

## **Has climate change caused the disappearance of Willow grouse *Lagopus lagopus* in Latvia?**

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In the 19th century and at the beginning of the 20th century, the Willow grouse *Lagopus lagopus* (L.) was one of the most common bird species on peatbogs in Latvia. In the mid-20th century it was still common on large peatbogs in eastern Latvia, but almost extinct in western Latvia. Surveys conducted by the National Forest Service in 1922-1990 has shown a decline. In 1925 the population was estimated at 5785 birds, 1935 at 3447 birds and 1960 at 668 birds, but early in 1980s there were observed fewer than 100 birds. Recent confirmed observations were made in 1994 in the Teiču Reserve. Later observations are not reliable, or feathers were found only. Not so evident, but also a decline is seen in Belarus, Estonia and Lithuania. The species in Lithuania is included in the list of extinct bird species. It is unlikely that willow grouse in Latvia is still found, and birds observed near the eastern border are from Russia. A possible reason for this decline is an increase in predator number: red fox *Vulpes vulpes*, wild boar *Sus scrofa*, pine marten *Martes martes* and crows *Corvus* spp. Another reason might be an alternative food supply – the white birds have become more visible now in snowless winter and spring months. The other reason for this decline could be the rise of the peat industry from the 1940s to 1980s in Latvia. Willow grouse was a important game-bird before 21th century but an effect of over-hunting is not suggested.