

REINTRODUCTION OF WHITE TAILED EAGLE IN WALES

Introduction

The White-tailed Eagle is of least concern on the global conservation red list but has been extinct in Wales for over 150 years (BirdLife International, 2021). There has been incredible success of re-introductions in Scotland since 1959 where there are now over 130 breeding pairs. (Williams, 2021) and Isle of Wight where the first chick fledged the nest in 2023 (Roy Dennis Wildlife Foundation, 2025).

The Eagle Reintroduction Wales (2025b) projects utilise a thesis from Dr. Sophie-lee Williams (2021) assessing Wales as a suitable habitat for both/either the White-tailed Eagle and Golden Eagle, it has partnered with Roy Dennis Foundation, and currently under licence application with Natural Resources Wales.

This poster sets out to critically evaluate three of main factors that affect the habitat feasibility of Wales that Williams (2021) thesis attempts to address. It is to note that this study is not the feasibility study but provides the foundation for it. While feasibility studies such Cornwall’s six mammal species (Cooper et al., 2023) and the Isle of Wight’s White-tailed Eagle (Dennis et al., 2019) cover a range of topics from biological feasibility, ecological impact, socio-economic impact and risk assessments.

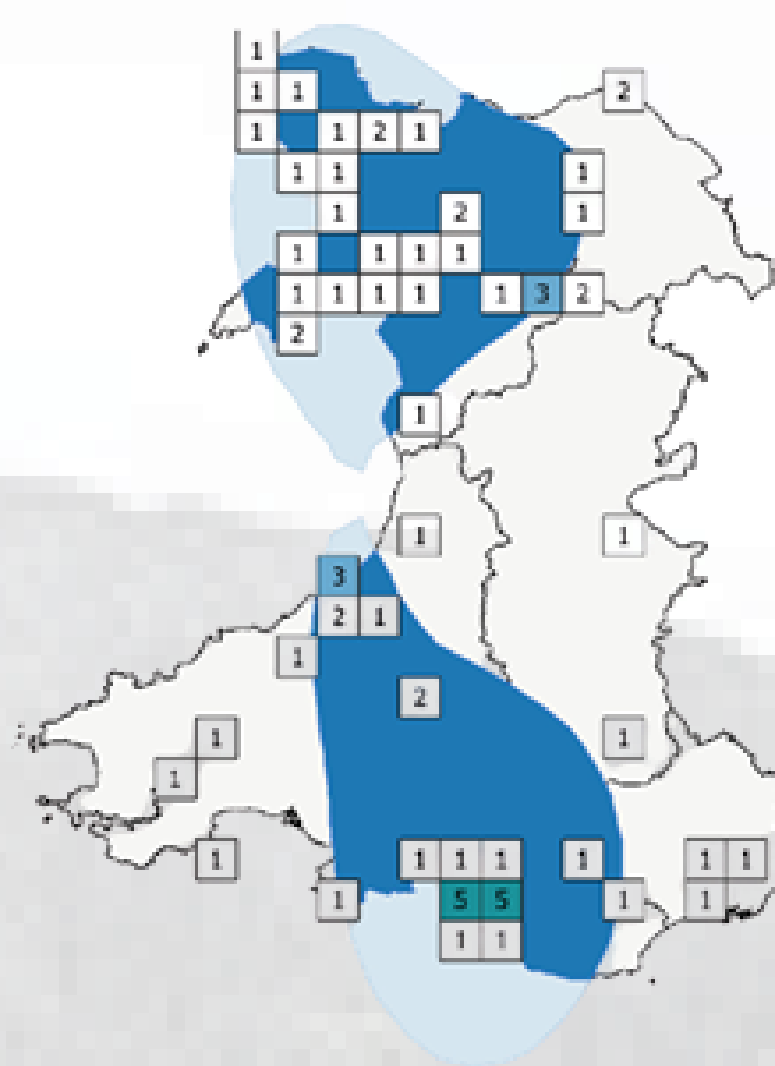
Breeding Habitat Suitability

1. Maps were created using Species Distribution Models that predicted the probability of the White-tailed Eagle would be present in 50m Digital Terrain Model in GIS. Assessing 7 environmental factors and 22 common habitat types.
2. Availability of suitable habitat was assessed also using GIS to assign habitat loss due to wind farms and urban areas.
3. Ranking system created for each biogeographic area depicting level of risk and abundance of resources, high numbers denote higher risk and less resource.

Historical Distribution in Wales

While historic data existed for the British Isles, it appeared to have excluded any Welsh records. The project looked into a variety of methods to determine the indigenous breeding status in Wales and fulfil IUCN criteria (IUCN, 2013) that a restoration was the appropriate option. Creating a core historic distribution for the White-tailed Eagle goes far beyond these expectations.

- 151 records
- Archaeological
- Place Names
- Observational



Mortality Risks

Human persecution
White -tailed eagles are now fully protected Wildlife and Countryside Act 1981, however illegal persecution still occurs and can be seen on the RSPB’s Raptor Persecution Map Hub (RSPB, 2024). The project recognises that many of the historic persecutions arose from conflict with farmers of livestock and therefore indicates extensive engagement with stakeholders and communities to educate and understand attitudes towards the White-tailed Eagle for successful reintroductions (Williams, 2021).

Wind farms

It is widely understood that wind turbines pose a collision threat to White-tailed Eagles as they have slower manoeuvrability and have not shown flight avoidance response when in the vicinity of turbines (Dahl et al., 2013; Heuck et al., 2019). However, Williams (2021) states that the Welsh coastline is similar to Norway and Scotland in that it is devoid of windfarms and 70% of those have 3 or less turbines - concluding a minimal risk.

Translocations

Donor chicks should be of a close genetic match and have no impact on source population (IUCN, 2013) and following these guidelines, translocations will be sought from Norwegian stocks. Scottish stocks were not a viable source.

Discussion

Throughout the thesis it is evident that it has been led by much of the IUCN (2013) guidelines on reintroductions, recognising that much of the landscape and public attitudes towards birds of prey has changed. There is no doubt to which the level of detail has been made to address the habitat suitability, given that the species has not bred here for 150 years or more. Habitat suitability uses ‘layers’ in GIS create a great visual tool to see how the apex predator might use the land. According to (Radović and Mikuska, 2009) suitable habitat selection for White-tailed Eagles must fulfil three criteria: within proximity to feeding place, distance to woodland for nest building and a tolerable amount of human disturbance. Key variables to answer the question of suitability were distance to lakes or coast to forage for prey and forested areas to build a nest. Building on suitability, habitat loss variables such as proximity to wind farms and urban areas were included. There is an uneven weight given to the overall suitability of Wales with a wide understanding of how 5 ecologically similar species use the landscape, not depicted here. Prey availability for the most suitable areas needs addressing, however that is recognised by Williams (2021). Mortality risks largely follow existing knowledge in other studies and reintroduction projects. Overall, very detailed information that answers broad questions on the suitability of Wales to reintroduce White-tailed Eagles.

Feeding habit / Prey availability

Prey availability was not discussed in theses but a table with estimates of population densities of prey species per 10km² across Wales and for each biogeographic region was given.

Species Density per 10 km ²		Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8
Mammals (Family)									
Leporidae	Hares/Rabbits	9.8	9.1	6.1	2.3	6.3	6.7	6.7	7.5
Cervidae	Deer	0.5	1.1	0.3	0.3	0.3	0.4	0.3	1.5
Bovidae	Goats	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.8
Carnidae	Fox	9.4	5.7	5.4	1.6	5.4	4.2	2.3	5.7
Muridae	Rats/mice/voles	38.1	45.1	9.0	1.7	3.2	6.9	10.4	21.2
Mutellidae	Weasels/Badgers	18.7	11.6	11.7	5.0	13.4	6.0	10.5	13.7
Birds (Family)									
Anatidae	Ducks/Geese/Swans	879.4	423.7	497.1	59.9	163.7	43.4	178.1	36.3
Phalacrocoracidae	Cormorants/Shags	84.9	49.3	68.9	14.4	44.0	9.6	23.6	4.8
Rallidae	Rails/Crakes/Coots	197.4	107.3	69.2	8.1	37.0	7.7	11.0	0.7
Procellariidae	Petrels/Shearwaters	1.3	6.9	14.2	4.1	27.9	1.4	1.0	0.3
Ardeidae	Herons/Bitterns	256.5	92.7	184.7	21.2	50.6	20.3	44.9	13.7
Charadriidae	Plovers/Dottrel/Lapwings	164.7	83.8	168.7	31.3	56.4	13.2	52.6	9.1
Scolopaciidae	Pipers/Curlew/Snipe	446.6	180.1	396.9	47.3	159.3	49.2	105.9	27.4
Laridae	Gulls/Turns	389.8	253.6	220.2	51.9	174.4	47.4	60.6	21.3
Corvidae	Crows/Raven/Magpies	#####	603.4	576.2	200.9	384.8	223.5	174.5	87.3

Background image taken from Eagle Reintroduction Wales (2025a).

Reference List in Appendix

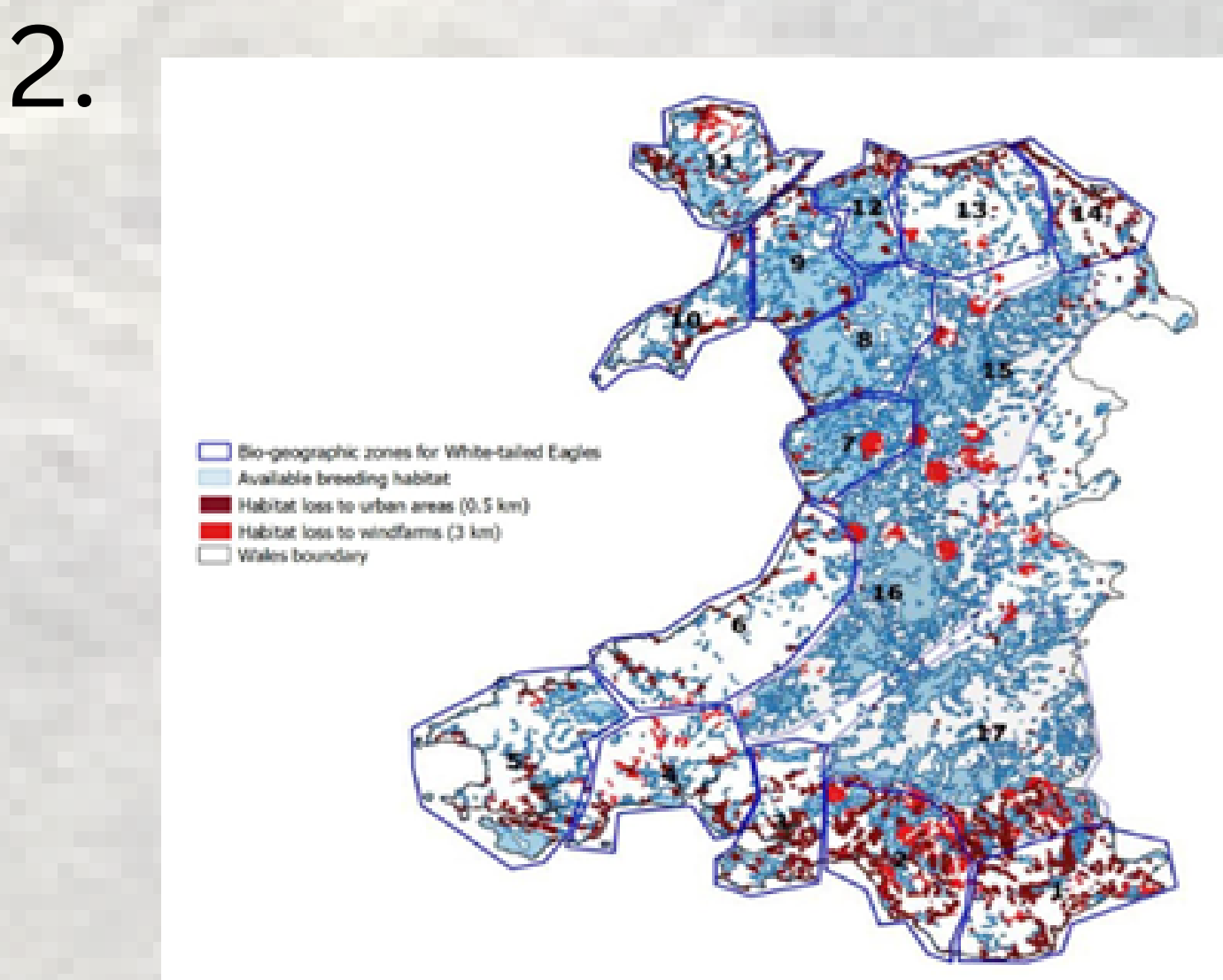
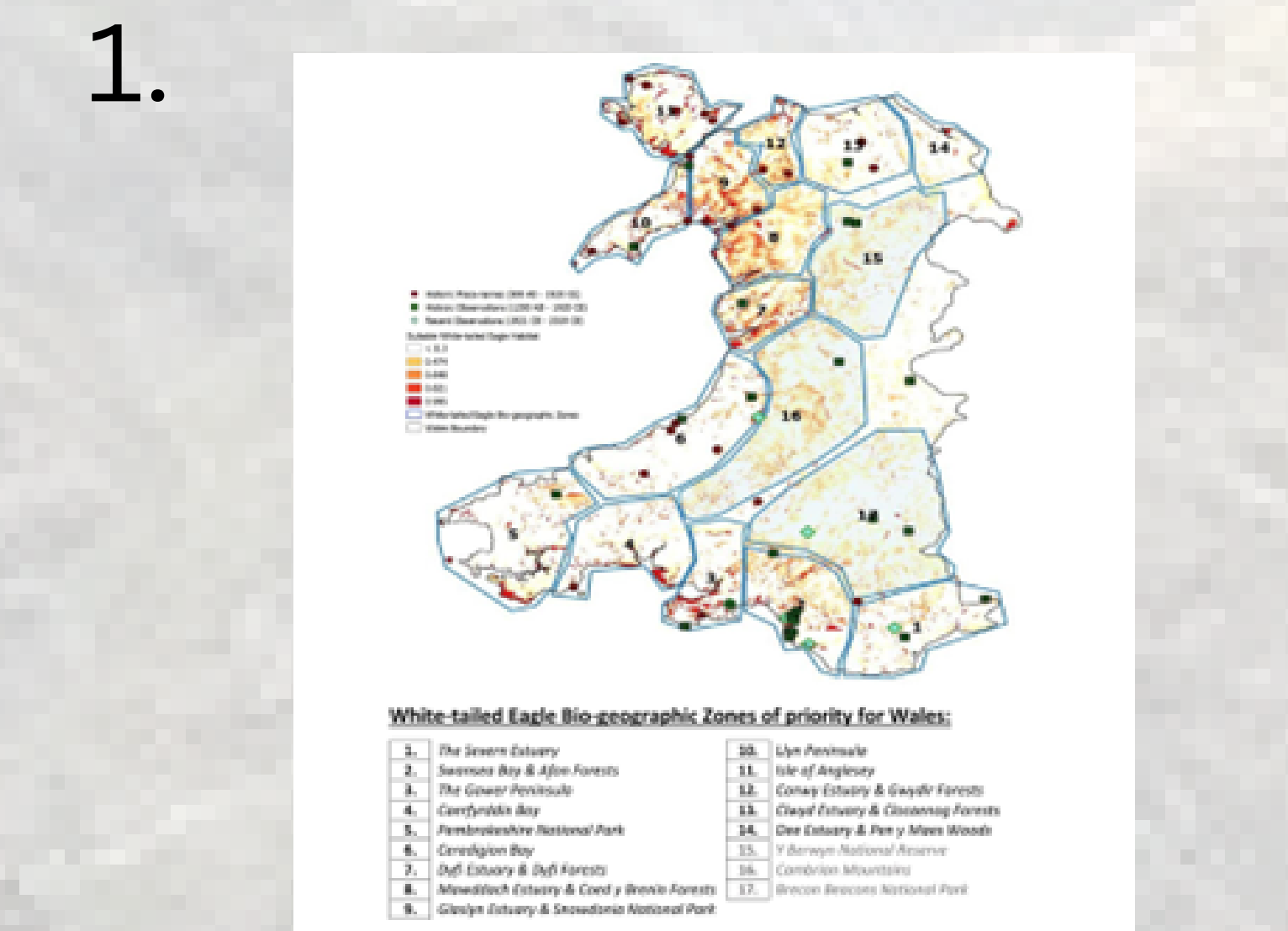


Figure 15. Prediction of coast and inland bio-geographic areas highlighted for more focus work for a White-tailed Eagle reintroduction in Wales, illustrating the historic and current distribution of Welsh records across Wales. (Williams, 2021)

Figure 18. The estimated loss of White-tailed Eagle breeding habitat attributed to the plausible displacement by windfarms (1 km breeding displacement buffer) and urban areas (0.5 km breeding displacement buffer) across Wales. Available breeding habitats are denoted by coastal bio-geographic zones (blue) and zones for inland areas (bio-geographic zones 15 to 17). (Williams, 2021).

Table 10. Bio-geographic zone-specific hierarchies for each bio-geographic zone in Wales, depicting the level of risks and abundance of available resources for White-tailed Eagles in Wales. High rank numbers indicate more anthropogenic risks or less resource availability in a given area. (Williams, 2021)

Suitable Habitats		Habitat Loss		Land use Intensity				Available Habitat and Resources							
Bio-geographic Zones	% Suitable Habitat	% Habitat lost to Windfarms	% Habitat lost to Urban areas	% Land covered by Commercial Forestry	% Land covered by Livestock Pasture	No. of Wind-turbines	No. of Persecution Incidents	Population No.	% Available habitat	% Available nests (rags)	% Available nests (Coastal trees)	% Available nests (Inland trees)	% overlap with Protected areas	Average Zone Rank Score	Final Zone Rank Score
1 - The Severn Estuary	17.5	13	16	10	12	9	1	17	7.8	12	12	11	15	12	16
2 - Swansea Bay & Afon Forests	76.0	17	17	15	6	17	15	16	53.0	10	11	15	16	14	17
3 - The Gower Peninsula	27.8	5	16	1	14	5	4	14	20.9	5	4	13	12	8	8
4 - Caerfyrddin Bay	21.7	9	10	7	16	12	8	8	16.5	9	2	16	14	10	10
5 - Pembrokeshire National Park	17.5	7	5	6	9	10	6	10	15.0	4	1	8	3	6	2
6 - Ceredigion Bay	8.3	6	8	17	10	11	7	7	6.6	3	6	10	8	8	3
7 - Dyfi Estuary & Dyfi Forests	58.1	16	12	13	4	6	8	2	49.0	6	7	5	6	8	4
8 - Mawddach Estuary & Coed y Brenin Forests	67.9	1	7	12	3	1	1	3	65.7	7	5	3	1	4	1
9 - Glaslyn Estuary & Snowdonia National Park	60.9	2	11	5	2	1	1	9	57.2	8	9	7	10	6	6
10 - Llyn Peninsula	25.5	12	6	3	11	7	4	4	21.3	2	8	7	9	8	5
11 - Isle of Anglesey	35.4	10	14	2	15	15	8	6	28.0	1	3	14	5	8	7
12 - Conwy Estuary & Gwydir Forests	58.4	3	8	9	1	1	11	11	55.9	11	10	9	13	8	9
13 - Clwyd Estuary & Clocaeog Forests	18.3	8	4	11	13	14	6	12	15.7	13	14	6	7	10	11
14 - Onw Estuary & Pen y Mawr Woods	22.0	4	13	4	7	1	11	13	17.1	11	13	12	17	10	13
15 - Y Berwyn National Forest	17.5	15	1	14	10	13	16	5	43.3	/	/	4	2	9	14
16 - Cambrian Mountains	44.1	14	2	17	5	16	11	1	40.8	/	/	1	11	9	15
17 - Brecon Beacons National Park	41.5	11	9	16	8	8	17	15	36.8	/	/	2	4	10	12

Appendix

Reference List

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