GB Wildlife Disease Surveillance Partnership quarterly report
Disease surveillance and emerging threats
Volume 23: Q3 – July-September 2018

<table>
<thead>
<tr>
<th>Highlights</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human ‘cold sore’ herpes viruses infection in two hedgehogs</td>
<td>9</td>
</tr>
<tr>
<td>Avian botulism – record summer for number of cases and for risk consultations</td>
<td>20</td>
</tr>
<tr>
<td>Predicting global killer whale population collapse from polychlorinated biphenyl (PCB) pollution</td>
<td>28</td>
</tr>
</tbody>
</table>

Contents

Introduction and overview.........................................................................................................................1

Notifiable diseases........................................................................................................................................1

Zoonotic diseases........................................................................................................................................5

Ongoing new and re-emerging diseases, unusual diagnoses and horizon scanning.........................8
Introduction and overview

The GB Wildlife Disease Surveillance Partnership comprising the Animal and Plant Health Agency (APHA), SRUC Veterinary Services, 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:


A full explanation of how data is analysed is provided in the annexe on GOV.UK https://www.gov.uk/government/publications/information-on-data-analysis

Issues and trends

Extended periods of warm, dry weather produced record numbers of submissions of waterbirds with suspected avian botulism. These entailed discussions between APHA Diseases of Wildlife Scheme (APHA DoWS) local authorities and medical authorities on the risks involved. We also advised on possible preventative measures. The ‘avian botulism’ season, for the first time, extended until October.

Paul Duff, APHA Diseases of Wildlife Scheme (DoWS)

Notifiable diseases

Avian Influenza (AI) Virus

Great Britain AI Wild Bird Surveillance (AIWBS): July – September 2018

Total wild bird surveillance

During the third quarter of 2018 there was an unusually high number of reports of wild bird mortality, including mass mortality events. This was assumed to be caused by the hot summer weather. Carcases were submitted under the wild bird surveillance scheme for avian influenza (AI), however no samples tested positive for highly pathogenic avian influenza. Four birds tested positive for influenza A screening, but on further characterisation all were identified as low pathogenicity viruses. The last positive finding
of highly pathogenic avian influenza was in April 2018, in a Eurasian buzzard (*Buteo buteo*) found in Suffolk.

The threshold criteria for collections and submissions of wild birds found dead for the purposes of AI surveillance remains at three or more waterfowl target species—specifically wild geese, wild ducks, swans, and gulls found in the same location; and at one or more for birds of prey, and five or more of any species, found in the same location (mass mortality event).

### Number of wild birds tested and results in GB – 3rd Quarter

<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>340 (197)</td>
<td><strong>All Influenza A positive, but not highly pathogenic strains:</strong> One Common Tern (<em>Sterna hirundo</em>) in Hertfordshire (July); One Mallard Duck (<em>Anas platyrhynchos</em>) in Suffolk (August); One Herring Gull (<em>Larus argentatus</em>) in Fife (September); One Mute Swan (<em>Cygnus olor</em>) in Oxfordshire (September)</td>
<td>Scanning surveillance All-year-round</td>
</tr>
</tbody>
</table>

*Number of birds tested (figure may be slightly different from other reports due to exact query run on dataset). Figures for July-September 2017 are shown in brackets.

Members of the public are asked to remain vigilant and report findings of 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 or 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 1st April – 30th June (Q3-2018), a total of 156 Warden Patrols were performed at sites across GB. This compares with a total of 158 Warden Patrols...
performed during the same period in 2017 (Q3-2017) in GB. During Q3-2018, the Warden Patrols were all performed by the Wildfowl and Wetlands Trust. In total during Q3-2018, 78 wild birds found dead were tested, with no HPAI detections. This compares with a total of 43 wild birds found dead and tested during the same period of 2017.

In Q3-2018, Mallard ducks (*Anser platyrhynchos*) were the most common target species found, and birds were most commonly found in the North West region with none submitted from the Midlands or Scotland. This is similar to Q3-2017, where Mallard ducks were also the most common target species found, though different in that birds were most commonly found in the South East region with none submitted from the Midlands or Scotland in Q3 of 2017.

**Current EU situation**

All HPAI detections in wild birds during 2018 in Finland, Sweden, the Netherlands, Germany, Ireland, Slovak Republic and Denmark were attributed to HPAIV H5N6. The last confirmed report was in three wild pheasants (*Phasianus colchicus*) found dead in Denmark on 19th September 2018. In captive birds, HPAI H5N6 re-appeared on a holding in Germany on 1st September 2018.

In 2018 HPAI outbreaks of subtype H5N8 have been detected in poultry in Bulgaria and Italy, with continuing outbreaks in Bulgaria affecting four regions. Eradication and control measures remain in place.

APHA, in collaboration with Defra, monitors the international situation and distribution of avian influenza detections:


**Current UK Situation**

At the time of writing, there have been no outbreaks of HPAI of any kind in commercial or captive poultry or birds in the UK in 2018. In May 2018 the risk level for infection of wild birds with HPAIV H5N6 was reduced (from high) to low, due to the improving environmental conditions (increased warmth and UV) and the departure of overwintering waterfowl. In addition, the risk to both free-range and housed poultry has also reduced to low. Avian Influenza Prevention Zones (AIPZ) which were in place across England and Wales were lifted on Friday 25th May 2018.

As winter approaches and migration of wild birds continues along the East Atlantic Flyway, the risk to the UK will continue to be closely monitored. There have detections of HPAIV H5N6 in wild birds along this flyway.
In any case, 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 hour’s facility on the same number for reporting suspicion of disease in animals.
- In Scotland and Wales, contact your local APHA Field Services Office: https://www.gov.uk/government/organisations/animal-and-plant-health-agency/about/access-and-opening.

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):

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

References


Rowena Hansen, Avian Virology, APHA Weybridge

Joanna Tye, Department of Epidemiological Sciences, APHA Weybridge
Wildfowl and Wetlands Trust’s (WWT) role in GB Avian Influenza Wild Bird Surveillance (AIWBS):-
July – September 2018

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

Throughout this third quarter, avian influenza viruses continued to be monitored in dead wild birds on WWT reserves across the country as part of its involvement in the GB AIWBS. A total of 103 dead wild birds were found between July and September 2018, of which 79 were recovered and sampled for avian influenza. The discrepancy between the number of dead birds found and those sampled is largely due to a high mortality event (avian botulism) at a WWT reserve in Lancashire. Only a portion of these birds were sampled for avian influenza (see ‘Passive surveillance of waterbirds’ section below for more details on this mortality event).

Sampled dead birds originated from seven WWT reserves located in Gloucestershire, Carmarthenshire, West Sussex, Greater London, Norfolk, Lancashire and Tyne and Wear. The sampled birds comprised of 13 species of surveillance priority, including swans, geese, ducks, gulls and rails. One non-priority species, a juvenile avocet (Recurvirostra avosetta), was also sampled. All samples tested negative for avian influenza.

WWT

Zoonotic diseases

APHA Diseases of Wildlife Scheme (DoWS); Salmonellosis in wildlife; July – September 2018

Threat: Zoonotic, 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 wild birds this quarter. A swab was submitted from a private laboratory from a one year-old hedgehog (Erinaceus europaeus). No other information was given. A widely antibiotic sensitive S. Livingstone was isolated. Defra’s “Salmonella in Livestock Production in Great Britain during 2016” reports that chickens in 11 poultry flocks were infected with S. Livingstone. This isolate is usually associated with contaminated hatchery equipment. It was not isolated from other farmed animal species. An untypeable S. Enteritidis was isolated from an immature hedgehog from another site. This isolate was resistant in vitro to ampicillin, sulphonamides, tetracycline, and trimethoprim/sulphamethoxazole. The usual S. Enteritidis phage type in hedgehogs is phage type 11, which is common and widespread in hedgehogs in England (Keymer and

Significant chick losses were reported in a 300 nest breeding colony of lesser black backed gulls (*Larus marinus*), following bad weather with high tides and strong winds on the Solway, Cumbria. 19 chicks were found dead and about 70 chicks remain. A batch of eight dead chicks were submitted initially for AIV screening but no other testing was possible due to advanced autolysis. A further two fresher chicks, with an estimated age of four weeks, were examined and these were in poor bodily condition. Also there was evidence of dehydration possibly due to current hot weather. There was no evidence of traumatic injury. A widely antibiotic sensitive *S. Mbandaka* was isolated on direct culture from the intestinal contents of one of these birds, indicating possible disease causing significance, contributing to the poor body condition of the gull. *S. Mbandaka* is occasionally isolated from cattle and cattle feedstuffs. In this case, it is tempting to speculate that the gulls may have become infected through feeding around cattle farms. Thus it was suggested that fresh faecal samples from the gull colony would be useful to determine if infection was widespread. Advice concerning the zoonotic potential of this isolate was also given.

Bird variant *S. Typhimurium DT40* was isolated from the caecal contents of a ten-day-old pheasant chick (*Phasianus colchicus*) on a game farm in England during July. No clinical history was given. There were no reports of bird variant *S. Typhimurium DT56* or DT56v from domestic species.

**References**


**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 routine game bird isolates were excluded. All are from England and Wales.

**Alex Barlow, APHA Diseases of Wildlife Scheme**
Report from Wildlife Zoonoses and Vector Borne Disease Research Group; 2nd Quarter; April – June 2018

Summary - threat: Zoonotic, farmed, pet animal and international trade risk

Passive surveillance for lyssaviruses in UK bats
Two hundred and thirty eight bats were tested for lyssavirus under passive surveillance. Two hundred and thirty four bats were negative whilst four daubenton’s bats (Myotis daubentonii) were positive for European Lyssavirus 2. Three of these bats were from Bodiam Castle, East Sussex and one was from Northumberland.

Nine zoo bats were tested 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.

West Nile Virus (WNV) surveillance in wild birds SV3045
Brain and kidney tissue samples from 152 wild birds received from APHA Veterinary Investigation Centres, SRUC Veterinary Services and ZSL representing 28 identified species of small passerines, corvids, raptors and water birds were tested by TaqMan PCR for WNV during this period with negative results.

Usutu virus surveillance in wild birds SV3045
Brain and kidney tissue from four Blackbirds, four Tawny owls, two Goshawk and two Crows were tested for Usutu virus by TaqMan PCR with negative results.

WNV surveillance in Equids
One serum sample, from a horse which had exhibited neurological signs, was tested for WNV by cELISA (detecting both IgM and IgG) during this period with positive result. However, IgM capture ELISA carried out on this sample was negative. The WNV vaccination status of this horse is unknown.

Paul Phipps, Wildlife Zoonoses and Vector Borne Disease Research Group, APHA Weybridge
Ongoing new and re-emerging diseases, unusual diagnoses and horizon scanning

Mammal reports

Wild mammal reports from Scotland

Rabbit haemorrhagic disease virus type 2 was diagnosed in two juvenile rabbits from Skye, where members of the public reported increased rabbit deaths. Significant findings at necropsy included pulmonary haemorrhages, pale livers, dark, swollen kidneys and some free haemorrhages into the thoracic and peritoneal cavities. Both livers tested positive for RHDV by PCR, and sequence analysis indicated the presence of RHDV variant 2 RNA.

Rabbit haemorrhagic disease (RHD) has been present in wild rabbits in the UK for several years and many pet rabbits have been vaccinated against it, but vaccination against RHD confers minimal protection against the new variant RHDV2. The RHDV2 virus is highly contagious, affects rabbits and hares, and can be stable in the environment for days to weeks, particularly within carcases. Vaccination against RHDV2 is now recommended for pet rabbits due to the risk presented by contact with wild rabbits.

Caroline Robinson, SRUC Veterinary Services

Wild mammal reports from IoZ

In Q3 2018, we received a total of 55 DIRs involving 6 sick and 54 dead European hedgehogs (*Erinaceus europaeus*) from 48 sites from England, Scotland and Wales. We conducted post-mortem examinations on 4 hedgehogs from separate sites in England. The majority of DIRs where dead hedgehogs were observed were attributed to trauma and/or mammalian predation (e.g. foxes, dogs).

Herpesvirus infection on Western European hedgehogs in Great Britain

Summary including possible threats – Point for Information (PFI);
Concern for free-living European hedgehog health and welfare;

A recent study (Hydeskov et al., 2018) detected the presence of herpesvirus infections in British hedgehogs. Samples from 129 hedgehogs from across GB were tested, 2011–2016 inclusive, with 59 (46%) of them testing PCR-positive. Sequence analysis revealed at least two novel viruses within the *Gammaherpesvirinae* in the British hedgehogs. Two genetically distinct *Human alphaherpesvirus* 1 viruses were identified from previously published cases of a hedgehog from Switzerland and a second from Sweden with fatal herpesvirus disease, both of which had been held in captivity for treatment and
rehabilitation. Whilst the clinical significance of gammaherpesvirus infections in British hedgehogs remains unknown, with no confirmed evidence of associated disease to date, the identification of *Human alphaherpesvirus 1* in hedgehogs from mainland Europe highlights a potential risk for anthroponotic infection. GWH are currently in the process of producing a factsheet on ‘Hedgehog Herpesvirus infection’ to raise awareness and understanding for members of the public and those involved in hedgehog rehabilitation.

**References**


IoZ

**Wild mammal reports from APHA DoWS**

**European brown hares (*Lepus europaeus*) examined autumn 2018**

Summary including possible threats – Awareness, Alert and Point for information.

**Biodiversity threat (threatened species not identified) Public concern and press reporting**

The press covered reports on deaths of brown hares in England. Although these losses did not occur in the period covered by this report, some provisional results are given in response to the press reports, in the table below. Examinations are still in progress in submitted hares and reports of hares being found dead are still being received.
<table>
<thead>
<tr>
<th>Date received</th>
<th>APHA Centre</th>
<th>Location of hare</th>
<th>Diagnosis</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 14.09.18</td>
<td>Bury</td>
<td>Suffolk</td>
<td>EBHS (from histopathology)</td>
<td>RHD -ve</td>
</tr>
<tr>
<td>2.3. 18.10.18</td>
<td>Bury</td>
<td>1.Suffolk 2.Norfolk</td>
<td>1. Trauma 2. No obvious diagnosis</td>
<td>Trauma to skull PM findings suggested EBHS. Virology to follow</td>
</tr>
<tr>
<td>7. 25.10.18</td>
<td>Bury</td>
<td>Suffolk</td>
<td>Trauma – predator attack</td>
<td>RHD - ve</td>
</tr>
<tr>
<td>8. 25.10.18</td>
<td>Bury</td>
<td>Norfolk</td>
<td>No obvious diagnosis</td>
<td>PM findings suggested EBHS. RHD - ve</td>
</tr>
<tr>
<td>9. 29.10.18</td>
<td>Bury</td>
<td>Suffolk</td>
<td>No obvious diagnosis</td>
<td>History and PM findings suggested EBHS</td>
</tr>
<tr>
<td>10. 25.10.18</td>
<td>Penrith</td>
<td>Hants</td>
<td>Coccidiosis</td>
<td></td>
</tr>
<tr>
<td>11. 29.10.18</td>
<td>Penrith</td>
<td>Cumbria</td>
<td>Trauma – predator attack and septicaemia</td>
<td></td>
</tr>
<tr>
<td>12. 01.11.18</td>
<td>Bury</td>
<td>Norfolk</td>
<td>Eye lesions (possible hypopyon) Possible jaundice</td>
<td>Myxomatosis PCR -ve</td>
</tr>
</tbody>
</table>
Notes

1. Hares 1, 2, 4, 6, 7, 8 and 9 above, livers examined by electron microscopy – negative (provisional result) further viral examinations will be undertaken. Selected tissues of the other hares will also be examined for viruses, these examinations will take at least two weeks to complete.

2. No typical myxomatosis lesions seen in these animals. Some animals will be tested with a myxomatosis test (PCR/ electron microscopy).

3. Examinations are still on-going. Reports of dead hares are still on-going and APHA DoWS will continue to accept cases that meet the DoW Scheme’s criteria for acceptance. From the diagnoses thus far, a variety of diseases known to occur in UK hares has been recorded. We are not aware thus far of a ‘new disease emergence’ from the examinations. Hypopyon, the accumulation of inflammatory cells in the anterior chamber of the eye was seen in two animals and in photos from a third hare (not submitted) - three cases could be considered unusual. Two of these cases tested negative for myxomatosis virus and this is therefore an unlikely cause. Hypopyon is a non-specific lesion that can be associated with a variety of infectious and non-infectious conditions.

4. It is significant that for each location, the number of hares reported dead is quite low, usually 1-3 carcases per incident. During the EBHS epidemic years (1989-1990), the Wildlife Disease surveillance scheme at the time reported an average of 28 carcases per incident in 15 incidents (Duff et al, 1994; Duff et al 1997).

5. Seasonal mortality in hares, due to a variety of diseases, during the autumn months, is considered normal in hares, particularly following a successful breeding season when populations may be high and exceed the healthy carrying capacity of the habitat. Nevertheless APHA DoWS will examine hares, particularly from mass mortalities, primarily to assess if new diseases are emerging in the population.

References


APHA DoWS
Paratuberculosis (Johne’s disease) in a wild deer

Summary including possible threats – disease transmission between wildlife and livestock; threat to livestock from a commercially significant disease.

Paratuberculosis was diagnosed in a wild fallow deer (*Dama dama*) culled in Wales and submitted for possible bovine tuberculosis testing. Paratuberculosis is known to be endemic in British wild deer however the prevalence of the disease, certainly in recent years, is not known, APHA DoWS has not diagnosed this disease in the past 15 years. The case was reported to the OIE (World Organisation for Animal Health).

APHA DoWS / Project for tuberculosis infections in wildlife

RHD2 diagnosed in a wild rabbit from Wales

Summary including possible threats. Transmission of RHD2 between wild and domesticated rabbits. Threat to biodiversity, RHD is considered to be a contributing to population depression of some wild rabbit populations in GB which in turn impacts on maintenance of specific habitats including breckland and chalk downland.

RHD2 was diagnosed on the basis of post mortem findings and a PCR result in a wild rabbit (*Oryctolagus cuniculus*) submitted from a mortality incident in Wales.

APHA DoWS

Wildlife Diseases, horizon scanning; points for interest and threats associated with wildlife and wildlife disease

Very brief summaries are given. Including possible wildlife disease threats to human, livestock and biodiversity health.

- Greenfinch population decline in the UK caused by finch trichomonosis.  

- European wolf population expansion to Germany, the Netherlands and Belgium  

- Multiple antimicrobial resistance in North Sea common seal pups of likely human origin via a possible risk pathway from sewage outlets.


- Letter to the *Veterinary Record* suggests that depletion in hedgehog numbers may be the result of badger predation. Other threats may be involved. Ref: Jones, T. (2018). Badger culling and the impact on hedgehogs. Veterinary Record, 182(12), 354-354


- A proposed wild animal reservoir for the rare disease Borna disease virus (BoDV-1) is the bicoloured white-toothed shrew. Does not occur in the UK, but closely related species occur on the Scilly and Channel Islands. Ref: First cases of Borna disease virus 1 (BoDV-1) transmission through organ transplantation. European Centre for Disease Prevention and Control. Acute encephalitis associated with infection with Borna disease virus 1 – Germany, 2018. 26 March 2018. Stockholm: ECDC; 2018.

- Wildlife winter mass mortality incidents associated with extended winter weather including red deer mortality, oystercatcher mortality and common frog ‘Winterkill’ mortalities. Ref: Wildlife Quarterly Report, 2018, 2nd Quarter

- West Nile Virus (WNV) increase in European range of this disease to Germany. Ref: ProMED 28.08.2018.


- Large outbreak of suspected leptospirosis in humans in Israel thought to be associated with bathing in natural waters used by livestock and wild boar. Ref: Eurosurveillance (2018) 23, 38.
Record numbers of cases of suspect avian botulism in waterbirds investigated by APHA DoWS probably linked to prolonged periods of warm dry weather in the summer of 2018.

Batrachochytrium salamandrivorans (Bsal) currently absent in GB wild populations of amphibians but concern re possible BSal incursion into wild in the UK.
Ref: Fitzpatrick, L., Pasmans, F., Martel, A. & Cunningham, A. A. Epidemiological tracing of Batrachochytrium salamandrivorans in private amphibian collections identifies widespread infection and associated mortalities in Western Europe.

Calodium hepaticum, in an English hare. This is a rare parasite of the liver that very occasionally causes disease in man.
Ref: [https://veterinaryrecord.bmj.com/content/vetrec/183/5/163.1.full.pdf](https://veterinaryrecord.bmj.com/content/vetrec/183/5/163.1.full.pdf)

JP Duff, APHA DoWS

Avian Reports

Wild Bird report from the IoZ

In Q3 2018, a total of 240 DIRs involving 417 birds (214 sick/203 dead) of 34 species were reported from 175 sites from all over GB. PMEs were performed on 27 birds of 16 species from 26 sites from England, Scotland and Wales.

Finch Trichomonosis – update

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

Threat to bird health, welfare, biodiversity and cause of considerable public concern

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

Threat to bird health, welfare, biodiversity and cause of considerable public concern

In Q3 2018, a suspected diagnosis of trichomonosis was assigned to 50 DIRs, involving 51 sick and 38 dead birds from 32 sites from all over GB. Further, trichomonosis was diagnosed in 8 birds examined post-mortem, comprising four species: two chaffinches (Fringilla coelebs), three greenfinches (Chloris chloris), two goldfinches (Carduelis carduelis) and one collared dove (Streptopelia decaocto). Trichomonosis continues to be the most frequently diagnosed infectious disease as a cause of death in British garden birds.
Finch leg lesions – update

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

Threat to bird welfare and cause of public concern

Chaffinches (*Fringilla coelebs*) are the wild bird species most frequently affected by proliferative leg skin lesions (Fig 1), which have been known to occur in GB and mainland Europe for decades. A recent study (Lawson et al., 2018) found that finch leg lesions are caused by either *Fringilla coelebs* papillomavirus or *Cnemidocoptes* sp. mites and that co-infections commonly occur. Chaffinches with leg lesions are reported across GB, throughout the calendar year, however there is a clear seasonal peak from November to March, which coincides with the period when chaffinches from mainland Europe, particularly Scandinavia, overwinter in GB.

In Q3 2018 we received nine DIRs from England and Wales involving 10 finches with growths on their legs, comprising eight chaffinches, one bullfinch (*Pyrrhula pyrrhula*) and one goldfinch (*Carduelis carduelis*). One chaffinch submitted for PME was diagnosed with *Cnemidocoptes* sp. mite infection in addition to finch trichomonosis, the latter condition was considered to be the cause of death.

References


Psittacine Beak and Feather Disease (PBFD)

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

Threat to free-living ring-necked parakeet (*Psittacula krameri*) health and welfare; Potential threat to captive psittacine health
Psittacine beak and feather disease (PBFD) is well known as a cause of mortality of captive and wild psittacines around the world. A small number of cases of PBFD have been confirmed in free-living ring-necked parakeets (*Psittacula krameri*) from Greater London since 2013 (Sa et al., 2014).

A recent study examined a large number of samples from wild and captive psittacines from multiple continents, including free-living ring-necked parakeets from the UK, and explored the phylogeographic relationships of the Beak and Feather Disease Virus (BFDV) isolates obtained. Close relationships were found between genetic sequences of BFDV from wild psittacine populations across globally distinct regions, a finding consistent with multiple introduction events, likely related to trade. The study highlights the need for greater awareness of the risks of the spread of infectious disease associated with the international trade in live parrots.

In the absence of native psittacine species in GB, concern remains regarding BFDV as a biosecurity threat to captive bird collections, as ring-necked parakeets are suggested as a reservoir host. GWH continues surveillance for BFDV as limited evidence of host switching has been observed in captive passerines in Australia (Sarker et al., 2015).

**References**


https://www.gardenwildlifehealth.org/portfolio/psittacine-beak-and-feather-disease/

IoZ
Wildfowl and Wetlands Trust (WWT) report:- April – June 2018

Passive surveillance of waterbirds

*Post mortem* examinations were performed on 51 wild birds which were found dead during this quarter. These comprised 14 species across six WWT sites (Slimbridge, Gloucestershire; Arundel, West Sussex; London Wetland Centre, Greater London; Llanelli, Carmarthenshire; Martin Mere, Lancashire; Washington, Tyne and Wear). The following species were examined: mute swan *Cygnus olor* (5), greylag goose *Anser anser* (5), Canada goose *Branta canadensis* (1), common shelduck *Tadorna tadorna* (1), tufted duck *Aythya fuligula* (1), mallard *Anas platyrhynchos* (19), black-headed gull *Chroicocephalus ridibundus* (8), herring gull *Larus argentatus* (3), moorhen *Gallinula chloropus* (2), Eurasian coot *Fulica atra* (1), Eurasian crane *Grus grus* (2), ruff *Philomachus pugnax* (1), pied avocet (1) and rook *Corvus frugilegus* (1).

The primary causes of death are summarised below (Table 2). Suspected avian botulism was the main cause of mortality during this quarter, causing deaths of small numbers of black-headed gulls, shelduck, teal, ruff and over 30 mallards. The episode started in the latter part of July and went on into August, coinciding with other avian botulism episodes in other parts of the country likely related to the extremely warm and dry weather of this summer (Duff et al. 2017).

**Table 2. The primary causes of wild bird mortality (or morbidity requiring euthanasia) at WWT reserves between July and September 2018; †n denotes juvenile birds, and number of juvenile birds; *n denotes euthanased birds, and number of euthanased birds.**

<table>
<thead>
<tr>
<th>Primary cause of death</th>
<th>Total</th>
<th>Species (and notes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avian botulism</td>
<td>6++</td>
<td>6 x Mallard†¹ *‡¹ Numerous birds not submitted for PME due to condition of carcasses and scale of outbreak. In total outbreak thought to involve 33 mallard, 4 black-headed gulls, 6 shelduck, 2 teal and 1 ruff.</td>
</tr>
<tr>
<td>Parasitic infestation</td>
<td>7</td>
<td>Tapeworm: 1 x Black-headed gull†¹, 1 x Coot<em>¹, 1 x Mallard</em>¹; Acuaria: 1 x Mallard†¹, 1 x Mute swan†¹, 1 x Tufted duck; leech: 1 x Herring gull</td>
</tr>
<tr>
<td>Avian mycobacteriosis</td>
<td>5</td>
<td>2 x Mallard, 1 x Moorhen, 1 x Greylag goose, 1 x Eurasian crane</td>
</tr>
<tr>
<td>Trauma</td>
<td>4</td>
<td>2 x Mallard†¹ <em>‡¹, 1 x Herring gull, 1 x Black-headed gull</em>¹</td>
</tr>
</tbody>
</table>
### Metabolic bone disease

<table>
<thead>
<tr>
<th>Count</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1 x Eurasian crane*, 1 x Avocet†1</td>
</tr>
</tbody>
</table>

### Necrotizing enteritis

<table>
<thead>
<tr>
<th>Count</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1 x Greylag goose</td>
</tr>
</tbody>
</table>

### Renal failure

<table>
<thead>
<tr>
<th>Count</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1 x Mallard</td>
</tr>
</tbody>
</table>

### Ascites

<table>
<thead>
<tr>
<th>Count</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1 x Shelduck*1</td>
</tr>
</tbody>
</table>

### Bumblefoot

<table>
<thead>
<tr>
<th>Count</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1 x Mute swan*1</td>
</tr>
</tbody>
</table>

### Blindness

<table>
<thead>
<tr>
<th>Count</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1 x Greylag goose*1</td>
</tr>
</tbody>
</table>

### No diagnosis (due to heavy predation, decomposition or lack of gross abnormalities)

<table>
<thead>
<tr>
<th>Count</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>6 x Black-headed gull†3, 6 x Mallard<em>2, 3 x Mute swan†1, 2 x Greylag goose</em>1, 1 x Herring gull, 1 x Canada goose, 1 x Moorhen, 1 x Rook, 1 x Ruff</td>
</tr>
</tbody>
</table>

*Animals were euthanized

## Sarcocystis surveillance project

Surveillance for *Sarcocystis rileyi* in UK wildfowl recommenced in early September with the start of the wildfowl hunting season. Often called ‘rice-breast disease’, infection by sarcocystis parasites can be identified through the appearance of ‘rice-like grains’ or cysts in the muscles of wildfowl, typically in the breast tissue. Since 2015, a collaborative project between WWT, BASC, the University of Liverpool and the Royal Veterinary College has used hunter harvest as a form of ongoing surveillance for the emerging parasite *Sarcocystis rileyi*. Hunters have been able to report cases of rice-breast disease in their harvests by submitting reports to the [Sarcocystis Survey](#) website.

Since early September 2018, a total of seven cases of rice-breast disease have been reported. These occurred in three species of harvestable wildfowl: mallard (3), Eurasian teal *Anas crecca* (3), and Northern shoveler *Anas clypeata* (1). We are expecting more reports to be submitted throughout the hunting season.

Alongside providing a [Feedback Report](#) earlier this year to participants, a paper is near to submission and findings to date from this project were presented via a poster at the surveillance workshop at the European Wildlife Disease Association’s (EWDA) conference in August 2018.
Reference


WWT

Wild bird reports from Scotland

Salmonella Typhimurium ST19 (10,7,12,9,5,9,2) was isolated from two cases from the same wildlife hospital in July. The first case was a two-month-old lesser black backed gull (Larus fuscus) which had shown sinusitis, sneezing and coughing. Sinus swabs were submitted, from which the Salmonella was isolated. Mycoplasma DGGE/PCR also detected an unidentified profile which did not match standard avian mycoplasma controls. The second cases involved the acute death of seven one-month-old mute swan (Cygnus olor) cygnets several days later in a different pen, of which two were submitted for postmortem examination. Significant findings included very fluid intestinal content, enlarged and friable livers and pancreas, and petechial haemorrhages in the kidneys of one. Watery discharge was present in the infraorbital sinuses of both birds. Salmonella was isolated from the faecal sample from one bird. E. coli and Aeromonas species were also identified from tissue samples. Histopathology revealed fibrinous to fibrinogranulocytic enteritis, typhlitis and colitis consistent with bacterial infection, as well as schistosomiasis in one (thought to be incidental).

These two cases were of interest due to the importance of monitoring Salmonella levels and the emergence or disappearance of different strains of this zoonotic pathogen in various species around Britain. In addition, it is of importance to be aware of the potential for mixing and transmission of salmonellas within and between species in close contact in hospitalised wildlife.

Lead poisoning was diagnosed in an adult male white-tailed sea eagle (Haliaeetus albicilla) which was found dead on a farm on Skye. Body condition was lean, and autolysis was advanced, but the gastrointestinal tract was mostly empty despite the bird’s location near to a deer carcase. Kidney lead analysis revealed a high level, of 5.4. mg/kg FT, consistent with a diagnosis of lead poisoning (ref > 2.07 mg/kg FT). A low, background residue of DDE, a breakdown product of the persistent organochlorine insecticide DDT, was also found in the gizzard content (incidental finding).

Louping ill virus or exposure to louping ill virus was detected in various batches of red grouse (Lagopus lagopus scotica) around the country. Screening for louping ill on managed grouse moors is a common activity in the summer months in Scotland. This quarter, two clinical cases were diagnosed in Inverness-shire, and positive serology results were obtained in various other parts of the country. The clinical cases comprised one
female adult red grouse found dead, which was found to have concurrent aspergillosis and encephalitis caused by louping ill (which was detected by PCR); and an eight-week-old male red grouse, which was submitted following a sudden and dramatic drop in grouse chicks on the moor in mid-June. Louping ill virus was detected by PCR, although histopathology did not find any evidence of encephalitis – IHC was then carried out using an antibody raised against louping ill virus, which showed very positive labelling in the brain, confirming the isolation of LIV as significant despite the absence of histopathological changes. Louping ill is an OIE listed disease and is of economic concern to the viability of grouse rearing in Scotland.

Adenovirus hepatitis was diagnosed in a female pigeon (*Columba palumbus*) squab, in an area in which a number of young pigeons were found dead or in poor body condition. The bird was thin, and histopathology revealed an inclusion body hepatitis with large, solid, mostly basophilic intranuclear inclusion bodies consistent with adenovirus. Adenovirus hepatitis can cause significant morbidity and mortality in pigeons, particularly in young birds. This case was of significance due to the public alarm involved on the appearance of numerous wasted and dead pigeon squabs in the area.

**References**


Caroline Robinson, SRUC Veterinary Services

**APHA DoWS Report Wild birds**

**Summary including possible threats – Awareness, Alert and Point for information.**

**Biodiversity threat (threatened species not identified) Public concern (mortality often in public parks and press reports, requests for information to DOWS from Public Health England and City Councils.**
Selection of wild birds submitted to APHA Shrewsbury Veterinary Investigation

<table>
<thead>
<tr>
<th>Location (County)</th>
<th>Habitat</th>
<th>Species reported affected</th>
<th>Mortality (number reported)</th>
<th>Number of carcases received at APHA</th>
<th>Comments*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greater Manchester</td>
<td>Reservoir</td>
<td>Canada goose</td>
<td>60</td>
<td>5</td>
<td>Botulism suspected</td>
</tr>
<tr>
<td>Cumbria</td>
<td>Lake, on industrial site</td>
<td>Mallard, Canada goose, gull sp</td>
<td>40 ducks and geese</td>
<td>4</td>
<td>Botulism suspected</td>
</tr>
<tr>
<td>S. Yorkshire</td>
<td>Lake, town public park</td>
<td>Canada goose, Mallard duck</td>
<td>60+, mostly Mallards</td>
<td>4</td>
<td>Botulism suspected</td>
</tr>
<tr>
<td>Greater Manchester</td>
<td>Canal, marina</td>
<td>Canada goose</td>
<td>3</td>
<td>1</td>
<td>Botulism suspected</td>
</tr>
<tr>
<td>Greater Manchester</td>
<td>Lake, town public park</td>
<td>Mallard ducks, Canada goose</td>
<td>10+</td>
<td>5</td>
<td>Botulism possible</td>
</tr>
<tr>
<td>Lancashire</td>
<td>Canal, town centre</td>
<td>Mallard duck</td>
<td>12</td>
<td>1</td>
<td>Botulism possible</td>
</tr>
<tr>
<td>Norfolk</td>
<td>Lake, town public park</td>
<td>Mallard duck</td>
<td>3</td>
<td>3</td>
<td>Botulism possible</td>
</tr>
<tr>
<td>Greater Manchester</td>
<td>Town boating lake</td>
<td>Canada goose</td>
<td>10+</td>
<td>5</td>
<td>Botulism possible</td>
</tr>
<tr>
<td>Merseyside</td>
<td>Lake, city public park</td>
<td>Mallard duck</td>
<td>10 approx</td>
<td>1</td>
<td>Botulism suspected</td>
</tr>
<tr>
<td>Lancashire</td>
<td>Canal</td>
<td>Mallard duck</td>
<td>12+</td>
<td>11</td>
<td>Botulism possible</td>
</tr>
<tr>
<td>Cheshire</td>
<td>Canal</td>
<td>Feral duck, corvid sp, moorhen,</td>
<td>5</td>
<td>1</td>
<td>Botulism possible</td>
</tr>
<tr>
<td>Lancashire</td>
<td>Lake, urban</td>
<td>Canada goose, ducks, crows</td>
<td>40</td>
<td>3</td>
<td>Botulism possible</td>
</tr>
<tr>
<td>Lancashire</td>
<td>Lake, town public park</td>
<td>Mallard, Herring gull, corvid sp, moorhen,</td>
<td>10+</td>
<td>5</td>
<td>Aspergillossis suspected in Herring gull</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Botulism possible in ducks</td>
</tr>
<tr>
<td>Location</td>
<td>Area Description</td>
<td>Species</td>
<td>Number Affected</td>
<td>Observations</td>
<td></td>
</tr>
<tr>
<td>---------------</td>
<td>---------------------------</td>
<td>----------------------------------</td>
<td>-----------------</td>
<td>---------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Manchester</td>
<td>Lake, town public park</td>
<td>Mallard duck, Canada goose</td>
<td>4</td>
<td>Botulism possible</td>
<td></td>
</tr>
<tr>
<td>Oxfordshire</td>
<td>Lake (fishing)</td>
<td>Mallard ducks, coot, grebe</td>
<td>12</td>
<td>Botulism suspected from history, one swan alive</td>
<td></td>
</tr>
<tr>
<td>Lincolnshire</td>
<td>River, near town centre</td>
<td>Ducks</td>
<td>30</td>
<td>Botulism possible</td>
<td></td>
</tr>
<tr>
<td>West Midlands</td>
<td>Lake, city public park</td>
<td>Canada geese and mute swans</td>
<td>20</td>
<td>Botulism suspected</td>
<td></td>
</tr>
<tr>
<td>Cheshire</td>
<td>Lake, reserve</td>
<td>Various water birds</td>
<td>200</td>
<td>Botulism possible, and some predation</td>
<td></td>
</tr>
<tr>
<td>Norfolk</td>
<td>River</td>
<td>Mallards</td>
<td>3</td>
<td>Decomposed, botulism possible</td>
<td></td>
</tr>
<tr>
<td>South Yorkshire</td>
<td>Lake, public</td>
<td>Ducks and swans</td>
<td>6 swans, 1 duck</td>
<td>Botulism possible</td>
<td></td>
</tr>
<tr>
<td>Lancashire</td>
<td>Canal</td>
<td>Mallards</td>
<td>7</td>
<td>Decomposed, botulism possible</td>
<td></td>
</tr>
<tr>
<td>Suffolk</td>
<td>Lagoon</td>
<td>Ducks</td>
<td>12</td>
<td>Decomposed, botulism possible</td>
<td></td>
</tr>
<tr>
<td>Lancashire</td>
<td>Canal</td>
<td>Mallards, Moorhens</td>
<td>10</td>
<td>Botulism suspected</td>
<td></td>
</tr>
<tr>
<td>West Midlands</td>
<td>Lake</td>
<td>Mallards and black headed gull</td>
<td>6</td>
<td>Botulism possible</td>
<td></td>
</tr>
<tr>
<td>Lincolnshire</td>
<td>Lake, town public</td>
<td>Ducks and 1 swan</td>
<td>35</td>
<td>Botulism possible</td>
<td></td>
</tr>
<tr>
<td>Lincolnshire</td>
<td>Lake, town</td>
<td>Ducks</td>
<td>21</td>
<td>Gull, unidentified</td>
<td></td>
</tr>
<tr>
<td>Lincolnshire</td>
<td>River</td>
<td>Ducks</td>
<td>20</td>
<td>Botulism possible</td>
<td></td>
</tr>
<tr>
<td>Shropshire</td>
<td>Mere</td>
<td>Swans</td>
<td>?</td>
<td>Botulism possible</td>
<td></td>
</tr>
</tbody>
</table>

*Botulism suspected: clinical history and lack of other gross diagnosis.*
*Botulism possible: limited history and lack of other diagnoses following gross PME and laboratory tests where appropriate.

**APHA DoWS Paul Holmes, APHA Shrewsbury**

**Wild bird submissions to Shrewsbury Veterinary Investigation Centre July - September 2018 suspect botulism**

Since the start of July there have been increased reports of dead waterfowl often associated with public lakes in urban areas, canals and reservoirs where public have access. Multiple submissions have been received at APHA VICs.

Members of the public are encouraged to report the finding of dead wild waterfowl (swans, geese or ducks) or other dead wild birds such as gulls or birds of prey to the Defra Helpline, telephone 03459 335577. Some of these birds are then collected and screened for Avian Influenza virus (AIV) and postmortem examinations are carried out.

Where sick birds have been seen recently the signs described include weakness, lethargy and flaccid paralysis before death. Several have been euthanased. APHA sees cases of avian botulism in wild birds most summers however between July and October (an extended season for the disease) a record number of submissions of carcasses have been received for examination at APHA, (examples in table 1). Highly pathogenic Avian Influenza has not been detected and in the majority of cases birds have been in adequate body condition but have not been recently feeding. One submission of live birds had classical symptoms of avian botulism and avian botulism is suspected in many of the other cases.

An increase in number of cases is likely to be due to the prolonged hot, dry weather this summer which will favour botulism outbreaks. *Clostridium botulinum* is an anaerobic bacterium that multiplies in putrefying plants and animal material and is therefore often found in lakes and waterbodies in periods of anoxic conditions, poor water quality and when water levels are abnormally low. There have been several discussions with town councils, park keepers and others regarding controlling and preventing the disease.

*Clostridium botulinum* toxin Type C is considered to be responsible for most avian botulism outbreaks in the UK. It has not been reported to be associated with human disease. The risk to human health from Type C botulism is therefore considered to be very low. However, other types of botulism, and other water-borne diseases associated with stagnant or poor quality water can cause human illness and consequently consideration of precautionary principles should apply, such as not swimming or bathing in affected waters, not drinking water from lakes and waterways, and avoiding water sports in lakes / waterways where affected / dead birds have been found.
Advice about avian botulism outbreaks and their control and recognising avian botulism in waterfowl can be found in the links below:
https://veterinaryrecord.bmj.com/content/vetrec/181/1/15.full.pdf

Paul Holmes MRCVS, APHA Shrewsbury
Paul Duff, MRCVS, APHA Penrith
APHA Disease of Wildlife Scheme

Astigmatic mites infection in wood pigeons (*Columba palumbus*)

Summary including threats – point for awareness, unusual parasitic disease, unlikely to be of biodiversity interest.

Astigmatic mites (Subclass Acari) infection have been identified in a number of wood pigeons (*Columba palumbus*) that were shot but referred to a private veterinary surgeon due to the unusual lesions found. Necropsy showed numerous elongated white structures, approximately 1-2mm long. They were found in clusters in the fascia overlying the pectoral muscles (fig. 2). Grossly no there was no associated inflammatory reaction in the pectoral muscles of the birds.

On microscopic examination, the structures were classified as hypopi, with a morphology comparable to *Hypodectes propus* (fig 3). *Hypodectes propus* is generally associated with pigeons, herons, and egrets and has developed a complex parasitic relationship with its hosts by exploiting the resources of their subcutaneous adipose tissues (O’Connor, 1982). Larval stages are present in the nest and these penetrate the skin of the host after the
young birds hatch. During their sojourn within the host’s subcutaneous tissues, the larval stages (hypopi) increase 10-fold in size and become widely dispersed (Mullen and O’Connor, 2002). They persist in these tissues until the host bird matures and begins to incubate its own eggs at which stage the mature hypopi (or deutonymphs) migrate out through the skin into the nest where they continue their life cycle.

The exact source of infection for these wood pigeons is unknown. Hypopi are resting deutonymphs and because they are hormonally activated, presumably they may exist in these bird for long periods. *Hypodectes propus* infections have been previously reported in a Europe in a captive crowned pigeon, (*Goura scheepmakeri*), (Order Columbiformes) at the Copenhagen Zoo and in New Zealand in a Kereru, (*Hemiphaga novaeseelandiae*) (D.C. Sijbranda 2012).

Because the hypopi in the subcutaneous tissues are immobile, most studies indicate that these mites have little or no effect on the health of their avian hosts and should therefore be considered as an incidental finding at necropsy (Da Silva and others, 2012).

Mick Macrelli APHA Bury St Edmunds

**UK Priority and Conservation Concern Species**

**Bird reports**

Wildfowl and Wetlands Trust Translocation projects

**Project Godwit**

Following successful release of headstarted birds on the Ouse Washes in East Anglia earlier in the year as part of Project Godwit, no further surveillance is possible but there is no suggestion of disease issues impacting the project. Resightings of this year’s individually-marked headstarted birds have been reported from coastal areas of France as the birds have started migrating south towards West Africa.
Great Crane Project

Routine surveillance of faecal samples from cranes detected the presence of coccidia (*Eimeria reichenowi*) in a pair of adult cranes at the Slimbridge site. The birds did not present any signs of illness; however, a chick they were raising was euthansed due to bilateral fractures in both radius and ulna. It was suspected that those fractures were pathologic and secondary to metabolic bone disease. Histopathological analysis revealed heterophilic inflammation in a variety of organs, suggestive of infection, including the gizzard, intestine, an artery, the trachea and the long bone. The gizzard was markedly affected by the presence of inflammatory cells and penetrating yeasts (likely *Candida* sp.) and was colonised on the surface with bacteria.

Coccidia were not detected in any of the samples submitted from cranes located at the WWT Welney reserve or the RSPB reserve in Somerset.

An adult crane at the Slimbridge site was found moribund. Postmortem examination revealed avian mycobacteriosis as the main cause of death, a disease which was highlighted during the disease risk analysis.

WWT

Amphibian reports

Amphibian reports from the IoZ

In Q3 2018, we received a total of 33 disease incident reports (DIRs), involving 141 amphibians (16 sick/125 dead), reported from 27 sites from England, Scotland and Wales. The majority of reports were of anurans only: 27 DIRs involving common frogs (*Rana temporaria*) from 23 sites (14 of which had multiple mortalities), and one DIR involved two common toads (*Bufo bufo*) from a single site. Four reports involved urodeles, three dead smooth newts (*Lissotriton vulgaris*) from a single site, and 10 newts of unknown species (one sick from a single site and nine dead as part of multiple mortalities from 2 sites).

Post-mortem examinations (PMEs) were conducted on 19 amphibians, comprising: 10 common frogs from 8 sites from England; one smooth newt from England; and 8 newts of unknown species from 3 sites in England and Wales.

Chytrid fungi and ranavirus surveillance

*Batrachochytrium salamandrivorus* (Bsal); potential threat to newt health, welfare and biodiversity if Bsal becomes established in the wild in GB;

*Batrachochytrium dendrobatidis* (Bd); threat to amphibian health, welfare and potential threat to biodiversity;

Ranavirus threat to amphibian health, welfare and biodiversity
In Q3 2018, skin swabs were taken from each of the 19 amphibians examined post-mortem for real-time duplex PCR screening for Bd/Bsal, and liver samples were taken from 15 amphibians (where tissue was available) for real-time PCR for ranavirus. All samples tested negative for Bd/Bsal. Four samples tested positive for ranavirus DNA: three common frogs from two sites from England (total mortality: six and 10 common frogs, respectively), and a newt of unknown species submitted from the same site as a positive common frog (total mortality: four newts, six common frogs) from England.

Ranavirus disease is known to be widespread in England and Wales and may have an impact on amphibian biodiversity (Price et al., 2017). Ranavirus most commonly affects common frogs during the summer months, and this disease is known to cause long-term population declines at breeding ponds in this species (Teacher et al., 2010). Bd has a widespread, but highly localised, distribution across Great Britain (GB). This pathogen is the cause of amphibian population declines globally, but its impact in GB is uncertain. Bsal is considered a significant threat to native urodele species, in particular the great crested newt (Triturus cristatus), which is known to be susceptible to fatal Bsal infection. We continue to engage in heightened surveillance for Bsal as infection has been confirmed in captive amphibians in GB (Fitzpatrick et al. 2018). We remain vigilant for possible incursion of Bsal into free-living urodeles populations in GB, prioritising investigation of newt mortality incidents.

References


Toadfly (Lucilia bufonivora)

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

In July 2018, we received a single DIR involving two common toads affected by toadfly (Lucilia bufonivora) in Worcestershire, England. Toadflies are obligate parasites which lay their eggs on the back or around the nostrils of their host, typically the common toad (Bufo bufo), although other anurans are rarely affected. Toadfly larvae are parasitic and feed on host tissues typically with a fatal outcome for affected toads. Lucilia bufonivora is commonly found in North West Europe and is thought to be a native parasite of the common toad in GB. Whilst there is no evidence that toadfly adversely impacts common toad populations in Great Britain, the nature of this condition can generate public concern. A toadfly disease factsheet for the public is available on the GWH website and has been recently updated with findings from a recent study (Arias-Robledo et al., 2018) which confirmed the parasite’s identification as L. bufonivora using molecular techniques.

Reference

https://www.gardenwildlifehealth.org/portfolio/toad-fly-lucilia-bufonivora/

IoZ
CETACEANS

Predicting global killer whale population collapse from Polychlorinated biphenyl (PCB) pollution

Summary including possible threats – Action;
Major conservation concern for apex marine predators

This study used globally available data on polychlorinated biphenyl (PCB) concentrations in killer whale (Orcinus orca) tissues and an individual-based model framework to show that PCB-mediated effects on animal health, resulting in reduced fecundity and immunocompromise, threatening the long-term viability of >50% of the population worldwide. The results predict that, over the next 50-100 years, killer whale populations feeding at high trophic levels and/or inhabiting waters near industrial regions are at the high risk of collapse.

In GB, although PCBs were banned in the 1970s, evidence of extremely high PCB tissue concentrations in a stranded killer whale in 2017, alongside population data showing a lack of reproduction over the last 25 years, suggests that the British resident population of this species, currently numbering only eight individuals, may be one of the first to go extinct. Interventions to mitigate future impacts of PCBs, such as those employed in North America, where efforts have successfully led to a decline in PCB levels in humans and marine biota, are recommended to prevent a similar outcome for other killer whale populations in European waters.

Reference


IoZ