main emphasis is on AIWBS in found dead wild birds, including mass mortality incidents, and patrols of designated reserves by skilled wild bird ecologists and wardens. These Warden Patrols continue all-year-round, but are also seasonally targeted in the Winter and Spring periods (October to March) each year.

During the period 01 January to 31st March 2017 (Q1-2017), a total of 450 Warden Patrols were performed at sites across GB. This compares with a total of 374 Warden Patrols performed during the same period in 2016 (Q1-2016) in GB. During Q1-2017, the Warden Patrols were mainly performed by Natural England and the Wildfowl and Wetlands Trust. Warden Patrols were also carried out by five other voluntary organisations. In total during Q1-2017, 76 wild birds found dead were tested, with H5N8 detected in 5 birds. This compares with a total of 62 wild birds found dead and 44 of those tested during Q1-2016, but in this period for 2016 they were all AI negative.

In Q1-2017, Whooper Swans (*Cygnus cygnus*) (22) were the most common target species found, and birds were most commonly found in the North East region with the lowest numbers in Scotland, and Wales. This contrasts with Q1-2016, where mallard (*Anas platyrhynchos*) (9) were the most common target species found and birds were most commonly found in the South East region with the lowest numbers in Scotland, East, North East, North West and the Midlands.

**Current EU situation**
Since the first EU identification of H5N8 HPAI in a mute swan in Hungary on 27th October 2016, H5N8 has been found in an increasing number of wild birds (primarily waterfowl) in over 20 EU member states. The current EU outbreak situation can be found here: https://science.vla.gov.uk/flu-lab-net/docs/outbreak-hpai-h5n8-europe.pdf


**Current UK Situation**
For this reporting period, Avian Influenza Protection Zones (AIPZ) have been in place across England, Scotland, Wales and Northern Ireland in order to decrease the potential risk of direct/indirect contact between poultry and infected wild birds. Please click on the link for further information of the current AIPZ status in each area:


At all times, poultry keepers are advised to maintain robust biosecurity measures, vigilance for clinical signs of disease and to promptly report suspected cases of notifiable avian disease in poultry to APHA:

- In England – call the Defra Rural Services Helpline on 03000 200 301. The Helpline is open Monday to Friday, 8.30am to 5pm and there is an out of hours facility on the same number for reporting suspicion of disease in animals.
- In Wales, contact 0300 303 8268

Further information regarding avian influenza in poultry and wild birds is also available:

- When and how to register your poultry flock, and which species must be registered in Great Britain: https://www.gov.uk/guidance/poultry-registration.
Information about the chargeable testing scheme offered in GB by APHA that enables veterinarians to request ‘Testing for Exclusion of notifiable avian disease’ in chicken and turkey flocks, in circumstances that would not require the implementation of statutory disease control measures (Gibbens and others, 2014): http://ahvla.defra.gov.uk/vet-gateway/nad/index.htm.

Avian influenza and Newcastle disease/PPMV-1 events, including H5 HPAI internationally, are also summarised in GB Wildlife Disease Surveillance Partnership quarterly reports.

References
https://www.gov.uk/guidance/avian-influenza-bird-flu
Wildlife: disease surveillance reports, 2016 - GOV.UK
https://science.vla.gov.uk/flu-lab-net/docs/outbreak-hpai-h5n8-europe.pdf
Avian influenza (bird flu) - GOV.UK
Avian influenza in wild birds: winter 2016 to 2017 - GOV.UK
Rowena Hansen, Avian Virology, APHA Weybridge

Wildfowl and Wetlands Trust’s (WWT) role in GB Avian Influenza Wild Bird Surveillance (AIWBS): January – March 2017
SUMMARY: Threats - HPAIV, targeted active surveillance of wetland birds
Continuing high levels of vigilance for dead waterbirds continued into this quarter following increased risk of incursion of H5N8 HPAI into the UK in the autumn of 2016 and subsequent UK wild bird cases from mid-December. Some 67 dead waterbirds were sampled, comprising of 16 priority waterbird species (including swans, geese, ducks, gulls, rails and a cormorant). Geographical coverage consisted of reports from across England and also Wales and Scotland. See APHA report for fuller details on GB HPAI-positive cases found which include greylag geese (Anser anser) (2), whooper swans (Cygnus cygnus) (3) and black headed gulls (Chroicocephalus ridibundus) (2) from four WWT sites (three of which had not had cases in the previous quarter).
Of note is the low number of cases at sites which contained 10,000s of wild waterbirds where vigilance for carcasses was extremely high suggesting either, or both, a low case mortality rate or limited transmission of infection. To attempt to better understand how infection had affected the populations present, plans for live bird sampling were made and will be undertaken in the following quarter (plans for this quarter were rescheduled following positive detections of H5N8 at the proposed catch sites and the potential that trapping birds might lead to exacerbation or even spread of infection due to disturbance).

Zoonotic Diseases

APHA Diseases of Wildlife Scheme (DoWS); Salmonellosis in wildlife; January – March 2017
SUMMARY - THREAT: Zoonotic disease, farmed and pet animal risk
There is no routine monitoring of Salmonella 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. No Salmonella species were isolated from wild mammals or birds this quarter. Also there were no reports of bird variant S. Typhimurium DT40, DT56 or DT56v from domestic species. No salmonella infections were identified by DoWS this quarter.
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.
No salmonella infections were identified by DoWS this quarter.
Zoonotic bacterial infections in Western European hedgehogs (*Erinaceus europaeus*)
Summary including possible threats – Point for Information (PFI);
Public health and animal welfare concern. See UK Priority and Conservation Concern Species on page 9.
IoZ

Report from Wildlife Zoonoses and Vector Borne Disease Research Group; 1st Quarter 2017
SUMMARY - THREAT: Zoonotic, farmed, pet animal and international trade risk

Passive surveillance for lyssaviruses in UK bats
Thirteen wild bats and 2 zoo bats were tested at APHA in this quarter for lyssaviruses. All were negative.

Rabies surveillance in terrestrial wildlife
Vigilance continues for this notifiable disease in UK wildlife but no samples from terrestrial wildlife were submitted for testing this quarter.
Five dogs which had died in quarantine were tested for rabies with negative results.

WNV surveillance in wild birds (SV3045)
No wild bird tissue samples were tested during the period 1st January – 31st March 2017.
West Nile Virus surveillance in dead birds will recommence on 1st April 2017 to coincide with candidate vector activity season. Tissue samples from selected wild bird species including Blackbirds and Owls will also be tested for Usutu virus during the period 1st April 2017 to 31st October 2017.

West Nile virus surveillance in Equids
No serum samples from horses showing neurological signs were received for WNV cELISA testing between 1st January and 31st March 2017.

Usutu virus (USUV) Review
With a large number of confirmed cases in the Netherlands in the late summer of 2016, veterinary surgeons should be aware of the possibility of the incursion of Usutu Virus (USUV) infection for the first time in Great Britain. USUV is a flavivirus similar to West Nile virus and poses a potential threat to both wild and captive birds. The lifecycle involves mosquitoes transmitting the virus between birds (and occasionally mammals).
The primary hosts for USUV are birds, including European wild bird species. Blackbirds (*Turdus merula*) and owls Strigiformes appear to be most susceptible. The virus has particularly infected captive owls and species of owl not native to the UK such as Great Grey (*Strix nebulosa*) and Eagle owls (*Bubo bubo*). It may affect owl species of more northerly latitudes, although this point has yet to be confirmed.
In addition to birds, the virus has also affected a variety of other mammals including, although very rarely, humans. Humans may show neurological signs and become infected through being bitten by a virus-carrying mosquito, although infection via blood transfusion has also been implicated.
USUV probably originated in Africa however in mainland Europe, the most common sign of USUV in birds has been mass mortality events (one or more dead birds found together) in the summer months. Occasionally blackbirds have shown nervous signs such as weakness, head twisting, ataxia (loss of coordination), seizures and inability to perch normally. Since the first appearance of the virus in wild birds in Central Europe it has spread northwards and it may appear in the UK - hence the need for awareness.
If you have observed suspicious mortality which may be USUV, and it is in garden bird species please contact Garden Wildlife Health at the Institute of Zoology (www.gardenwildlifehealth.org), for other species please contact an APHA Veterinary Investigation Centre.
Becki Lawson, IoZ and Paul Duff, APHA Diseases of Wildlife Scheme
Ongoing New and Re-emerging Diseases, Unusual Diagnoses and Horizon Scanning

Mammal Reports

Malignant Catarrhal Fever in roe deer
Summary - Threat: Farmed deer and cattle
A roe deer (Capreolus capreolus) was examined by University of Bristol Farm Animal Pathology Service. This was a young male in fair bodily condition found dead with evidence of dehydration and extensive faecal staining of the perineum. It was submitted to screen for bovine Tuberculosis (bTB) as this had been an ongoing problem in local cattle. There was no gross pathology suggestive of bTB. The liver was congested and white 1-2 mm foci were seen scattered throughout. There was multifocal ulceration in the abomasum and extensive reddening of the rest of the intestinal tract and deep multifocal ulceration of the rectum. There were multiple raised, slightly firm 1mm pale foci on the enlarged mesenteric lymph nodes. Samples were forwarded to APHA for further testing. No Yersinia or Salmonella species were isolated from the intestinal contents. Histology revealed a multifocal subacute/chronic hepatic necrosis with a moderated subacute haemorrhagic enteritis and colitis. A few small sub-capsular granulomatous foci containing epithelioid and multinucleate cells were seen in the mesenteric lymph nodes. ZN staining of the lymph nodes sections was negative for AFB. The kidneys were unremarkable apart from slight congestion and a very few mineralised casts. OvHV-2 DNA detected by real time PCR in intestinal samples confirming Malignant Catarrhal Fever (MCF) as the cause of diarrhoea and death of this roe deer. MCF carried by sheep and goats may cause disease in roe deer and red deer (Vikoren and others 2006).

Reference

Michael Millar, University of Bristol Farm Animal Pathology Service and Alex Barlow, APHA Diseases of Wildlife Scheme

Avian Influenza Virus infection in a grey seal
Summary – Treat to seals and possibly human health
A grey seal (Halichoerus grypus) found ill on the coast of South-West England was euthanased and found to be infected with Avian Influenza Virus H3N8, although this was not considered to be the cause of the animal’s poor health. Avian Influenza virus infections have occasionally been isolated from seals in several parts of the world but during 2014 a series of significant mortalities of common seals (Phoca vitulina) occurred due to infection with HPAIV H10N7. The larger mortalities were in the southern and eastern regions of the North Sea. However, somewhat surprisingly, no cases were reported from British seals. In the recent case, further characterisation of the virus is being progressed and details will be the subject of a further report.

APHA Diseases of Wildlife Scheme

Fig 1: Ulceration in the rectum in Roe deer with MCF (Photo; M.Millar)
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

During Q1 2017, finch trichomonosis continued to be the most frequently reported infectious disease diagnosed in garden birds, with a total of 69 reports (from 43 sites) of sick or dead passerines where the cause was confirmed or considered likely to be this parasitic disease. The reports show a widespread distribution across England, Scotland and Wales.

Of the 22 post-mortem examinations conducted on garden birds, five were suspected or confirmed as trichomonosis (through detection of macroscopic lesions or isolation of Trichomonas gallinae respectively). These comprised two greenfinches (Chloris chloris; from 2 sites), one chaffinch (Fringilla coelebs), one bullfinch (Pyrrhula pyrrhula) and a collared dove (Streptopelia decaocto).

GWH continues to provide the public with best practice advice on feeding garden birds and on signs of ill health to look out for in affected birds. When finch trichomonosis is suspected, we recommend temporary removal of supplementary food and water to mitigate parasite transmission between birds (www.gardenwildlifehealth.org).

Causes of mortality in garden birds during the winter months are known to include a number of infectious diseases e.g. trichomonosis, salmonellosis or less commonly infection with Yersinia pseudotuberculosis. In Q1, we did not isolate Salmonella sp. or Yersinia pseudotuberculosis from any garden birds examined.

Since its emergence in 2005, finch trichomonosis has caused a significant and ongoing decline of the UK breeding greenfinch population (Lawson and others, 2012; Robinson and others, 2015).

References


IoZ

Beak deformities in blue tits
Summary including possible threats – Point for information (PFI);
Animal welfare concern, horizon scanning and general public concern

In Q1 2017, we received 17 disease incident reports of blue tits (Cyanistes caeruleus) from 15 sites; these included seven mortality incidents with five post-mortem examinations conducted. These numbers are slightly higher than those observed in Q1 of 2016 (11 disease incident reports of blue tits from 10 sites). Observation of single blue tits with beak deformities were received from five sites with a wide distribution in England and Wales. During Q1 in 2016, we had three reports involving beak deformities in blue tits. A single affected adult blue tit from Devon was found dead and submitted for PME. The maxillary and mandibular beaks were in occlusion but severely overgrown with the maxillary beak measuring...
24.3mm in length and the mandibular beak 14.7mm, compared with 6.1mm and 5.9mm in an in an unaffected bird of this species. Figures 2A&B; photos showing the head and upper body of two blue tits (Images courtesy of ZSL/GWH).

Histopathological examination revealed fungal organisms (hyphae 2-3 µm wide) within the affected areas of the thickened keratin layer of the beak and remodelling of the premaxilla with increased amounts of bony trabeculae. Panfungal PCR targeting the nuclear ribosomal repeat region was conducted on the beak lesion and sequence identified the fungus, *Tausonia pululans*, as the potential pathogen in this case. Whether this represents a primary or opportunistic infection is unknown.

The four additional disease incident reports involving beak deformities in blue tits described malocclusion of the beaks. There are multiple potential causes of these beak deformities (e.g. trauma, neoplasia, cnemidocoptic mite infection); however, with no examination being conducted in these birds, the cause could not be identified.

Scanning surveillance for beak abnormalities is important since avian keratin disorder is an emerging infectious disease of wild birds in North America, first documented in Alaska in the late 1990s. Avian keratin disorder is characterised by accelerated keratin production leading to beak deformity and overgrowth. Wild birds in the tit and crow family are most commonly affected, sometimes at high prevalence. A novel picornavirus (poecivirus) has recently been identified as the possible cause (Zylberberg and others, 2016).

The British Trust for Ornithology runs a citizen science survey, the Big Garden Beak Watch, which solicits photographic evidence of observations of beak abnormalities in wild birds from GB. This survey has obtained a large number of observations across a wide range of species; however, beak abnormalities in wild birds remain a relatively uncommon observation in GB. The case described above is the first blue tit with a severe beak abnormality that has been submitted for examination at IoZ since 2005. There is currently no evidence to indicate emergence of avian keratin disorder in GB however horizon scanning for this disease should continue.

References
BTO Big Garden Beak Watch [https://www.bto.org/volunteer-surveys/gbw/about/background/projects/bgbw](https://www.bto.org/volunteer-surveys/gbw/about/background/projects/bgbw)
IoZ

Wildfowl and Wetlands Trust (WWT) report:- January – March 2017

Passive surveillance of waterbirds
Between January and March 2017 post mortem examination was undertaken on 53 wild birds of 18 species from six WWT sites (Slimbridge, Gloucestershire; Arundel, West Sussex; London Wetland Centre, Greater London; Welney, Norfolk; Martin Mere, Lancashire and Llanelli, Carmarthenshire). The birds examined were: whooper swan (2), Bewick’s swan *Cygnus columbianus bewickii* (1), Canada goose *Branta canadensis* (3), greylag goose (1), mallard *Anas platyrhynchos* (14), European green-winged teal *A. crecca* (1), European wigeon *A. penelope* (1), tufted duck *Aythya fuligula* (2), black-headed gull (6), common gull *Larus canus* (5), coot *Fulica atra* (5), moorhen *Gallinula chloropus* (6), wood pigeon *Columba palumbus* (1), jackdaw *Corvus monedula* (1), rook *C. frugilegus* (1), cormorant *Phalacrocorax carbo* (1), and sparrowhawk *Accipiter nisus* (1). HPAI-positive cases were not subjected to post mortem examination at WWT and some carcases have yet to be examined due to some precautionary restrictions on carcase movement to the veterinary pathologist.
Some 28% of mortalities (15/53) were due to trauma, caused by a range of issues including a flying accident event of common gulls (of which five were collected and examined) apparently blown into the ground on the edge of the Slimbridge reserve during stormy weather at the beginning of February. Although the timing of the mass mortality gave cause for concern in terms of HPAI, their extensive injuries were apparent at collection as well as during PME (and were confirmed AI negative on virology). A Canada goose showing neurological signs prior to death had sustained an injury to the back of its head (possibly following a flying accident). A Bewick’s swan sustained multiple injuries likely as a result of a flying accident which left it stuck in fencing. The beginning of the breeding season brought traumatic causes of death of a rook and jackdaw in proximity to a pair of nesting geese suggesting they had been killed by the territorial birds. There were a number of both male and female mallard deaths caused by mating aggression. Parasites found in the proventriculus of a cormorant which died of traumatic injuries are being examined currently. Other breeding seasonal causes of death included two cases of egg peritonitis in a coot and mallard.

Aspergillosis was responsible for the deaths of seven birds including four different duck species, a Canada goose, black-head gull and a coot. Avian mycobacteriosis was responsible for deaths of four mallard, two moorhens and a coot. Tumours were found in two birds: a greylag goose with a possible osseous neoplasia on its right humerus, and a mallard with a testicular tumour (and a range of other debilitating conditions including being unable to fly hence it was euthanised).

**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](http://sarcocystissurvey.org.uk) brought a further seven cases for this quarter from dabbling ducks (mallard, teal, pintail) and a greylag goose, shot in locations across Northern and southern England, Wales, Scotland and Northern Ireland. One submitter reported a case he had experienced from a woodpigeon shot a year previously. In terms of wildfowl cases, these reports bring the total to 29 cases for this shooting season, in contrast with seven cases for the previous season. It is not clear if this increase in reports represents increased prevalence of infection or better awareness of the reporting mechanism or a combination of both. An opportunity to write an article in the popular shooting press on the disease, albeit at the end of the shooting season, was taken and this may increase awareness for subsequent seasons. Further investigations of tissues submitted as part of this project will be undertaken in the subsequent quarter.

Ruth Cromie, WWT

**UK Priority and Conservation Concern Species**

**Mammal Reports**

**Zoonotic bacterial infections in Western European hedgehogs (Erinaceus europaeus)**

Summary including possible threats – Point for Information (PFI);

**Public health and animal welfare concern**

_Yersinia pseudotuberculosis_  

During this quarter _Yersinia pseudotuberculosis_ was isolated from the liver and small intestine of a subadult female hedgehog in thin body condition that died in West Yorkshire in March 2017. The most significant macroscopic findings were diffuse, multifocal, circular, white to pale cream coloured lesions with a slightly nodular appearance observed in the surface and superficial parenchyma of the liver, consistent with disseminated yersiniosis. Histopathological examination of the spleen, large intestine, liver and lung was performed to further assess the significance of the bacterial infection in this case. Hepatitis with focal necrosis and inflammation was diagnosed. No bacteria were noted within the affected area, however, the moderate degree of autolysis in this tissue likely masked subtle changes and the presence of bacteria cannot be excluded. _Yersinia pseudotuberculosis_ has a worldwide distribution with wild mammals and birds acting as reservoir species (Arrausi-Subiza and others, 2016; Kimura and Sasaki, 2016). Yersiniosis in humans is the fourth most commonly reported food-borne zoonosis in Europe, although disease incidence has been decreasing since 2007 (Arrausi-Subiza and others, 2016). All strains of the bacterium are
considered pathogenic and infection in humans most commonly occurs after the ingestion of dog or cat faeces, raw pork or other contaminated materials (Kimura and Sasaki, 2016). Yersiniosis is diagnosed sporadically in wild mammals and birds in GB, most commonly during the colder winter months. The prevalence of *Y. pseudotuberculosis* infection in hedgehogs is unknown but routine hygiene precautions for people handling them, such as wearing gloves when in contact with animals/potentially infectious materials, are recommended as routine.

Multiple zoonotic pathogens isolated from a hedgehog: *Streptococcus dysgalactiae* ssp. *Equisimilis*, *Pasteurella multocida* and *Candida albicans*

*Streptococcus dysgalactiae* ssp. *equisimilis*, *Pasteurella multocida* and *Candida albicans* were isolated from the lungs of an adult female hedgehog that died in West Sussex in February 2017. Histopathological examination of the lung tissue revealed changes suggestive of bronchitis/bronchiolitis with the presence of intralesional bacteria of mixed appearance including Gram-positive cocci; however, the advanced state of autolysis hindered interpretation of these findings and it is uncertain which of these pathogens were of the greatest significance.

*Streptococcus dysgalactiae* ssp. *equisimilis* has been isolated from a wide range of domestic and wild animal species (Acke and others, 2015): however, to our knowledge, *S. dysgalactiae* ssp. *equisimilis* has not previously been isolated from a hedgehog.

*Listeria monocytogenes*

*Listeria monocytogenes* serotype 1/2a was isolated from the liver and heart of an adult male hedgehog that was found dead in East Sussex in June 2016, but was frozen and examined in Q1 2017. This marks the fourth case of isolation of this bacterium from a free-living hedgehog in GB since 2013, and the second isolation of serotype 1/2a (the first serotype 1/2a was found in a hedgehog that died in Bedfordshire in Q4 2016). Histopathological examination diagnosed pleuritis and pericarditis with intralesional bacterial seen within affected lung tissue. However, the bacteria noted on microscopy were Gram negative and therefore unlikely to be *L. monocytogenes* which is Gram-positive. Interpretation of these findings was hindered by moderate to severe tissue autolysis, therefore we cannot rule out the involvement of *L. monocytogenes* in the lesions observed.

References


IoZ

Birds

**Great Crane Project**

Faecal screening of 10 samples from a roosting area of cranes released as part of the Great Crane Project in Somerset found 2/10 samples positive for *Eimeria reichenowi*, 3/10 contained ‘worm eggs’, and all were positive for *E. coli* but negative for *Salmonella* and *Campylobacter*.

*Ruth Cromie, WWT*
Persecution of hen harriers
Summary including possible threats – Point for information (PFI);
Animal welfare concern, biodiversity and general public concern
An endangered hen harrier (Circus cyaneus), hatched in 2016, was found dead in Northumberland in January 2017. The principal findings were stomatitis and enteritis (inflammatory disease of the oral cavity and intestine respectively) in association with Capillaria spp. nematodes. Adrenal gland hypertrophy was also noted, suggesting the bird had been in chronic stress. X-rays were taken and two lead shot pellets were detected in the carcass, one visible below the mandible (Figure 2): the wounds linked with these had healed some time previously. This finding provides further evidence of the continued persecution of hen harriers in the UK (Hopkins & Peniche, 2015; RSPB 2014).

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 Q1 2017, we received a total of 59 amphibian morbidity and mortality incidents from 49 sites of which the majority involved anurans (frogs and toads; 46 sites). Of these reports, 15 involved multiple mortality events of common frogs (Rana temporaria) (2 - estimated 150 carcasses per site) and 6 multiple mortality events of common toads (Bufo bufo) (2-120 carcasses per site). Five morbidity and mortality incidents included newts with two of them being multiple mortality events. The numbers of amphibian reports are similar to the Q1 report of the previous year and the reported incidents have a wide distribution throughout England and Wales with no apparent geographical clustering.
Post mortem examinations were conducted on 33 amphibians from 24 incidents and comprised 16 common frogs, 11 common toads, 5 smooth newts (Lissotriton vulgaris) and 1 great crested newt (Triturus cristatus). 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. All samples tested negative for ranavirus, Bd and Bs. As in previous years and typical for the spring season, we diagnosed many amphibian mortality incidents due to predation, exhaustion or drowning during mating (diagnoses of exclusion).
To date, Bs has only been confirmed in captive amphibians in GB (Cunningham and others, 2015) and has not yet been detected in the wild. It is considered a significant threat to native species biodiversity and animal welfare, particularly to the great crested newt, which is known to be susceptible to fatal Bs infection (Martel and others, 2013). We continue heightened surveillance for Bs, prioritising investigation of newt mortality incidents, being vigilant for possible incursion of Bs into free-living urodeles in GB.

References

**Suspected otter (Lutra lutra) predation at two toad spawning sites**

Two incidents of common toad mass mortality at spawning sites were reported both had signs consistent with predation (Duff and Hewitt 1999). The likely predators in both were otters ‘de-gloving’ (removing) toxic skin from the hind legs (toad skin is toxic, but internal tissues are not). Very few healthy live toads were observed at either site; at one, eight toads were killed while at the second approximately 50 were found. A further report will follow.

**Reference**


**Paul Duff, APHA Diseases of Wildlife Scheme**