

WHITE TAILED EAGLE

ERYR YR MOR



01 INTRODUCTION

According to the (State of Nature report), nearly "one in six species" in Great Britain faces extinction, with over 40% of bird species declining significantly.

This critique examines the habitat feasibility study for reintroducing white-tailed eagles to Wales, analysing its methodology, scope, and conclusions to offer insights for improving future assessments and supporting biodiversity conservation.

02 OBJECTIVE

The study aims to evaluates the feasibility of reintroducing the White-tailed Eagle (*Haliaeetus albicilla*) to Wales, where it was extirpated due to human persecution. Using (IUCN/SSC, 2013) reintroduction guidelines, compiling a literature review which "is an evidence-based, in-depth analysis of a subject"(C.Winchester,2016) in the absence of real time data helps to understand a baseline for the research . The research combines Species Distribution Models (SDMs) which can help with "mapping suitable sites for species reintroduction"(Guisan and Thuiller, 2005) to analyse human land use to identify suitable habitats and assess compatibility with modern landscapes. Findings confirm in the study that White-tailed Eagles once thrived in Wales and that their extinction was human-driven. The study provides critical evidence for reintroduction, demonstrating habitat suitability and the potential for coexistence with human activities, while identifying the need for further assessments to complete the reintroduction process.

03 METHODOLOGY

The study employed a multidisciplinary approach to assess the historic distribution of White-tailed Eagles in Wales, integrating data from historical records, archaeological findings, and place-name analyses. Key environmental factors, such as proximity to coasts and freshwater, were linked to species-specific habitat preferences through statistical models like Generalized Linear Models (GLMs) and Discriminant Function Analysis (DFA) "used to determine the likelihood that an observation belongs to a particular group based on predictor variables"(Hassan, 2024). Kernel density estimation identified core historic ranges, while mapping tools in QGIS and statistical packages in R provided precise visualizations. Despite challenges like biases in historical data and limited focus on modern habitat changes, the study offers a strong foundation for identifying potential reintroduction sites for the species.

04 CRITIQUE

Strengths:

- Comprehensive methodology integrating historical data, ecological models, and spatial analysis.
- Use of predictive modeling (SDMs) to identify suitable breeding habitats across Wales, accounting for environmental features like coastlines, woodlands, and waterbodies.(Smeraldo, S, 2017)
- Provides a robust foundation for reintroduction efforts, backed by established success in similar conservation projects. For example in Scotland where the white-tailed eagle is considered "an international conservation success story" (Forestry and Land Scotland).
- Highlights areas with minimal anthropogenic risks, offering clear priority zones for restoration.

Weaknesses:

- Limited direct knowledge of modern habitat suitability due to the absence of breeding eagles and sporadic visits in the 20th century. The study also makes reference to gaps in monitoring of raptor populations, breeding and associated habited preferences since the closure of the "Welsh Raptor Study Group in 2013"(s. Williams 2024).
- Literature review can introduce bias "preconceived ideas about the subject area" (C.Winchester ,2016) reducing the accuracy of data. Biases in historical data, such as ambiguous place-name interpretation.
- The study does not fully account for the dynamic variables such as climate change where "parts of their indigenous range may become uninhabitable" (Dalrymple, S.E. 2023) in the future and ongoing land-use changes that could impact long-term habitat suitability.

Opportunities:

- Opportunity to enhance predictive models with more recent data on human activity, climate change, and land use to improve habitat suitability predictions.
- The possibility of strengthening conservation efforts by using ecologically similar mesopredators' breeding distributions as a proxy for eagle habitat needs.
- Potential for collaboration with conservation programs in Scotland and Norway to refine translocation strategies and increase genetic diversity.

Threats:

- One of the main "problems for nature loss at the moment are things like loss of habitat, pollution and the impact of climate change" .Ongoing human land-use changes, such as urbanization and windfarms, could further reduce the available habitat and introduce risks of displacement and collision.
- Potential conflicts with local communities or industries (e.g., farming, tourism) over land use, leading to resistance to reintroduction efforts." Working with landowners and farmers must be the foundation of the consultation process" (Bishop. E., 2024) for human and animal coexisting. To avoid the previous issue for the eagles reoccurring.
- Insufficient or inaccurate data may limit the effectiveness of habitat suitability assessments as it is "hard to predict the outcome regardless of computer modelling or trials due to the unpredictability of nature."(The Pros and cons of reintroductions) and this can also then hinder adaptive management strategies.

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05 CONCLUSION

The thesis effectively demonstrates that reintroducing White-tailed Eagles to Wales is both ecologically feasible and beneficial, supported by the research of other avian species and ample suitable habitat. The need for sourcing eagles from Norway, although not ideal is still considered best practices for maintaining genetic diversity through regular translocations, strengthens the case for success. The restoration would have significant conservation, cultural, and economic benefits for Wales, enhancing biodiversity and ecosystem resilience while fostering eco-tourism. While further research on prey availability and public attitudes is needed, with adaptive management plans the study provides a good foundation for reintroduction. Helping to fill in knowledge gaps that will be crucial in the future of developing an ecologically sustainable Wales and restoring this once wide spread avian predator to it's former landscapes.