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Population genetics of white-tailed eagle Iceland - The aftermath of a severe bottleneck

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White-tailed eagle is a large bird of prey with a distribution range in the top of the northern hemisphere from Greenland in west to Asia in east, also including Iceland. According to IUCN Red List, the white-tailed eagle is of least concern (LG). But even though it´s doing better in most places, that has not always been the case. In the last part of the 18th hundreds the size of the Icelandic population of white-tailed eagle plummeted to only around 20 pairs, and the population went through a bottleneck lasting for half a century. The population is now recovering, though slower than the European mainland populations that have also been through bottleneck, and there is now at around 70 pairs in Iceland. This project has to main objectives; 1) through genomic analysis, look at the effect of small population size and 2) through population genetic analysis look at potential inbreeding depression.
In the first part of the project we aim to assemble a reference genome of the white-tailed eagle, specifically from Iceland and analyze the effect of small population size on genomic variation; we will analyze if there is signs of small population size and inbreeding, and the effect of the bottleneck.
The second part of the project will focus on the potential inbreeding depression in the Icelandic population, including looking at the population structure, genetic selection, and relatedness in the context of reproductive success and fitness.