GB Wildlife Disease Surveillance Partnership

Quarterly Report: SECOND QUARTER– Volume 16.2

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INTRODUCTION

The GB Wildlife Disease Surveillance Partnership comprising the Animal Health & Veterinary Laboratories Agency (AHVLA), Scottish Agricultural College Consulting (SAC Consulting), Institute of Zoology (IoZ), the National Wildlife Management Centre at AHVLA, the Centre for Environment, Fisheries and Aquaculture (CEFAS), the Wildfowl and Wetlands Trust (WWT), Natural England (NE) and the Forestry Commission England (FCE); produces the GB Wildlife Disease Surveillance Partnership Quarterly Reports. The details of the individual partners’ areas of surveillance and research can be found at: - http://www.defra.gov.uk/ahvla-en/files/pub-gbwsp.pdf

NOTIFIABLE DISEASES

Wildfowl and Wetlands Trust’s (WWT) role in GB Avian Influenza Wild Bird Surveillance (AIWBS): April - June 2014

As part of the GB AIWBS, WWT conducted at least weekly patrols of its eight GB wetland reserves. Some 28 dead birds of 11 species were reported from 6/8 reserves (mute swan Cygnus olor (5), whooper swan Cygnus cygnus (2), greylag goose Anser anser (1), Canada goose Branta canadensis (2), mallard Anas platyrhynchos (9), common shelduck Tadorna tadorina (2), tufted duck Aythya fuligula (1), coot Fulica atra (1), moorhen Gallinula chloropus (2), black-headed gull Chroicocephalus ridibundus (2), common tern Sterna hirundo (1; however, not a priority species). Cloacal and buccal swabs from all birds were submitted to AHVLA Weybridge for virological examination. No AIVs were found.

WWT Slimbridge

Great Britain AI Wild Bird Surveillance (AIWBS): April - June 2014

H5N1 Highly Pathogenic Notifiable Avian Influenza (HPNAI) was not detected from any of the 85 found dead wild birds tested in Great Britain (GB) during the quarter, and infection with other influenza A viruses was also not identified (Table 1). Investigations also included wild bird mass mortality incidents (five or more wild birds of any species at any location in GB); for example losses of Mute swan cygnets (Cygnus olor) and mortality of juvenile Starlings (Sturnus vulgaris). The last detection of H5N1 HPNAI in wild birds in GB was during January-February 2008, from ten Mute swans (Cygnus olor) and one Canada goose (Branta canadensis) in South Dorset (Defra 2008).

Table 1: Number of wild birds tested and results in GB – 2nd 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</td>
<td>85 (184)</td>
<td>Nil</td>
<td>Scanning surveillance, all-year-round, including Warden Patrols.</td>
</tr>
</tbody>
</table>

* Number of birds tested: figures for April - June 2013 are shown in brackets.

During October 2010 Defra revised AIWBS approaches in GB following changes to European Commission guidelines. The main emphasis is on AIWBS in found dead wild birds, including mass mortality incidents, and patrols of designated reserves by skilled wild bird ecologists and wardens. These Warden Patrols continue all-year-round, but are also seasonally targeted in the winter and spring periods (October to March) each year.

During the period 01 April to 30 June 2014 (Q2-2014), 143 Warden Patrols were performed at different sites across GB, principally by the Wildfowl and Wetlands Trust (n=132), with a further eleven patrols performed by three other organisations. Overall, the numbers of Warden Patrols were greatest in Wales (29), South East England (27) and Scotland (26). In total, 23 wild birds were found dead and tested, all with negative AI results. Compared with same period last year this is nearly the same number of patrols.
(140) performed and wild birds found dead and tested (20). During Q2-2014 wild birds were most commonly found by Warden Patrols in the South East and South West regions of England (20/23 found) and Mallard ducks (*Anas platyrhynchos*) were the most common wild bird species (7/23) found dead and tested.

Members of the public are also asked to remain vigilant for mass mortality incidents and report these to the **Defra Helpline: 03459 33 55 77** or **08459 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. Further information is available at:


**Horizon-scanning**

AHVLA, in collaboration with Defra, monitors the international situation and distribution of avian influenza detections: [http://www.defra.gov.uk/animal-diseases/monitoring/poa/](http://www.defra.gov.uk/animal-diseases/monitoring/poa/). As a result, Defra currently considers there is an ongoing, low risk of introduction of notifiable avian influenza to the UK via a number of routes, including wild birds (Defra, 2013). The importance for all poultry keepers to maintain robust biosecurity measures, vigilance for clinical signs of disease and to promptly report suspect cases of avian notifiable disease remains undiminished. Other avian influenza and Newcastle disease/PPMV-1 events, including H5N1 HPNAI internationally, are summarised in previous GB Wildlife Disease Surveillance Partnership quarterly reports: [http://www.defra.gov.uk/ahvla-en/publication/wildlife-survreports/](http://www.defra.gov.uk/ahvla-en/publication/wildlife-survreports/)

**References**


Avian Virology, AHVLA Weybridge

**ZOONOTIC DISEASES**

**Salmonellosis in wildlife AHVLA Diseases of Wildlife Scheme**

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. *Salmonella* Enteritidis phage type 11 was isolated from the lung of an adult hedgehog, (*Erinaceus europaeus*). This animal was found stretched out and reluctant to move in a small field in the Midlands. It was taken to a local vet and euthanased on humane grounds. *S. Enteritidis* phage type 11 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.

*S. Typhimurium* Copenhagen phage type 40 was isolated in systemic distribution from carcases of 15 day-old and 12 week-old pheasants on the same premises. It was also from a seven-day-old pheasant chick on another game farm. This Salmonella variant is associated with wild birds and pigeons. There were no isolations of other bird variant *S. Typhimurium* DT40, from wildlife or domestic species during the quarter. It is suggested that host adapted salmonellae from garden birds may be a source of infection for domesticated species.

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

AHVLA Langford

Rabies and West Nile Virus surveillance

Passive surveillance for lyssaviruses in UK bats
Sixty five wild bat and 10 zoo bat carcasses were tested at AHVLA in this quarter for lyssaviruses. All samples tested 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. One Raccoon as a potential import to a zoo in Northern Ireland, which had died in quarantine, was tested for lyssaviruses with negative results. One cat which was euthanased following human bite/scratch contact tested negative for lyssaviruses. Two dogs which were illegally imported into UK as well as 2 dogs which had died in Quarantine were also negative for lyssaviruses.

WNV surveillance in wild birds SV3045
West Nile Virus (WNV) surveillance in dead birds re-commenced in April, to coincide with candidate vector activity season. Brain and kidney tissues from 90 wild birds representing 24 species received between 1st April and 30th June from AHVLA regional laboratories, SAC and from The Institute of Zoology garden bird health project were tested by real time RT-PCR for West Nile virus with Negative results. Two of those birds, submitted during investigations into a mass die off of Rooks and Magpies, were also tested by real time RT-PCR for Usutu virus with negative results.

West Nile virus surveillance in Equids
Between April 1st and June 30th 2014, no equine serum samples were submitted for WNV serology.

Wildlife Zoonoses and Vector Borne Diseases Research Group, AHVLA Weybridge

EMERGING AND ENDEMIC DISEASES

Wild bird report from the IoZ

Atypical presentation of finch trichomonosis
In December 2013, wildlife vets from SAC Consulting and IoZ independently reported an atypical presentation of finch trichomonosis. Both centres described greenfinches (Chloris chloris) with characteristic clinical signs of regurgitation and lethargy, which subsequently died. Samples taken from the oesophagus cultured positive for trichomonad organisms but on gross post-mortem examination these birds had only very mild reddening in the gullet rather than the severe necrotic ingluvitis lesions frequently observed in this emerging infectious disease. No other macroscopic lesions were noted and routine microbiological examination of the oesophagus, liver and small intestinal contents yielded no significant organisms.
During this quarter, these atypical cases were analysed histologically at IoZ for the first time. Oesophageal tissue from one chaffinch (Fringilla coelebs) and one greenfinch from different incidents was examined and suspected trichomonads could be seen invading the deeper layers of the oesophageal mucosa associated with an acute inflammatory reaction (See Figure 1). This may signify that the trichomonad infection was indeed clinical (i.e. trichomonosis) rather than subclinical (i.e. trichomoniasis) in these birds.
This atypical presentation may be due to increased virulence of the parasite, diminished immunity in the host or some other factor. Genomic comparison of *Trichomonas gallinae* parasite strains from both presentations may be informative in this regard. Investigating the potential for subclinical carriage of trichomonads in finches is of interest since migratory chaffinches were identified as the most likely route of spread of Finch trichomonosis from Britain to southern Fennoscandia in 2008 (Lawson and others, 2011).

**References**


**Chlamydiosis in garden birds**

The following paper was published this quarter:


In this study we examined tissues from garden bird carcasses received from 38 mortality incidents (2005-2011) in which chlamydiosis was suspected based on post mortem findings and/or species composition. Tissues were tested for *Chlamydia psittaci* infection using PCR and microarray assays. Twenty-one of 40 birds tested positive for *C. psittaci*: 8 dunnocks (*Prunella modularis*), 7 great tits (*Parus major*), 3 blue tits (*Cyanistes caeruleus*), 2 collared doves (*Streptopelia decaocto*) and 1 robin (*Erithacus rubecula*). Chlamydiosis was diagnosed in ten of the positive cases through histology and immunohistochemistry. Eight of these positive cases were passerines, received from seven separate mortality incidents, adding to eight previously confirmed incidents associated with chlamydiosis in small passerines in Britain (Simpson & Bevan, 1989; Pennycott et al., 2009; Colvile et al., 2012). The results indicate that chlamydiosis has previously been underdiagnosed as a cause of small passerine mortality and that it might be an endemic disease of passerines in Britain. The positive passerine cases were found to be infected with *C. psittaci* genotype A; the sub-genotype was determined to be A-VS1 in 11 cases and A-6BC in 4 cases. Two collared doves were infected with *C. psittaci* genotype E. *Chlamydia psittaci* genotype A was identified in all four genotyped cases in a recent outbreak of human psittacosis in southern Sweden (that affected at least 25 people), in which wild passerines were implicated as the source of infection (Rehn et al., 2013). The identification of *C. psittaci*
genotype A in passerines in the current study supports wild passerines as a potential source of human infection. Although the overall risk of \textit{C. psittaci} transmission from wild birds to humans is likely to be low, considering that over 12 million households provide supplementary food for garden birds in Britain (Davies et al., 2009), it is important to determine the prevalence of subclinical \textit{C. psittaci} carriage in wild passerines in order to understand the risks of zoonotic transmission. Wild passerines may be a source of \textit{C. psittaci} zoonotic infection, and people should be advised to take appropriate hygiene precautions when handling bird feeders or wild birds. A Garden Wildlife Health disease factsheet for the general public, providing practical guidance on hygiene precautions, is available on the www.gardenwildlifehealth.org website.

References


IoZ

\textbf{Wildfowl and Wetlands Trust (WWT) report January– March 2014}

\textbf{Passive surveillance of waterbirds}

Between April and June 2014, 30 wild birds of 14 species from three WWT sites (Slimbridge, Gloucestershire; Martin Mere, Lancashire; Arundel; West Sussex), were submitted for \textit{post mortem} examination. The species examined were: mute swan (4), whooper swan (1), Canada goose (1), greylag goose (1), mallard (8), tufted duck (1), gadwall \textit{Anas strepera} (1), common shelduck (3), coot (1), moorhen (2), pheasant \textit{Phasianus colchicus} (1), black-headed gull (3), common tern (1) and rook \textit{Corvus frugilegus} (2).

The majority of deaths (40% (12/30)) were caused by traumatic injuries: half of these were mallards, four of which were females which died following forced copulation (relatively common for this species during the spring). One male mallard was victim of a road traffic accident and another had suffered cerebral haemorrhages of unknown causes; a common tern and a moorhen also died of cerebral haemorrhages of unknown cause. A coot and a one year old mute swan both drowned, the swan by trapping its head underwater. A gadwall was euthanased after being found with a fractured ulna and radius, most likely from a flying accident. One tufted duck was found predated.

Infectious diseases were responsible for (or likely to be involved in) a third (10/30) of deaths. Two common shelducks died of duck virus enteritis at WWT Slimbridge (a typical time of year for an outbreak), a juvenile greylag goose died as a consequence of an intestinal amidostomum infestation, a black-headed gull died of necrotic enteritis, a mallard of septicemia and a mute swan was euthanased due to aspergillosis. Avian mycobacteriosis was the cause of death in a mute swan (following euthanasia), a mallard, a moorhen and a rook. Lead poisoning was responsible for the death of a mute swan and a Canada goose (euthanased), two and 46 lead shot pellets were found in their gizzards respectively.

Other deaths included visceral gout in a whooper swan, a black-headed gull and a pheasant; the latter had a large number of Heterakis spp. in its caeca. A black-headed gull died of renal failure and a shelduck died due to a prolapsed cloaca. The cause of death in one rook could not be diagnosed.

\textit{WWT Slimbridge}
Great Crane Project
2014 is the final year of the planned five years of releases of Eurasian cranes to the South West of England as part of the Great Crane Project [http://www.thegreatcraneproject.org.uk/]. In April, some 24 eggs were imported under licence from Germany to the Balai-approved biosecure facility at WWT Slimbridge. Of these, 22 hatched successfully with one egg addled on arrival and another dead in shell for which the cause of death could not be determined (but was negative for PMV, NDV and AI, “bacteria” including Salmonella and yeast).

Although not a condition of the import licence, all birds were screened within the first 10 days of life for PMV, NDV and AI and were found to be negative.

From monthly faecal screenings during the rearing period (to date):
1. Up to 5/22 birds at any one time were positive for Campylobacter spp. (a typical infection from previous rearing years)
2. A small number of birds (2) had a “few” Trichostrongylus spp., with all chicks having Trichuris spp. when ~6-8 weeks of age
3. Pooled samples from each of the four rearing units were negative for Chlamydia spp. (tested at one time period only).

None of the above resulted in apparent clinical consequences.

During the rearing period two chicks were ultimately euthansed due to leg problems (one developmental and one due to traumatic injury and a fractured tibiotarsus).

Birds are due to be released following pre-release health screening and fitting of tracking devices at the beginning of August.

Survival in the wild continues to be good and birds from the first year of release (2010) bred successfully at WWT Slimbridge in May but ultimately both chicks were predated. Other breeding attempts in less well observed locations in both Somerset and Gloucestershire likely occurred also.

**WWT Slimbridge**

*Brucella ceti* in a short-beaked common dolphin (*Delphinus delphis*)

A potential case of *Brucella ceti* infection was found in a short-beaked common dolphin that stranded in Freshwater West in Pembrokeshire, Wales on 21st February 2014. The dolphin appeared to have stranded alive and had a possible vegetative endocarditis. *Brucella ceti* was isolated from the lung and its identity confirmed by AHVLA Weybridge. This case is pending follow up histopathology, although this may be affected by the animal having been frozen prior to examination. *Brucella ceti* infection has been previously recorded in a small number of short-beaked common dolphins found stranded in the UK (Davison et al. 2013; CSIP database).

**References**


Bottlenose dolphin (*Tursiops truncatus*) asphyxia

A 3.34m adult male bottlenose dolphin (national reference SW2014/135) was reported stranded on 3rd May at Hell’s Mouth in Gwynedd, Wales. A CSIP team from ZSL and Marine Environmental Monitoring (MEM) carried out a field necropsy on 6th May and found that it was in good nutritional condition, had worn teeth and had probably live stranded prior to death. The cardiac (first) stomach was distended with a large amount of recently ingested flatfish and a nearly intact flatfish was also found lodged within the inner part of the nasal cavity (right hand image below), completely blocking the airspace, which would have effectively prevented breathing. This unusual finding was considered to be the most significant during the post-mortem examination and the provisional cause of death has been given as “asphyxiation, foreign body in nasal cavity/larynx (flatfish)”.

References
Common dormouse (*Muscardinus avellanarius*) disease surveillance

There was a recent release of (40) dormice in the Midlands, as part of a long-term reintroduction project co-ordinated by the People’s Trust for Endangered Species. Seventeen of these dormice were held in quarantine at ZSL for 6 weeks prior to release, where they underwent faecal parasite screening and health checks.

IoZ