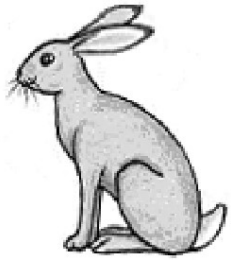

GB Wildlife Disease Surveillance Partnership quarterly report

Disease surveillance and emerging threats

Volume 24: Q1 – January-March 2019

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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:

https://www.gov.uk/government/publications/wildlife-disease-surveillance-reports-2018

Issues and trends

Paul Duff, APHA Diseases of Wildlife Scheme (DoWS)

The winter of 2017-2018 was notable for the severe weather during the last weeks of February and first week of March – termed the *Beast from the East*. The Wildlife Quarterly Report (WQR) covering this period had reports of severe effects of this weather front on wildlife. These included deaths of red deer (*Cervus elaphus*) in the Cumbrian fells, deaths of waders and shore birds and deaths of amphibians. The winter of 2018-2019 appears to have been milder with less extremes and fewer weather related wildlife mass mortality events. However, a late spring related to chilly weather has been reported. For example in the North of England, migrating swallows (*Hirundo rustica*) and house martins (*Delichon urbica*) only really arrived on the second week of May, when usually they are around traditional nest sites in mid-April.

Notifiable diseases

Avian Influenza (AI) Virus

Great Britain AI Wild Bird Surveillance (AIWBS): January-March 2019

Total wild bird surveillance

The incidence of Highly Pathogenic Avian Influenza in Europe has been much lower in 2019, compared to previous recent years. Danish authorities reported H5N6 HPAI in a white tailed eagle (*Haliaeetus albicilla*) on 14th January 2019, and in a buzzard (*Buteo buteo*) on 15th January. There have been no reports of HPAI in poultry in Denmark,

although there has been one incident of low pathogenicity avian influenza virus H5 reported on a commercial poultry holding in February 2019.

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

Surveillance activity	Number of birds tested*	Positive AI virus result and species of bird	Comments
Found dead/injured	155/*(520)*	**There were no positive cases found.**	Scanning surveillance All-year-round

*Number of birds tested: figures for January-March 2018 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 and Wales.

Warden Patrol Scheme

The main emphasis of the warden patrol scheme 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 January to 31st March 2019 (Q1-2019), a total of 413 Warden Patrols were performed at sites across GB. This compares with a total of 444 Warden Patrols performed during the same period in 2018 (Q1-2018) in GB. During Q1-2019, the Warden Patrols were mainly performed by Natural England and the Wildfowl and Wetlands Trust. Warden Patrols were also carried out by six other voluntary organisations. In total during Q1-2019, 68 wild birds were reported found dead under the Warden Patrol Scheme of which 63 were tested, with no AI detections. This compares with a total of 131 wild birds found dead of which 83 were tested during Q1-2018, with no AI detections.

In Q1-2019, Moorhens (13) were the most common target species found, and birds were most commonly found in the North West region with the lowest numbers in the Midlands and Scotland. Whooper Swans were the most common target species found in Q1-2018 (32) and birds were most commonly found in the East region with the lowest numbers in the Midlands, Scotland and Wales.

Current EU situation

The current EU and UK outbreak situation can be found here:

https://www.gov.uk/government/publications/avian-influenza-bird-flu-in-europe
APHA, in collaboration with Defra, monitors the international situation and distribution of avian influenza detections:
https://www.gov.uk/government/collections/animal-diseases-international-monitoring.

Current UK Situation

There have been no detections of HPAI in wild birds in 2019. The last detection of HPAI in a wild bird in the UK was a buzzard (Buteo buteo) found in the east of England, in April 2018.

There have also been no detections of HPAI in poultry in the UK. However, 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, the helpline number is 0300 303 8268
- In Scotland, 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:

- Avian influenza guidance: https://www.gov.uk/guidance/avian-influenza-bird-flu.
- 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://ec.europa.eu/food/sites/food/files/animals/docs/ad_control-measures_hapai_chrono_map_2019-q1.pdf
https://www.gov.uk/guidance/avian-influenza-bird-flu

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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):- January-March 2019

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

Throughout the first quarter of 2019, WWT continued its scanning surveillance of avian influenza as part of the GB AIWBS partnership. Between January and March 2019 a total of 69 wild birds were found dead on WWT sites, of which 64 were sampled for avian influenza virus. Sampled birds originated from seven WWT reserves located in the counties of Gloucestershire, Carmarthenshire, West Sussex, Greater London, Norfolk, Lancashire, and Tyne and Wear. Birds which were not sampled were unable to be swabbed due to being heavily predated or in an advanced state of decomposition.

Sampled birds represented 19 different species, of which 18 were of surveillance priority. These included swans, geese, ducks, gulls, rails, as well as a black-tailed godwit (*Limosa limosa*), a great cormorant (*Phalacrocorax carbo*), and a common kestrel (*Falco tinnunculus*). One non-priority species, a Eurasian crane *Grus grus*, was also sampled.

All samples tested negative for highly pathogenic avian influenza (HPAI) viruses. See APHA report for further details of HPAI surveillance results from across the UK.

WWT

Zoonotic diseases

APHA Diseases of Wildlife Scheme (DoWS); Salmonellosis in wildlife; January-March 2019

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

A female hedgehog (*Erinaceus europaeus*) in good bodily condition, died during hibernation at a hedgehog rescue centre. Necropsy revealed that the spleen was enlarged and small abscesses were present in the lymph nodes associated with the reproductive tract. There was bilateral distension of the uterus with a roughly circular swelling in each uterine horn approximately 6x5cm. The horns contained thick caseous pus with a firm caseous core, 4x2cm. A widely antibiotic sensitive *Salmonella* Enteritidis PT11 was isolated from the uterine contents. *S.* Enteritidis was also isolated from a male two year-old hedgehog at another site but this was isolated in a private laboratory and no further details were available. *S.* Enteritidis phage type phage type 11 is the commonest *Salmonella* spp. isolated from hedgehogs, it is common and widespread in hedgehogs in England (Keymer and others, 1991). Robinson & Routh (1999) suggest that *S*. Enteriditis phage type 11 appears to be endemic in hedgehogs.

Bird variant *S.* Typhimurium DT40 was isolated from three different horses/ponies in Devon. Bacteriology was carried out by private laboratories. There were two isolates from a 19 month-old horse sample about one week apart. Another horse on the same premises was also positive for *S.* Typhimurium DT40 but there was no information definitely linking the third case to these. These isolates were widely antibiotic sensitive.

There were no reports of bird variant *S*. Typhimurium DT56 or DT56v from domestic species.

References

Keymer, I., Gibson, E., Reynolds, D. 1991. Zoonoses and other findings in hedgehogs (*Erinaceus europaeus*): a survey of mortality and review of the literature. *The Veterinary Record* 128 (11): 245-249.

Robinson, I., and Routh, A. 1999. Veterinary care of the hedgehog. In Practice 21: 128-137.

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; 1st Quarter; January-March 2019

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

Passive surveillance for lyssaviruses in UK bats

Forty eight bats were tested for lyssavirus under passive surveillance. All were negative.

Nine zoo bats were tested in this quarter for lyssaviruses. All were negative.

Rabies diagnosis

No samples were received from quarantined animals or from humans for rabies diagnosis.

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 from 127 wild birds received from APHA Veterinary Investigation Centres (VIC), the Predatory Bird Monitoring Scheme (PBMS) and ZSL during **November 2018** representing 16 identified species of small passerines, corvids, raptors and water birds as well as one unidentified gull species were tested by TaqMan PCR for WNV during this period with negative results.

Usutu virus surveillance in wild birds SV3045

Brain and kidney samples from 115 raptors representing 8 species received during **November 2018** as part of The Predatory Bird Monitoring Scheme were tested by TaqMan PCR for Usutu virus with negative results.

WNV surveillance in Equids

One serum sample, from a horse exhibiting neurological signs, was tested for WNV by cELISA (detects both IgM and IgG) during this period with negative results.

International Trade testing - pigeons

One serum sample from a horse was tested by IgM ELISA for international trade health certification purposes with negative result.

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

Ongoing new and re-emerging diseases, unusual diagnoses and horizon scanning

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

- Migratory birds considered possible source of incursion of the tick *Hyalomma rufipes.* The tick carried *Rickettsia aeschlimannii*, a spotted fever group rickettsia linked to a number of human cases in Africa and Europe.
  Reference Hansford KM; Carter D; Gillingham EL; Hernandez-Triana LM; Chamberlain J; Cull B; McGinley L; Phipps LP; Medlock JM. 2019. *Hyalomma rufipes* on an untraveled horse: Is this the first evidence of *Hyalomma* nymphs successfully moulting in the United Kingdom? Ticks and Tick-borne Diseases 10, 704-708. https://doi.org/10.1016/j.ttbdis.2019.03.003.

- Epidemics of salmonellosis (*S*. Hessarek) in starlings (*Sturnus vulgaris*) and other wild birds, continental Europe (not UK to date) - potential threat to human and livestock health.
  Reference: Luca Gelmini et al (2009) *Salmonella* Hessarek in starling; diagnosis and molecular study of outbreak and collection isolates. Laboratory Report of IZLER, Emilia-Romagna, Italy. Further reports more recently, in publication.

- *Corynebacterium ulcerans* infection in hedgehogs, Germany. This is a zoonotic bacterium found in several domestic and wild species, including species found in Great Britain. Now toxigenic strains have been isolated from hedgehogs.
  Reference: *Veterinary Times* Hygiene warning to vets after toxigenic bacterium found in hedgehogs. Woodmansey (2019). Original publication - Berger A. et al (2019) Tox-positive Corynebacterium ulcerans in hedgehogs. Emerging Microbes and Infections 8 (1), 211-217.

- Seoul virus (SEOV), a zoonotic hanta virus was detected in 19% of brown rats trapped primarily from pig farms in Northern England.
  Reference: Murphy, EG et al. (2019) Detection of Seoul virus in wild brown rats from pig farms in Northern England. Vet Record 5th April doi:10.1136/vr.105249. Joint APHA publication.

- **Currently no vaccine for African Swine Fever (ASF).** A first report of an experimental oral vaccination for wild boar against ASF, further work apparently required to assess the safety and genetic stability of the vaccine.
  Reference: Barasona, JA. et al. (2019) First Oral Vaccination of Eurasian Wild Boar Against African Swine Fever Virus Genotype ii. Front Vet. Sci. https://doi.org/10.3389/fvets.2019.00137. https://www.frontiersin.org/articles/10.3389/fvets.2019.00137/full.

- Humans health risk from caterpillars of the brown-tail moth (*Euproctis chrysorrhoea*) reported in Central England (one report). Caterpillars have hairs containing mechanical and chemical irritants.
  Reference: ProMED April 26/04/2019 Toxic Caterpillar-UK (England).

Mammal reports

Wild mammal reports from IoZ

In Q1 2019, we received 24 DIRs involving 25 hedgehogs (3 sick/22 dead) from 18 sites from England, and Wales.

Postmortem examinations performed on 6 hedgehogs from separate sites from England and Wales in Q1 did not reveal any unusual findings.

Erinaceus coronavirus infection

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

Erinaceus coronavirus (EriCoV), a clade C *Betacoronavirus*, has been described in Western European hedgehogs (*Erinaceus europaeus*) in Germany and France. This study used an EriCoV-specific BRYT-Green® real-time reverse transcription PCR assay to test 351 samples of faeces or distal large intestinal tract contents collected from casualty or dead hedgehogs from a wide area across GB to determine whether EriCoV was present, and, if so, whether it was associated with disease in British hedgehogs. Viral RNA was detected in 10.8% of samples; however, the virus was not detected in any of the 61 samples tested from Scotland. Multivariate statistical models using hedgehog case history data, faecal specimen descriptions and post-mortem examination findings found no significant evidence of disease in association with EriCoV infection in hedgehogs. These findings indicate that, in GB, the hedgehog is likely to be a reservoir host of EriCoV.

References

Saldanha IF, Lawson B, Goharriz H, Rodriguez-Ramos Fernandez J, John SK, Fooks AR, Cunningham AA, Johnson N, Horton DL (2019) Extension of the known distribution of a novel clade C betacoronavirus in a wildlife host. *Epidemiology and Infection* **147:** e169, 1–8.

Garden Wildlife Health disease factsheet, 'Erinaceous coronavirus infection in hedgehogs': https://www.gardenwildlifehealth.org/portfolio/erinaceus-coronavirus-infection-in-hedgehogs/

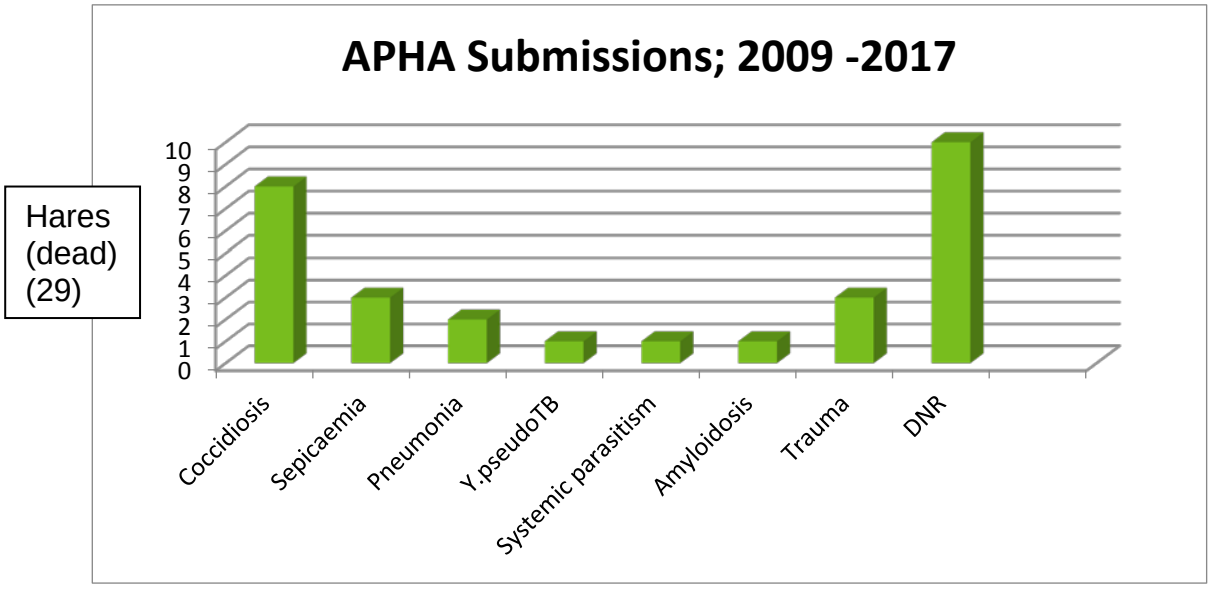
IoZ

Wild mammal reports from APHA DoWS

European brown hares (*Lepus europaeus*) examined by APHA during Autumn/Winter 2018-19

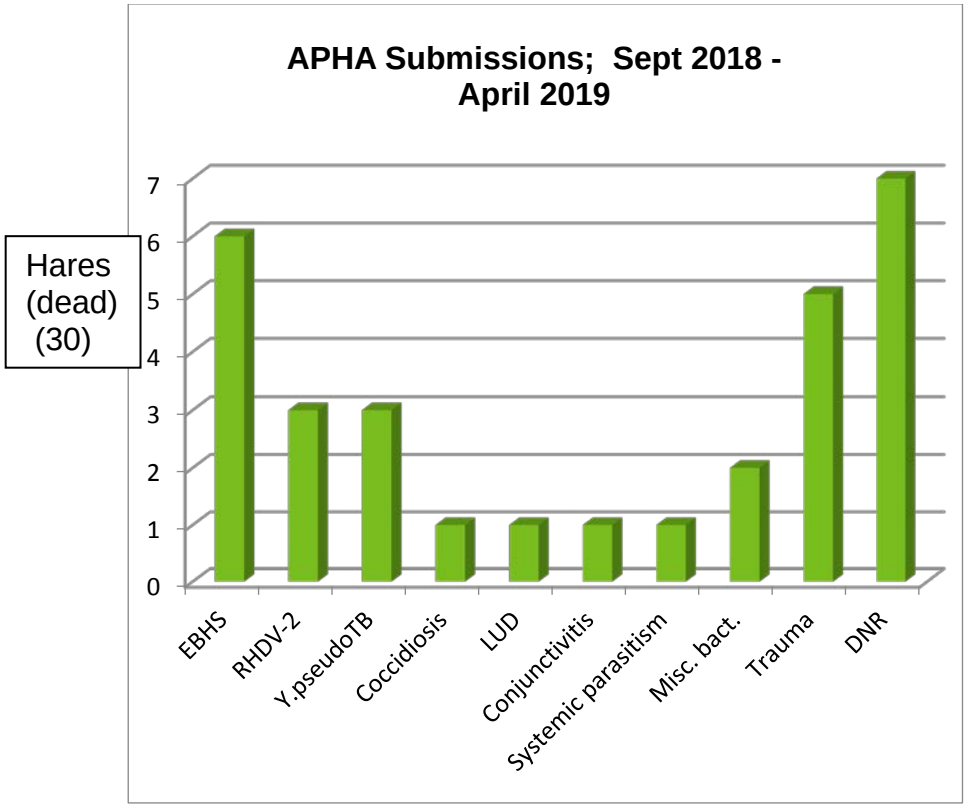
Summary including possible threats – Awareness, Alert and Point for information. Biodiversity threat, Public concern and press reporting

There have been numerous reports of hare deaths in the autumn and winter. This was initially prompted by reports of hare mortalities on TV in September with follow up by radio and in the press. This has continued for a number of months, which has led to a significant increase in hare submissions compared to previous years.



Only 29 hares were submitted in nine years from 2009-2017 with, surprisingly, no reports of European brown hare syndrome (EBHS). On such small numbers there is significant

selection bias. Also as with all wildlife submissions autolysis can cause high DNR (diagnosis not reached) figures.



In eight months autumn/winter 2018-19, APHA VICs received 30 brown hare carcases, due to the high levels of public awareness and concern. No definite conclusions can be drawn from such small numbers, although as expected rabbit haemorrhagic disease virus (RHDV-2) has now been confirmed in brown hares in UK. However many more cases of dead hares were reported than received but often no suitable carcases were available for necropsy. It has been reported that some shooting estates have cancelled hare shoots to help preserve hare numbers. No cases of myxomatosis in brown hares were identified.

Alex Barlow, APHA DoWS

PCR detection of *Anaplasma phagocytophilum*, in deer ked (*Lipoptena cervi*) a blood-sucking ectoparasite of cervids.

Summary including possible threats – Awareness, and point for information. Zoonotic disease threat and public concern

Infections with the tick-borne pathogen *Anaplasma phagocytophilum* were diagnosed in four roe deer (*Capreolus capreolus*) submitted as part of an ongoing investigation into a diarrhoea and wasting syndrome. These wild roe deer were from an estate in the south of England. No treatments or vaccination, were administered to these free-living animals. During the post mortem examination a large number of ectoparasites were detected on one of the carcases. These were identified by Public Health England's Tick Surveillance

Scheme as *Ixodes ricinus* and the deer keds (*Lipoptena cervi*). Deer keds are considered as one of the most frequently occurring blood-sucking ectoparasites of cervids in Europe.

Anaplasma phagocytophilum was detected by molecular tests from each of the spleens of the submitted four submitted deer. *A. phagocytophilum* is the causative agent of disease tick-borne fever (TBF) in domestic ruminants. The primary disease problems associated with TBF in ruminants are seen in young animals, and individuals purchased from tick-free areas and placed on tick-infested pastures for the first time.

In Europe, *A. phagocytophilum* DNA has been detected in many wild ruminant species and cervids are considered as naturally infected reservoirs of *A. phagocytophilum*. It is important to note that several recent studies strongly suggested that roe deer are not reservoir hosts for human, dog, or horse variants, nor for domestic ruminant variants. Roe deer may be involved in another epidemiological cycle, and could maintain their "own" specific variant(s).

In Europe, *A. phagocytophilum* is mainly transmitted by *Ixodes ricinus* ticks. In this investigation *A. phagocytophilum* was detected by PCR not only in the *Ixodes ricinus* but also in the deer keds (*Lipoptena cervi*) collected from the carcass. Although the presence of *A. phagocytophilum* DNA in deer keds does not prove the transmission of the pathogens, this case report underlines the potential role of these blood-sucking insects in the mechanical transmission of *A. phagocytophilum* or related pathogenic bacteria. (References can be supplied for this article on request).

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Rymaszewska,A.(2008).Divergence within the marker region of the groESL operon in Anaplasma phagocytophilum. Eur.J.Clin.Microbiol.Infect.Dis. 27, 1025–1036.doi:10.1007/s10096-008-0539-x

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Haigh J.C., Mackintosh C. & Griffin F. 2002. Viral, parasitic and prion diseases of farmed deer and bison. Rev. Sci. Tech. IOE. 21 (2): 219–248.

Kaunisto S., Kortet R., H¨ark¨onen L., H¨ark¨onen S., Yl¨onen H. & Laaksonen S. 2009. New bedding site examination-based method to analyse deer ked (Lipoptena cervi) infection in cervids. Parasitol. Res. 104: 919–925. DOI: 10.1007/s00436–008–1273–0

Michele Macrelli, APHA DoWS, Bury St Edmunds

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

Diarrhoea and wasting syndrome in roe deer (*Capreolus capreolus*)
Summary including possible threats – Awareness, and point for information.
Potential for possible public concern

APHA DoWS has for 10 years been aware of a syndrome in roe deer of wasting, usually with diarrhoea. A similar condition was seen in roe deer in France and Denmark; however, in each country the cause and aetiology have remained elusive. Discussing cases with colleagues in France they now suspect that in certain areas, deer densities and parasites (gastro-intestinal and perhaps ectoparasites) play important parts in the 'syndrome' (still to be defined in pathological terms). However, the precise relationships between these two factors and why and when these and perhaps other factors combine to cause deaths in the animals is not clear. Preliminary findings from two study areas in France were published by Body et al (2011).

DoWS are currently investigating deaths in an estate in southern England and collaborating with an investigation by the University of Bristol Veterinary School, who are also investigating roe from one area. Several dead animals have been examined from two sites in southern England. Some of the animals examined have significant endo and ectoparasite burdens, while other individuals from the same site do not appear to have significant burdens but are still in poor body condition. Examinations are still in progress and we will report again in a future WQR.

Reference

Population density and phenotypic attributes influence the level of nematode parasitism in roe deer (2011) Body, G., Ferte, H., Guillard, J-M., Delorme, D., Klein, F. and Gilot-Fromont, E. Oecologia, 167:635-646.

JP Duff, APHA DoWS

Avian Reports

Wild Bird report from the IoZ

In Q1 2019, we received 1054 Disease Incident Reports (DIRs) involving 1470 birds (1144 sick/326 dead) from 35 species and 432 sites from England, Scotland and Wales. PMEs were performed on 28 birds from 25 sites from England, Scotland and Wales.

Finch trichomonosis - update

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

- **Threat to wild bird health, welfare, biodiversity and cause of public concern**

In Q1 2019, a suspected diagnosis of trichomonosis was assigned to 100 DIRs, involving 89 sick/50 dead birds from 70 sites from England, Scotland, and Wales.

Further, trichomonosis was diagnosed in 19 birds examined post mortem from 16 sites from England. These birds comprised six species, predominantly chaffinches (*Fringilla coelebs*) (n=11), alongside several less frequently affected species, including yellowhammer (*Emberiza citrinella*), dunnock (*Prunella modularis*), and brambling (*Fringilla montifringilla*). In addition to the significant and ongoing UK greenfinch population decline that has occurred due to finch trichomonosis, this emerging disease may be an additive threat to species already of conservation concern, such as the red-listed yellowhammer (Eaton and others, 2015)**.**

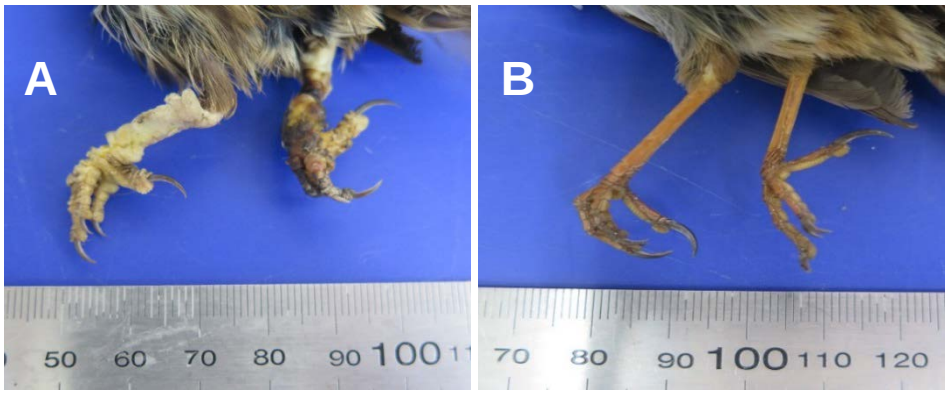
References

Eaton MA, Aebischer NJ, Brown AF, Hearn RD, Lock L, Musgrove AJ, Noble DG, Stroud DA and Gregory RD (2015) Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and Isle of Man. *British Birds* **108**, 708–746. Available online at britishbirds.co.uk/wp-content/uploads/2014/07/BoCC4.pdf

Finch leg lesions – update

- **Summary including possible threats – Point for Information (PFI);**
- **Threat to wild bird health and welfare and cause of public concern**

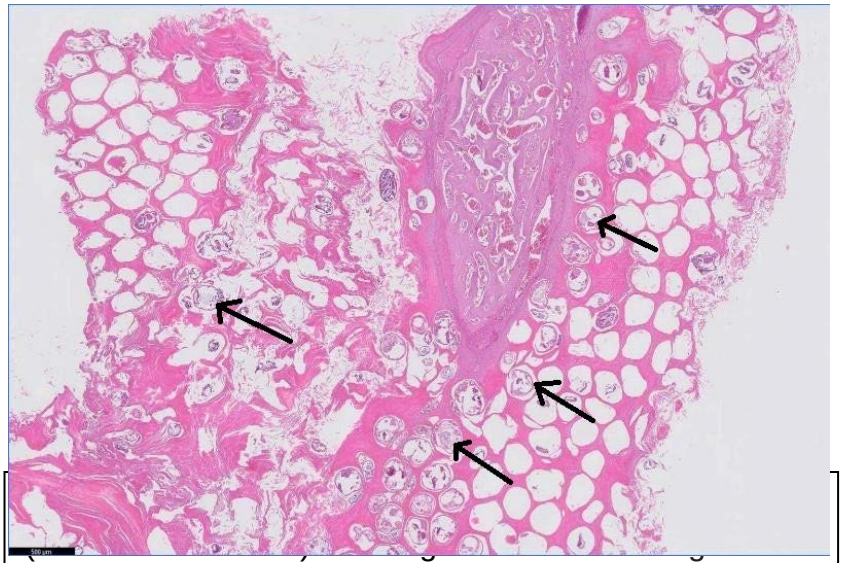
Finch leg lesions, caused either by an infection with *Cnemidocoptes* spp., *Fringilla* papillomavirus or a combination thereof, made up 49% of the total DIRs received in Q1 2019.



Whilst this condition is predominantly reported in chaffinches, especially during the winter months, we also received four DIRs from two sites involving dunnocks affected by proliferative leg skin lesions. Further, we confirmed cnemidocoptosis in a severely affected dunnock upon PME (Figure 1) and histopathological examination (Figure 2), which showed parasitic dermatitis

Figure 1: (A) Dunnock (*Prunella modularis*) with severe leg lesions caused by *Cnemidocoptes* spp. in a in comparison with **(B)** a dunnock with normal unaffected legs.

caused by *Cnemidocoptes* sp. with a secondary bacterial infection. No changes suggestive of viral cytopathic effects to indicate underlying viral infection were observed.



stratum corneum (hyperkeratosis) with multifocal abundant sections of parasites (consistent with *Cnemidocoptes* sp., black arrows). Image courtesy of IDEXX.

Reports of dunnocks with leg lesions are usually associated with avian pox, which typically causes small nodular wart-like growths on the legs or head of this species; however, these recent findings highlight that *Cnemidocoptes* spp. infection should be considered as a differential diagnosis for reports of leg lesions in dunnocks. To date, disease progression of cnemidocoptosis in wild birds is poorly understood (Lawson and others, 2018), however, in severe cases the bird might become more susceptible to trauma/predation, entanglement or other infections..

References

Lawson B, Robinson RA, Fernandez JR, John SK, Benitez L, Tolf C, Risely K, Toms MP, Cunningham AA, Williams RA (2018) Spatio-temporal dynamics and aetiology of proliferative leg skin lesions in wild British finches. *Scientific Reports* **8(**1):14670

IoZ

Wildfowl and Wetlands Trust (WWT) report:- January- March 2019

Passive surveillance of waterbirds

Post mortem examinations were performed on 57 wild birds found dead during this quarter. These comprised 21 species from seven WWT sites (Slimbridge, Gloucestershire; Arundel, West Sussex; London Wetland Centre, Greater London; Llanelli, Camarthenshire; Martin Mere, Lancashire; Washington, Tyne and Wear; Welney, Cambridgeshire). The following species were examined: whooper swan *Cygnus cygnus* (6), mute swan *Cygnus olor* (3), greylag goose *Anser anser* (1), pink-footed goose *Anser brachyrhynchus* (2), common shelduck *Tadorna tadorna* (5), mallard *Anas platyrhynchos* (4), Eurasian teal *Anas crecca* (1), pintail *Anas acuta* (2), wigeon *Mareca penelope* (1), common pochard *Aythya ferina* (2), moorhen *Gallinula chloropus* (12), Eurasian coot *Fulica atra* (6), waterail *Rallus aquaticus* (1), black-headed gull *Chroicocephalus*

ridibundus (3), European herring gull *Larus argentatus* (2), Eurasian crane *Grus grus* (1), black-tailed godwit (1), cormorant (1), common kestrel (1), Eurasian jackdaw *Corvus monedula* (1) and common pigeon *Columba livia* (1). The primary causes of death are summarised below (Table 1).

Trauma was the main cause of mortality, diagnosed in 46% of casualties (26/57). Causes of trauma included predation (7 cases) and drowning (2 cases). Other forms of traumatic injury, including suspected intra- or inter-species aggression, were identified in a number of moorhen (5), coot (2) and four *Anatidae* species.

Avian mycobacteriosis was the probable cause of death in 11% (6/57) of birds, from across three WWT centres. A black-tailed godwit from Martin Mere was found to have pneumonia and gastroenteritis, the cause of which could not be determined, and a Eurasian crane from Slimbridge was too decomposed for meaningful *post mortem* examination.

Primary cause of death	Total	Species (and notes)
Trauma:		
Predated	7	1 x shelduck, 2 x whooper swan, 1 x jackdaw, 2 x moorhen, 1 x mallard
Drowned	2	1 x cormorant, 1 x shelduck
Other	17	1 x wigeon, 5 x moorhen†1, 1 x pintail, 1 x pochard, 1 x whooper swan, 1 x mute swan†1, 2 x coot, 1 x Eurasian teal, 1 x pigeon, 1 x black headed gull, 1 x waterail, 1 x herring gull†1
Euthanasia	2	1 x coot†1*1, 1 x mallard
Renal failure	2	1 x black-headed gull, 1 x coot
Aspergillosis	1	1 x whooper swan†1
Cardiac failure	1	1 x whooper swan
Air sacculitis	1	1 x whooper swan
Pulmonary disease (other)	1	1 x pochard
Septicaemia	1	1 x mallard
Other	4	1 x black-tailed godwit, 1 x shelduck, 1 x mute swan, 1 x coot

No diagnosis (due to heavy predation, decomposition or lack of gross abnormalities)	12	1 x greylag goose, 1 x coot, 1 x mute swan†1, 3 x moorhen, 1 x shelduck, 1 x black headed gull†1, 1 x Eurasian crane, 1 x herring gull†1, 1 x mallard, 1 x kestrel

The primary suspected causes of wild bird mortality (or morbidity requiring euthanasia) at WWT reserves between January and March 2019; †n denotes juvenile birds, and number of juvenile birds; *n denotes euthanased birds, and number of euthanased birds.

Sarcocystis surveillance project

Surveillance of the parasite *Sarcocystis rileyi* in UK wildfowl continued throughout the beginning of this quarter until the end of the wildfowl shooting season. A total of 20 reports of sarcocystosis-like lesions in wildfowl breast tissue, also known as rice-breast disease, were submitted by members of the shooting community to the Sarcocystis Survey website. These comprised five species of harvestable wildfowl, namely mallard (10), wigeon (5), teal (3), pintail (1), and gadwall *Anas strepera* (1). As with previous quarters, there was a higher proportion of male (80%) compared with female (20%) birds. It is not possible to determine whether this is sex predilection for the parasite or a reflection of the hunting bag.

The submissions from this quarter bring the total number of reports for the 2018-2019 hunting season to 61, an increase on the 2017-2018 winter hunting season which had a total of 51 reports submitted. The nature of the reporting does not allow us to know whether the increase reflects continued increase in prevalence of the infection or greater awareness of the reporting mechanism. An updated feedback report is being produced currently which will be distributed among members of the hunting community and via the Sarcocystis Survey website.

WWT

UK Priority and Conservation Concern Species

Amphibian reports

Amphibian reports from the IoZ

In Q1 2019, a total of 48 disease incident reports (DIRs), involving 207 amphibians (16 sick/191 dead) were reported from 39 sites from England, Scotland and Wales. The majority of reports were of anurans only: 35 DIRs involving common frogs (*Rana temporaria*) from 30 sites (28 of which had multiple mortalities) and nine DIRs involving common toads (*Bufo bufo*) from five separate sites (all of which had multiple mortalities).

Four reports involved urodeles: three DIRs involving smooth newts (*Lissotriton vulgaris*) from separate sites, and one DIR involving one newt of unknown species.

Postmortem examinations were conducted on 10 amphibians from seven sites from England and Scotland, comprising seven common frogs, two common toads and one newt of unknown species.

Unusual anuran breeding season

- **Summary including possible threats – Point for Information (PFI);**
- **Public concern, potential threat to biodiversity**

Anecdotal reports from members of the public suggest that the amount of common frog and common toad spawn sighted in ponds across Great Britain (GB) was very low in Q1 (Froglife, 2019 e-newsletter). Although the scale of, and reasons for, this are unclear, it is theorised that the mild winter may have led to early/intermittent emergence of amphibians from hibernation and depletion of energy reserves required for breeding.

IoZ have received a lower than average (n=91, taken across 2014-2018) number of amphibian DIRs in Q1 (n=52, 2019) which likely reflects this reduced breeding activity. Postmortem examinations resulting from a subset of these reports did not reveal any unusual findings.

References

Froglife monthly e-newsletter. Issue 52, April 2019: https://mailchi.mp/b5b09dcf3886/hccfo2ya17-2980125?e=c6ec741dd5

Chytrid fungi surveillance – update and new paper

- ***Batrachochytrium salamandrivorans* (Bsal); threat to urodele health, welfare and biodiversity if Bsal becomes established in the wild in GB;**

A recent study by Cunningham and others (2019) found 2409 skin swabs, obtained from wild newts from ponds across the United Kingdom in 2011, to be negative for Bsal by qPCR testing. Modelling of these data suggests that Bsal was absent from, or present at very low levels in, these ponds at the time of sampling. Samples collected at post-mortem examination for surveillance of newt mortality incidents, 2013-2018 inclusive, also tested negative. Since Bsal is known to be present amongst captive amphibians in Great Britain (Fitzpatrick and others, 2018), there is an urgent need to raise awareness of the importance of effective biosecurity measures. Also, continued surveillance of amphibian, particularly urodele, mortality events is required to provide an early warning system for Bsal incursion.

References

Cunningham AA, Smith F, McKinley TJ, Perkins M, Fitzpatrick LD, Wright OW, Lawson B (2019) Apparent absence of *Batrachochytrium salamandrivorans* in wild urodeles in the United Kingdom. *Scientific Reports* **9**:2831.

Fitzpatrick LD, Pasmans F, Martel A, Cunningham AA (2018) Epidemiological tracing of *Batrachochytrium salamandrivorans* widespread infection and associated mortalities in private amphibian collections. *Scientific Reports,* **8** 13845.

IoZ

The material in this report has been compiled by the Animal and Plant Health Agency (APHA) Surveillance Intelligence Unit in collaboration with the APHA Surveillance and Laboratory Services Department.

The report is available on GOV.UK at https://www.gov.uk/government/collections/animal-disease-surveillance-reports.

Any enquiries regarding this report should be sent to APHA's Surveillance Intelligence Unit by emailing SIU@apha.gsi.gov.uk.

More information about scanning surveillance reports is available on APHA's Vet Gateway at http://apha.defra.gov.uk/vet-gateway/surveillance/index.htm.

APHA is an executive agency of the Department for Environment, Food & Rural Affairs, and also works on behalf of the Scottish Government and Welsh Government.