

Situation Assessment

Update on Chronic Wasting Disease in Europe

25 April 2018

Ref: CWD and atypical CWD in Europe

Disease report

In March 2016, the cervid Transmissible Spongiform Encephalopathy (TSE), or Chronic Wasting Disease (CWD) was reported in reindeer in Europe for the first time with a case in Norway. The source of infection and time and route of incursion is not known. This is an update on the surveillance results in Norway and also includes an assessment of the first case of an atypical TSE/CWD case reported in Finland. There have been no detections of CWD in Europe outside Norway and Finland to date and no cases of cervid TSEs in the UK. This report is to inform readers of the ongoing likelihood of more CWD cases in Europe and also the risks to the UK. Attention is also drawn to a forthcoming paper documenting detection of prion disease in camels in Algeria. This demonstrates the need for ongoing awareness of TSEs in other livestock species in different parts of the world.

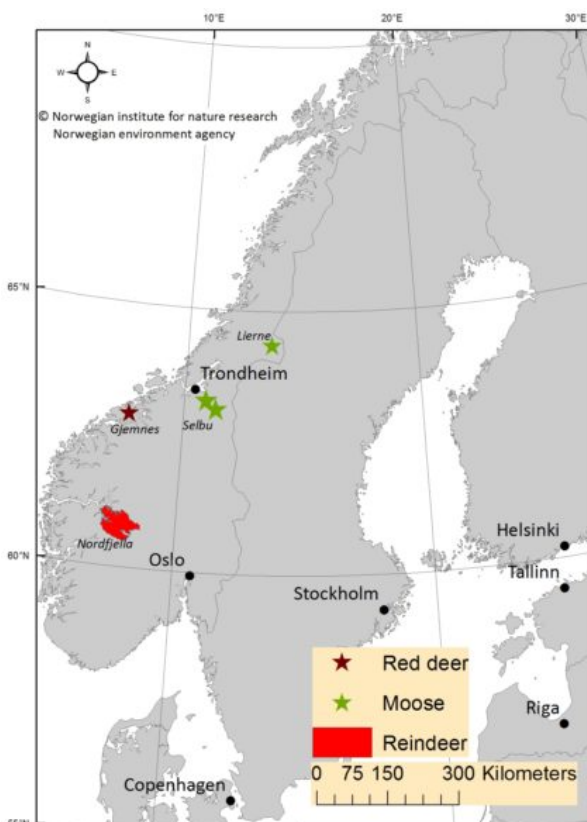
Situation assessment

CWD in Norway

Map from the Norwegian Wildlife Disease Portal (Anon, 2018a). CWD was first diagnosed in Europe in March 2016 in a wild reindeer (*Rangifer tarandus tarandus*) from the Nordfjella mountain area in Norway (see map).

In May and June 2016 prion protein infection was diagnosed in two moose (*Alces alces*) in Selbu in South Trøndelag county, approximately 300 km north from the first case (Norwegian Veterinary Institute 2017) and a further moose and red deer also tested positive in 2017.

From 2016 to April 2018, 41,125 cervids (across four species; reindeer, red deer (*Cervus elaphus atlanticus*), roe deer (*Capreolus capreolus*) and moose (*Alces alces*) in Norway have been analysed for CWD (Anon 2018a) and TSE infection was detected in 19 free-ranging



reindeer, three moose and one red deer. The reindeer cases show similar histopathology to CWD seen in North America with similar tissue distribution however the cases in the moose and red deer, all of which were older animals, show limited nervous tissue distribution of prion protein, suggesting an atypical, spontaneous mutation and therefore this may not be CWD, but a genetic variant, which could be termed atypical CWD.

Surveillance and efforts to eradicate CWD in Norwegian free-ranging reindeer are proceeding. The cull of reindeer in the area around the first case began in 2017 and has now been completed. In addition, surveillance in the other cervid species of culled animals, shot animals and animals killed in road accidents has been taking place.

TSE detected in Finland

A moose (European Elk, *Alces alces*) has tested positive for prion disease for the first time in Finland (Finnish Food Safety Authority 2018). The disease was diagnosed in Kuhmo (Kainuu region) close to the Russian border of eastern Finland, in a 15-year old animal that had died naturally. The results of the analyses carried out by Finnish Food Safety Authority (Evira) have been verified by the EU reference laboratory (APHA).

In Finland, surveillance for CWD started in 2003 when concerns about CWD were first highlighted to the European Commission. None of the ~2,500 samples analysed to date (until this animal) had tested positive for the disease, suggesting the prevalence is very low. Monitoring for CWD was intensified from the beginning of 2018 in Finland along with five other EU Member States. Monitoring will now be further intensified in the Kuhmo and Kainuu region. Hunters are to be provided with instructions before the start of the next hunting season. As a precaution Finland is suspending exports of live deer, including reindeer. Such exports are minimal, although semi-domesticated reindeer do roam freely over the borders between northern Finland, Sweden and Norway.

The strain of TSE in the Finland moose was not the North American, highly contagious form of CWD and resembled the form of cervid TSE (atypical CWD) diagnosed in Norway, which appears to be found incidentally in individual animals of the deer family.

Camel TSE in Algeria

Babelhadj et al. (2018) have detected a prion disease in dromedary camels (*Camelus dromedarius*) in south-eastern Algeria. Clinical signs suggesting prion disease occurred in 3.1% of camels brought for slaughter in 2015-16. The disease was only observed in animals >8 years of age. The authors highlight the concern that the dromedary camel is a geographically widespread livestock species in Africa, the Middle East and parts of Asia where they are a means of subsistence for millions of families. The presence of prion disease in camels extends the spectrum of species naturally susceptible. The origin is unknown at present and epidemiological studies may be confounded by the nomadic herding practices. They conclude an assessment of the risks to human and animal health is urgently required.

Conclusion

The route of incursion of CWD into Norway is not clear. There is some suggestion that the atypical form of cervid TSE is less transmissible than CWD present in North America and which is transmitted through the environment. The prevalence in cervids in Scandinavia is very low with 1 in 2,500 cervids (0.04%) in Finland and 23 in 41,125 cervids (0.05%) in Norway. It is possible that more cases may be detected in Norway as testing on the last culled animals is finalised, while the case in Finland may not lead to more further detections, if this proves to be an atypical cases with little transmissibility. Since live reindeer are not imported into the UK, it is assessed that the overall risk to the UK is **Negligible** to **Very Low** which reflects the uncertainty around the different possible sources of infection and similar pathways (Defra, 2016).

The first report of prion disease in a novel species, namely camels in Algeria, demonstrates the need for ongoing awareness of TSEs in livestock in different parts of the world. The mechanisms of transmission and the risk to human health are not known. The risk of entry to the UK as a result of this new finding is assessed to be **Negligible** at this stage, as there are no trade links with Algeria and camelids.

Authors

Dr Paul Gale

Dr Helen Roberts

References

Anon (2018a) Cervids. Chronic wasting disease and wild deer. Status of National Survey of Scarcity (<http://www.hjortevilt.no/skrantesjuka/>) Accessed 25 April 2018

Anon (2018b) CWD in Norway (<http://www.hjortevilt.no/skrantesjuka-cwd/cwd-in-norway-english/>)

Defra (2016) Qualitative Risk Assessment: Risk of chronic wasting disease being introduced into Great Britain. <https://www.gov.uk/government/publications/qualitative-risk-assessment-risk-of-chronic-wasting-disease-being-introduced-into-great-britain>

Finnish Food Safety Authority (2018) (https://www.evira.fi/en/animals/current_issues/2018/moose-found-dead-in-forest-with-chronic-wasting-disease/) Accessed April 2018.

Norwegian Veterinary Institute (2018) Surveillance and eradication efforts towards CWD (17 November 2017) (<https://www.vetinst.no/nyheter/surveillance-and-eradication-efforts-towards-cwd>). Accessed 20 April 2018

Norwegian Veterinary Institute (2018) Sickness Statistics (<http://apps.vetinst.no/skrantesykestatistikk/NO/>). Accessed 20 April 2018

Babelhadj, B., Di Bari, M.A., Pirisinu, L., Chiappini, B., Gaouar, S.B.S., Riccardi, G., Marcon, S., Agrimi, U., Nonno, R. and Vaccari, G. (2018) Prion Disease in Dromedary Camels, Algeria. *Emerging Infectious Diseases*, 26, 6, ahead of print (https://wwwnc.cdc.gov/eid/article/24/6/17-2007_article)



© Crown copyright 2018

You may re-use this information (excluding logos) free of charge in any format or medium, under the terms of the Open Government Licence v.2. To view this licence visit www.nationalarchives.gov.uk/doc/open-government-licence/version/2/ or email PSI@nationalarchives.gsi.gov.uk

This publication is available at <https://www.gov.uk/government/collections/animal-diseases-international-monitoring> Any enquiries regarding this publication should be sent to us at iadm@apha.gsi.gov.uk