

# SPAIN– IBERIAN HIGHLANDS

## Climate Change Mitigation in the Endangered Landscapes and Seascapes Programme



The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations

The Endangered Landscapes and Seascapes Programme supports nature restoration across European land- and seascapes.

### Why restore nature?

As well as providing benefits for biodiversity and ecosystem services, restoring natural landscapes also has the potential to contribute to climate change mitigation.

### About the project

The Iberian Highlands are located in the southern Iberian Chain mountain range. This sparsely populated landscape contains a diverse range of habitats including grassland steppes and oak, juniper and pine forests.

The area is highly biodiverse, although some key species have been lost from the area due to anthropogenic pressures. The project aims to reintroduce some of these species, including the Iberian lynx, Serrano horses and Tauros, which have been bred to functionally resemble Europe's long-extinct wild cattle breed.

By restoring food-chains, and managing these habitats, the project aims to allow the area to naturally regenerate.

**Project size:** 7087 ha assessed out of 850,000 ha total

**Assessment timeframe:** 2022-2042

**Project lead:** Rewilding Europe/ Rewilding Spain

### Key activities:

- Reintroduce key species
- Protect forests and grasslands to enable their natural regeneration

**Total mitigation potential:** -293,953 tCO<sub>2</sub>-e

### Assessing the climate change mitigation potential of this project

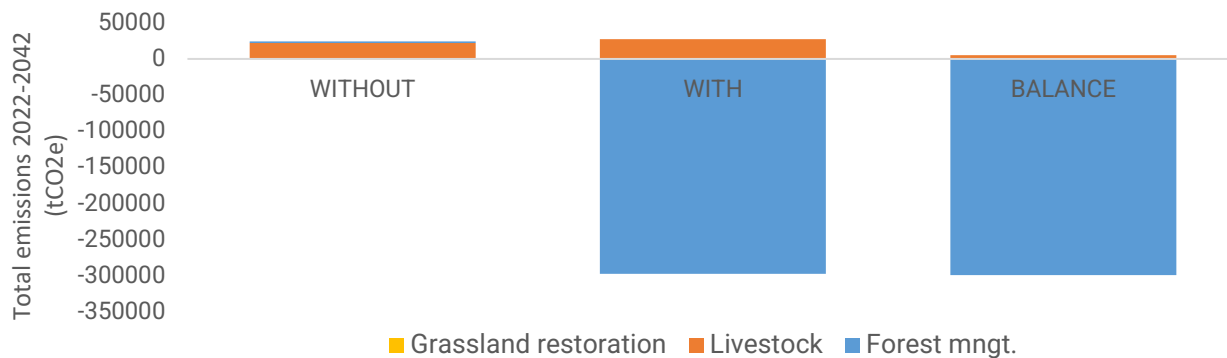
To determine the contribution of these actions towards climate change mitigation, their impacts on carbon stocks and GHG emissions need to be calculated. The most applicable tool for doing this is the EX-ACT carbon assessment tool, developed by FAO.

This tool uses the default 'Tier 1' emission factors, for the carbon sequestration of broad habitats and regions. Accuracy can be increased by more specific 'Tier 2' emission factors from the literature.

EX-ACT compares the 'project scenario' (the impacts of the restoration interventions) with a 'baseline scenario'. This determines the changes in greenhouse gas sequestration that are due to the project.

In this project, restoration is achieved by passive rewilding. Carbon benefits are due to resulting improvements in ecosystem condition and reduced fire risk.

# Climate change mitigation results



Assessed total emissions (tCO<sub>2</sub>-e) over 20 years in the baseline scenario (without), project scenario (with), and the resulting emissions difference due to the project (balance)

## Project outcomes

Over the 20 years of this assessment (2022-2042), the EX-ACT tool predicts that there will be a total net emissions reduction of around **-293,953 tCO<sub>2</sub>-e**.

Due to the rewilding approach of the project, carbon benefits have been estimated by the improvements in forest and grassland condition over this time period.

No improvements in grassland condition from the restoration interventions are predicted. Improving the condition of forests is estimated to sequester around **-299,334 tCO<sub>2</sub>-e**. Emissions of **5,382 tCO<sub>2</sub>-e** are estimated from changes in animal numbers.

The estimates above exclude the impacts of reduction in fire frequency which was estimated to reduce total net emissions to up to **-296,190 tCO<sub>2</sub>-e**.

## Limitations

Due to the uncertainties associated with Tier 1 and Tier 2 emission factors, the results shown here are estimates. To increase accuracy, on-site carbon flux measurements can be used for future assessments.

The EX-ACT tool simplifies ecological processes and this adds further uncertainty.

The additional benefits of fire prevention could not be accurately captured due to difficulties in predicting the impact of rewilding on fire.

The assessment timeframe of 20 years is also relatively short in relation to ecological processes. Over timescales longer than this assessment (beyond 2042) the mitigation potential is expected to be much higher.

This method of assessing carbon sequestration is more suited to active restoration projects, due to the difficulties in predicting future land-cover change from natural regeneration.

## Associated benefits

- Improved ecosystem services from restored hydrological processes
- Increased biodiversity through species reintroductions
- Revitalisation of the local economy by nature-based businesses

### More information:

[ELSP– Iberian Highlands](#)

[Rewilding Spain](#)

[EX-ACT tool](#)

[ELSP– Natural Climate Solutions](#)



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