



Vitenskapskomiteen for mattrygghet

Norwegian Scientific Committee for Food Safety

CWD in Norway

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EFSA National Focal Point Representative – Norway

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Background

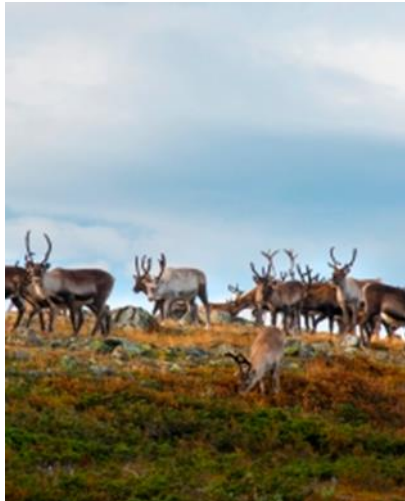


Photo: iStock Photo

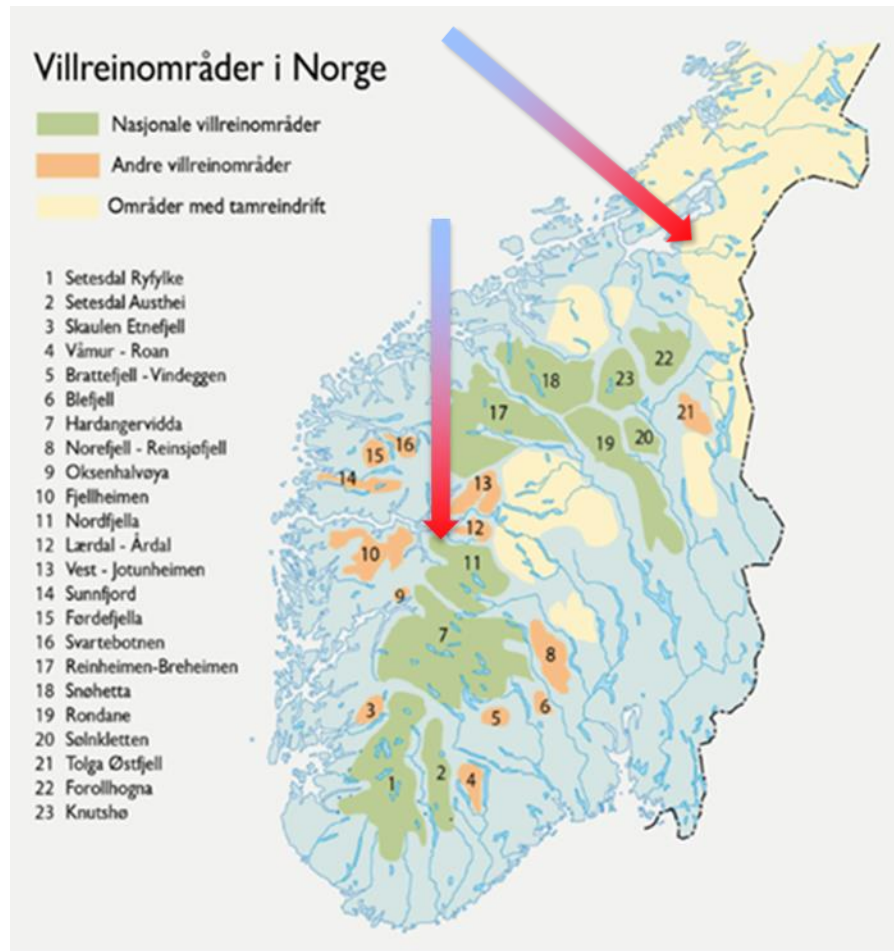
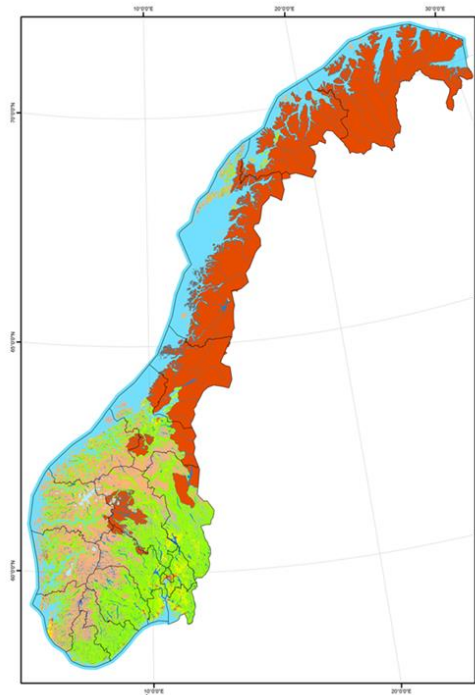


Photo: iStock Photo

Distribution of the 23 different populations of wild Eurasian reindeer (*R. t. tarandus*) in Norway. (<http://www.villrein.no/om-villreinomrdene>). (Nordfjella, region 11)

Reindeer herding in Norway

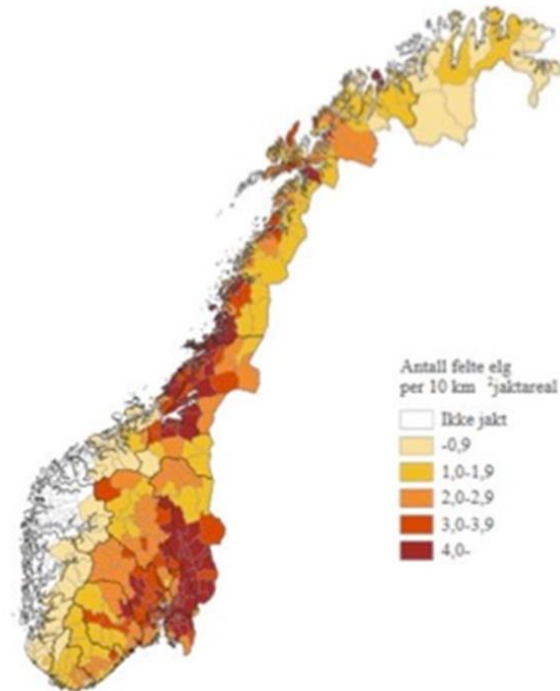
- Reindeer herding (semi-domesticated reindeer – Red coloured areas) is conducted in 140 municipalities in Norway, on approximately 140 000km², or about 40 % of the Norwegian land area.



Map: Bernt Johansen, NORUT

Moose in Norway

- Number of moose shot per 10km² hunting area (2013), reflecting the distribution of moose in Norway.



Map and data: <http://www.hjorteviltregisteret.no>

NFSAs request for a Scientific Opinion

- Two phases:
- **Phase 1:** Food safety (incl. preventive measures) & disease transmission between animal – Timeframe: 30 June 2016
- **Phase 2:** Food safety, disease transmission between animals, the origins of the disease, reindeer herding and wildlife management. Timeframe: TBD
- <http://www.english.vkm.no/dav/be5ebca1a5.pdf>

Prions

- Among the most resilient pathogens known
- dissemination of prions into ecosystems is likely to result in long-term problems
- Prions bind strongly to soil and remain infectious

Prions - CWD

- In CWD, prions are present in most peripheral organs
- Shed into the environment via saliva, faeces, urine and placenta

CWD

- Transmits easily among cervids, either through direct contact, or indirectly via the environment
- Migration of animal is relevant for the spread between areas
- Strain diversification might occur in CWD and may influence transmission properties of the agents

CWD

- Clinical signs of CWD are non-specific and do not alone enable confirmation of the diagnosis
- Analysis of tissue from the brainstem is necessary for diagnosis of CWD
- Prion infectivity is assessed by bioassays, often involving transgenic mice
- In vitro conversion assays, like protein misfolding cyclic amplification (PMCA), provide sensitive quantification of converting activity

Conclusions

- There is currently no information to determine the origin of CWD in Norway
- Sporadic occurrence of prion disease in cervids cannot be excluded, nor can introduction from North America or other countries
- There is no evidence that CWD has not been circulating at low levels in the cervid population for years, but has not previously been identified

Conclusions

- Cattle and sheep are at very low risk of developing CWD and it is highly unlikely that prion diseases in sheep or cattle are the origin of CWD.

Conclusions – Transmission to humans

- This scientific opinion considers the zoonotic risk of CWD to be very low
- Transmission to humans has never been known to occur
- Animals other than cervids have not been found to be infected, indicating a species barrier
- However, this possibility cannot be excluded.
- Thus, measures for reduction of human exposure are recommended.

Estimated probability of Exposure

- Estimated probability of exposure and development of CWD after exposure, Norway, as for June 2016

	Probability ¹	
	Exposure ²	CWD development post-exposure
Cervids		High
- Nordfjella Mountains	Insufficient data	
- Selbu Municipality	Insufficient data	
Sheep, cattle, goats		Very low
- Nordfjella Mountains	Insufficient data	
- Selbu Municipality	Insufficient data	
Humans		Very low
- Hunting	Insufficient data	
- Meat	Insufficient data	
- Berries, water	Insufficient data	

¹ For the purpose of this opinion, the following terminology related to assessment of exposure and risk is used (OIE, 2004).

² Due to lack of data, exposure probabilities cannot be estimated at this time.

Thank you for your attention!

