

THE WHITE-TAILED EAGLE AS A POTENTIAL THREAT TO LIVESTOCK

Evidence of White-tailed Eagle impacts on livestock:

Introduction:

A number of handbooks count for sheep and lambs or other ungulates under certain circumstances may fall victims to the white-tailed eagle, *Haliaeetus albicilla* (Bauer und Glutz 1971, Haftorn 1971, Fisher 1982). In Norway Willgohs (1961, 1984) apparently accepted 14 cases when white-tailed eagles were thought to have killed livestock (sheep, lambs, goats, and semi domesticated reindeer). White-tailed Eagle's impact on livestock was a main topic in Norwegian Sea-eagle Project, established 1974. No one questioned the opinion that White-tailed Eagle *did* kill livestock, but there was a need to quantify the problem and study the circumstances. However, during 43 years with Norwegian Sea Eagle Project and 30 years of carcass autopsy scheme carried out by Norwegian Nature Inspectorate on livestock suspected to have been killed by fully protected predators there has been only one case verified with white-tailed eagle's attack on sheep/lambs, goat/goat kids or semi domesticated reindeer.

Norwegian studies on possible impact on livestock from White-tailed Eagle:

As mentioned, Willgohs (1984) apparently accepted 14 losses of livestock where *the eagle* was guilty, but without saying anything about which eagle species. In his English summary, however, he was counting for only one incident where livestock had been killed by white-tailed eagle. A recent re-analysis of his data, in the light of recent experience of livestock predation incidents, using the criteria of the Norwegian scheme on post mortems on livestock carcasses since 1987, gave the conclusion that none of the referred incidences except one did fit with today's criteria for verification of white-tailed eagle attacks. The only record giving clear evidence of white-tailed eagles being an active part was a pair of white-tailed eagles who had eaten off the tail of a Cheviot ewe laying on its back without being able to turn on to its legs. The ewe was still alive and survived. (Co Sør-Trøndelag June 1957)

A national scheme on carcass autopsies in Norway has been running 1987-2017 on livestock losses suspected to be impacts from fully protected predators. By 01.09 2017 this is counting a total of 166.000 reports. Only one white-tailed eagle impact is verified, a lamb (May 2012, Co Rogaland). This lamb was still alive when the sheep farmer approached. Post mortems showed no signs of attempts from the eagle to kill the lamb. The eagle had started eating on one of the lamb's hind legs, and the lamb had to be put down. It was confirmed heavy infections and pus in the lamb's leg joints and in its lungs and the conclusion was that the lamb had not been able to move. A series of photographs confirm this, and obviously the lamb was moribund (photographs, Andreas Dunkley comm.).

White-tailed Eagle attacks on livestock/ungulates described elsewhere:

A record in many ways similar to the incidence from Co. Rogaland 2012 is described by Love (2013) about a two days old red deer calf on Isle of Rum June 1979 killed by an immature white-tailed eagle. No lethal talon punctures were found on the skinned carcass, only the wounds where the eagle had opened its prey by breaking through its ribs. These referred three incidences seem to be the only known globally where the White-tailed Eagle has been verified attacking live ungulates. However, the lack of evidence about white-tailed eagle as a potential threat to livestock is well in accordance with written historical sources, and even handbooks, where white-tailed eagle's impact on livestock is not mentioned, and livestock species are hardly included to the white-tailed eagle's prey list before 1961 (Kolthoff & Jäger 1898, Collett 1921, Løvenskiold 1947, Hagen 1952, Blædel 1961). The clerks Stevelin Reutz in his annual report 1743 to the King of Denmark, and Strøm (1762), together with Bendix Christian de Fine in Stavanger 1745 are describing the white-tailed eagle as a harmless bird to

the livestock, living mainly of fish and left overs. In Sweden Kolthoff & Jägerskiöld in their handbook on Nordic birds (1898) doubt the white-tailed eagle are hunting terrestrial mammals at all. Four citations referred by Love (2013) are written sources in Scotland from the period when the species still was abundant there, describing the white-tailed eagle's clumsy way to hunt, their preference for fish, and for carcasses and other types of foully food. It is striking that the oldest handbooks in Norway and obviously elsewhere do not mention livestock on white-tailed eagle's food list except when scavenged (Kolthoff & Jäger 1898, Collett 1921, Løvenskiöld 1947, Hagen 1952, Blædel 1961). At most of this time, the white-tailed eagle was still numerous along the coast and was a resident everywhere in the districts with sheep and goat farming. It was not until relatively recent times, may be caused by Willgohs' studies in Norway 1956-60, when the white-tailed eagle population had declined dramatically and was exterminated close to settlements, that the white-tailed eagle acquired the reputation as a lamb killer (Willgohs 1961, Bauer und Glutz 1971, Haftorn 1971, Fisher 1982). Recent studies in Scotland (Marquiss, Madders and Carss 2003a, 2003b, 2004) concluded that the reintroduced white-tailed eagle stock in Western Scotland may kill a small number of lambs. The possibility for left overs or klepto parasitizing from golden eagle kills was assessed, but regarded negligible. The author's conclusion therefore was that the remains of lambs in white-tailed eagles' nests for a smaller proportion had to be the results of white-tailed eagles actively attacking and killing lambs (Marquiss in litt). During recent field studies there was found no clear evidence of white-tailed eagles killing lambs in a preliminary study on Gairloch peninsula, Wester Ross in Scotland where there had been reported heavy losses of lambs by white-tailed eagles during preceding years (Simms & al 2010). The practice of white-tailed eagles picking up left over or even to klepto parasitize other predators is an important way of getting food and is verified in a high number of cases in Norway during recent years. For a number of them the golden eagle has been confirmed to be the killer (author's data). American studies on eagle impact on livestock concludes that it is predominantly immature and nonbreeding golden eagles who are actively killing lambs, while breeding birds rarely are involved in such cases (Matchett & O'Gara 1987, Phillips 1988, Phillips & al. 1996, Davies 1999, Watson 2010). Norwegian records seem to support these conclusions. In the material and data sets from Norway (Rovbase), 166,000 by 2017, has one verified attack of white-tailed eagle on livestock (described above). Marr & al (1995) found no evidence of eagle predation on sheep in their studies on sheep carcass used by bald eagles in Oregon. Davies (1999) underlines that only three species of Sea Eagles (*Haliaeetus*) have been reported killing lambs (North America, Europe, and Australia), but there is little evidence to support these accusations. However, McEneaney and Jenkins (1983) are describing two incidences in Utah the winter 1980-81 (10th and 17th February) where bald eagles killed a close to new born lamb as well as a pregnant ewe laying on the ground without being able to raise up. In a grotesque way they are describing the behaviour of a scavenger as opposed to a predator, which fits well with the three incidences described on the white-tailed eagle above. The eagles' behaviour is much more in accordance with well-known behaviour of other scavengers, e. g. the raven's way of attacking helpless but still live animals, compared to the golden eagle in similar situations.

Hillsheep farming in Norway:

Abroad there has been a belief that all sheep in Norway are lambing indoors or in-bye, reducing the chance for new born lambs to be exposed to white-tailed eagles to practically none, and that this is the reason why WTE hardly is causing any harm in Norway. From ancient time hill sheep farming was the traditional way of sheep farming all along the Norwegian coast from the south most point at least to the Lofoten Islands. Only inland and along the coast north of Lofoten the sheep were kept indoors during winter. The Norwegian short-tailed sheep breed (the Norse Breed) was by far the dominant breed. During the first half of the nineteenth century the long tailed sheep of cross breeds took over

even in Norway and by 1950-60 the hill sheep farming with “Norse Sheep” breed was on the way to get lost. A campaign was successfully set to save the traditional breed and the tradition of hill sheep farming. By now perhaps 100,000 or more wintering ewes of the “Norse Sheep” are roaming the heathland along the Norwegian coast, behaving in the same way as the black-face do in Scotland, lambing in the hills and not in-bye or indoors. The hill sheep farming in Norway thus is covering most of the densest populated white-tailed eagle breeding range and without impacts on the livestock. Since WTE became fully protected in Norway 1968 the population has increased by about fivefold, from 7-800 pairs to an estimated 4.000 territorial pairs today (Folkestad 2017), extending the breeding range from the mouth of Sognefjorden to covering the coast from the Russian border in the north to the Swedish border to the south, even breeding inland along the larger rivers and lakes.

Conclusion:

According to historical papers there was hardly any evidence for regarding the white-tailed eagle as a potential threat to livestock in Norway. Traditionally the species has obviously been regarded as more or less a harmless scavenger or fish hunter. This was still the dominant view among people who lived in the districts of Norway where the white-tailed eagle was still abundant, particularly so in Co Nordland, when J. Fr. Willgohs made his first survey of the species 1955-60. From 1974 until today the species has been monitored in Norway, including its feeding behaviour. From 1987 onwards there has been currently running a carcass autopsy scheme on livestock losses suspected to be fully protected predator’s impacts. From these data sets there are only two incidences verified where the white-tailed eagle has attacked live livestock in Norway, both of them with the eagle behaving like a scavenger on still live, but immobilized sheep/lambs. Similar behaviour has been verified in Scotland concerning a red deer calf, and with bald eagles in two incidences on sheep/lambs in US. Reports and studies in Scotland are indicating a very low frequency of similar behaviour towards lambs even there, concerning the introduced white-tailed eagle population.

The overall conclusion then is that the white-tailed eagle is quite clearly not a threat to livestock. However, there may be some very few exceptions when the species seem to behave like a scavenger on still live but immobilized or moribund livestock, and even starting feeding on the animals without killing them. In this way the white-tailed eagle behave in the same way as is well known from other scavengers like ravens and other corvids, and occasionally greater black-backed gull.

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