

Newly sequenced golden eagle genome will help its conservation

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Golden Eagle - the first UK species to have its DNA read by the Sanger Institute as part of its 25 genomes for 25 years project. Credit: Martin Mecnarowski, Wikimedia Commons.

Conservation and monitoring efforts for the golden eagle will benefit from the newly-completed golden eagle genome sequence – the first of 25 species' genomes sequenced by the Wellcome Sanger Institute, in collaboration with the University of Edinburgh.

The golden eagle genome, released today (31 August), will help scientists and conservationists understand the diversity and viability of the species worldwide. It will ultimately aid the monitoring of existing, reinforced and reintroduced populations of [golden eagles](#), such as those in the South of Scotland Golden Eagle translocation project, which aims to bolster the protected species' [population](#).

There are around 300,000 golden eagles worldwide, with between 9,300-12,300 pairs living in Europe. Despite being listed as 'least concern' by the IUCN Red List of Threatened Species and having widespread populations worldwide, the 508 breeding pairs of golden eagles in the UK are largely restricted to the Scottish Highlands and Islands.

The Scottish population is on the edge of the global range, and many existing world populations are small and declining.

For the first time, the golden eagle has had its genome sequenced by the Sanger Institute and its partners, in celebration of Sanger's 25th anniversary.

The genome will enable additional studies of golden eagles and will help in the [conservation](#) and monitoring of the species. The genetic information will aid in identifying populations or individuals that might be best involved in any reintroduction or other conservation projects.

Scientists from the University of Edinburgh's Royal (Dick) School of Veterinary Studies sent golden eagle samples to the Sanger Institute near

Cambridge. The sequencing teams extracted DNA from the samples and used PacBio SMRT Sequencing technology to generate the first, high-quality golden eagle reference genome.

"With the golden [eagle genome](#) sequence, we will be able to compare the eagles being relocated to southern Scotland to those already in the area to ensure we are creating a genetically diverse population. We will also be able to start investigating the biological effects of any genetic differences that we detect, not only within the Scottish population, but worldwide," said Dr Rob Ogden, Head of Conservation Genetics at the University of Edinburgh and a scientific adviser to the South of Scotland Golden Eagle Project

More information: www.sanger.ac.uk/science/collaboration/25-genomes-25-years

Provided by Wellcome Trust Sanger Institute

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