**Terms of Reference for Master's Thesis**

**Evaluating the Rewilding Potential of Portuguese Areas**

**1. Introduction and Context**

Based on recent studies, this thesis aims to explore the potential for rewilding in various areas of Portugal. The study aims to systematically evaluate different natural areas by integrating two methodologies that have already been developed: the rewilding suitability index proposed by Jordi Palau (2015) and the rewilding score methodology developed by Segar et al. (2021). This integrated approach will allow for a comprehensive assessment through a single index, capable of informing management and policy decisions.

**2. Objectives**

**General Objective:** To assess the rewilding potential of various areas in Portugal, including all protected areas on the mainland, Madeira and the Azores, as well as other high-value areas outside the national network of protected areas, using a combined rewilding index.

**Specific Objectives:**

**Literature Review:** Review and critically evaluate existing rewilding methodologies and case studies (with an emphasis on the referenced studies) to identify the key parameters that influence the success of rewilding.

**Methodological Integration:** Develop a combined index by integrating the suitability index for rewilding (Jordi Palau, 2015); and the rewilding score methodology developed by Segar et al. (2021).

**Area Selection:** Identify and compile a list of candidate sites, including all protected areas on the mainland, Madeira and the Azores; other high-value areas with potential for rewilding.

**Data Colection:** Gather relevant biophysical, socio-economic and management data for each site to feed into the combined index.

**Index Application and Analysis:** Apply the combined index to the selected areas to assess and classify their rewilding potential. Analyse spatial patterns, limitations and opportunities.

**Recommendations:** Propose management actions, policy recommendations and guidelines for future research based on the results obtained.

**3. Investigation Questions**

- How can the suitability index for rewilding and the rewilding score methodology be effectively integrated into a single index for assessing rewilding potential?

- What ecological, socio-economic and management factors influence the potential for rewilding in protected and high nature value areas in Portugal?

- Which areas in Portugal have the greatest potential for rewilding and what are the main challenges and opportunities for its implementation?

- How can the combined index inform future policies and management practices in the context of rewilding initiatives?

**4. Methodology**

**4.1. Literature Review and Conceptual Framework**

- Carry out an in-depth review of the two key studies and other relevant literature on rewilding.

- Identify the common parameters, differences and potential synergies between the suitability index and the rewilding score methodology.

- Develop a conceptual framework to underpin the combined index.

**4.2 Development of the Combined Index**

- Identify the critical parameters of both methodologies (e.g. ecological integrity, connectivity, human impact, management capacity).

- Establish criteria for assigning weights and scaling each parameter, developing normalisation procedures to ensure comparability.

- Formulate a decision support model that combines the parameters into a single rewilding score for each area.

**4.3. Data Colection**

- Compile a comprehensive list of sites (all protected areas on the mainland, Madeira and the Azores, plus other areas of high natural value).

- Utilise government databases, conservation management plans, remote sensing data and scientific literature.

- Collect variables related to ecological factors (e.g. species diversity, habitat quality, connectivity), socio-economic factors (e.g. land use pressure, local support) and management effectiveness.

**4.4. Index Application**

- Apply the combined index to each selected area.

- Use GIS tools to map the rewilding potential across the territory.

- Validate the results through comparison with existing case studies and expert assessments.

- Synthesise the results in the context of the challenges and opportunities of rewilding at regional level.

**4.5. Recommendations**

- Based on the evaluation, draw up recommendations for rewilding implementation strategies and management priorities.

**5. Expected Products**

1. **Literature Review Report:**
A report summarising current rewilding methodologies and their applicability in the Portuguese context.
2. **Methodological Framework:**
A detailed description of the combined index, including its conceptual framework, the selection of parameters and its mathematical formulation.
3. **Database of Evaluated Sites:**
A comprehensive data set covering all the study sites with their respective rewilding scores.
4. **Spacial Analysis Maps:**
GIS-based maps that visualise the potential for rewilding in the selected areas.
5. **Final Thesis Document:**
The master's thesis detailing the methodology, analysis, results and recommendations.
6. **Politician Summary:**
A concise document summarising the main findings and recommendations for policy-makers and conservation professionals.

**6. Resources**

- Access to government and scientific databases, remote sensing images, GIS software (e.g. QGIS/ArcGIS).

- GIS software and data analysis tools.

- Engagement with conservation managers, ecologists and rewilding professionals (if necessary, consider workshops or interviews).

**7. Conclusion**

This thesis aims to develop an innovative and integrated tool for assessing the rewilding potential of areas in Portugal. By merging two established methodologies into a single index, the study will contribute to the implementation of more informed conservation strategies and political decision-making, facilitating the expansion of rewilding initiatives. It is hoped that the results will help to identify priority areas for ecological restoration and to understand the multifaceted challenges associated with rewilding in a diverse socio-ecological context.

**References:**

* *Rewilding in Spain: Where is it Possible and Why is it Interesting? An Analysis From the Point of View of a Protected Area Manager.* [ResearchGate](https://www.researchgate.net/publication/345984400_Rewilding_in_Spain_Where_is_it_Possible_and_Why_is_it_Interesting_An_Analysis_From_the_Point_of_View_of_a_Protected_Area_Manager)
* *Expert-based assessment of rewilding indicates progress at site-level, yet challenges for upscaling.* [Wiley Online Library](https://nsojournals.onlinelibrary.wiley.com/doi/epdf/10.1111/ecog.05836)