Executive Summary

Ecological Restoration (ER) is a methodological tool based on Ecology, which supports the recovery of ecosystems that have been degraded. The Practical Guide to Ecological Restoration aims to be a useful and versatile document. It can be used both to make a first approach to ER and to consider a greater technical immersion thanks to all the information it brings together as bibliographical reviews and links to websites of interest.

In spite of having a consolidated trajectory of more than 30 years, ER is still not implemented in the different processes having an impact on the territory, such as agriculture, mining, civil works, building, activities of conservation of specific areas and species, recovery of degraded spaces, etc. It is a natural evolution process promoted by the European Union and the main international organizations, which will progressively be transferred to the national, regional and local context. Proof of this is the State Strategy for Green Infrastructure, Ecological Connectivity and Restoration (IVCRE), for which this Guide is intended to be an operational tool.

ER, following the recommendations of the International Society for Ecological Restoration (SER), is based on the study of each particular case. It requires the following elements:

- An **ecological diagnosis**, to analyse the scenario and the causes of degradation.
- An ecosystem/**set of reference ecosystems or references** that serve as a model and target for the area to be restored.
- An **execution** process that minimizes environmental impacts and guarantees the recovery of ecological processes.
- **Monitoring and evaluation** processes, with a specific plan and adapted indicators that guarantee and allow evidencing the recovery of the functionality of ecosystems, and a **dissemination** process that guarantees the evolution of the ER discipline based on the good practices generated.
- An **adaptive management**, which allows the ER project to be reconsidered on the basis of new information and/or results from the project itself during its execution and monitoring stages.
- **Participatory processes** that allow different interest groups to participate and get involved in the development of the project. This cross-cutting activity is of great importance and should be activated in the initial phases and maintained until the end.

The final result should be a functional ecosystem, self-sustainable over time, generally without maintenance work. It must harbor indigenous biological communities, as diverse as conditions allow, and be capable of harboring and producing ecosystem goods and services that contribute to the quality of life of the societies in which it is inserted.

The implementation of new work methodologies implies an inherent risk to innovation, but at the same time, it will allow for opportunities to obtain better results, new economic returns and social benefits.

Beyond the ER project design, execution and follow-up, this methodology and its approach can be implemented in all the processes already indicated with effects on the territory in any of its stages, being always more efficient if carried out in the earliest stages.

Optimizing the implementation of ER in the procedures of organizations, structures or groups that interact with the territory, whether public administrations, private entities or NGOs, is also a technical and economic challenge as well as a great opportunity for leadership and differentiation. In this regard, ER implies an evolution with respect to available environmental technologies. It seeks to improve the efficiency of ecosystem recovery by restoring ecological processes and aiming at the sustainability of restored ecosystems, considering also the provision of ecosystem services. Since it has an impact on key ecological processes, ER aims to have a minimum interference on the territory, which allows the intervention on wide areas at sustainable costs.

The Guide provides numerous practical examples, references and useful resources that can facilitate the adoption of the proposed methodological principles, being a tool for the application of the State Strategy for Green Infrastructure, Connectivity and Ecological Restoration.

This Guide is part of the Business and Biodiversity initiative of the Biodiversity Foundation of the Ministry for Ecological Transition, with the support of Ferrovial, Endesa, Iberdrola, LafargeHolcim, Naturgy and OHL. It will be reviewed periodically so that it becomes a living document with more and more pragmatism and experience, consolidating itself as a reference document for ER in Spain.