

CONGRESO VII IBÉRICO XXIV ESPAÑOL ORNITOLOGÍA

CÁDIZ, 13 al 17 de noviembre 2019

#NI UN GRADO MÁS NI UNA ESPECIE MENOS



LIBRO DE RESÚMENES


SEO BirdLife



SEO/BirdLife es la organización pionera en la conservación de la naturaleza y la biodiversidad en España. Nacimos en 1954 bajo el nombre de Sociedad Española de Ornitología con el objetivo de trabajar por la conservación de las aves y sus hábitats.

Nuestra labor tiene tres pilares: investigación, conservación y divulgación. Para poder conservar necesitamos conocer, es decir, investigar, y además contar con el apoyo de la sociedad, por eso es imprescindible concienciar y divulgar.

El objetivo final es lograr un mundo rico en biodiversidad, donde el ser humano y la naturaleza convivan en armonía.

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PÓSTERES



CONGRESO
VII IBERICO
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DE ORNITOLOGÍA



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TOPDEVIL-TOP-DOWN BIOLOGICAL CONTROL BY FLYING VERTEBRATES ON THE EUCALYPTUS WEEVIL.

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The current growth of the human population and its need for raw materials has led to an increased pressure over natural ecosystems and biodiversity. To meet the demand for wood products, a solution often adopted is the plantation of fast-growing trees, as eucalyptus, in monoculture systems to maximize production profitability. The eucalyptus weevil *Gonipterus platensis* is one of its main pests and has expanded around the world, causing losses of several million euros per year in the Iberian Peninsula alone. The weevil can be controlled by chemicals, by using less susceptible plants, or by classical biological control. The latter is done by the parasitoid *Anaphes nitens* and is the method preferred by landowners and managers because of its sustainability, cost/benefit relation, and absence of negative environmental effects. However, this method is ineffective in the colder areas of the Iberian Peninsula. Another method of biological control that has proved to be important in several agroforestry systems is the top-down control by vertebrate predators, such as birds, that can consume a large proportion of the pest populations. In this project, we aim to fill the lack of knowledge about the insectivorous birds and their impact on the eucalyptus weevil pest. Firstly, we will try to understand which local and landscape factors influence bird abundance and diversity inside eucalyptus plantations, and their influence on the weevil. We will also study the dietary composition of the bird community to find if and which species are feeding on the weevil. Exclusion experiments will be carried out to estimate the effect of birds over tree growth and on weevil damage. Nest boxes will be provided along eucalyptus plantations to increase the abundance of insectivorous birds and to evaluate its effects on the weevil in a before-after control-impact approach. Finally, agent-based models will be used with the previously collected information to assess the importance of birds in eucalyptus stands. Our preliminary results already suggest that when bird abundance and richness is higher the damage caused by the eucalyptus weevil is lower. A best practice manual on top-down control of the weevil will be delivered by the end of the project to share the knowledge gathered along the work. This project intends to reconcile forestry and pest control with biodiversity conservation, making forestry exploration simultaneously more profitable and more sustainable.

Topdevil

Top-down biological control by flying vertebrates on the eucalyptus weevil

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Background

Eucalyptus plantations increased in Iberia and worldwide to meet pulp mill demand.

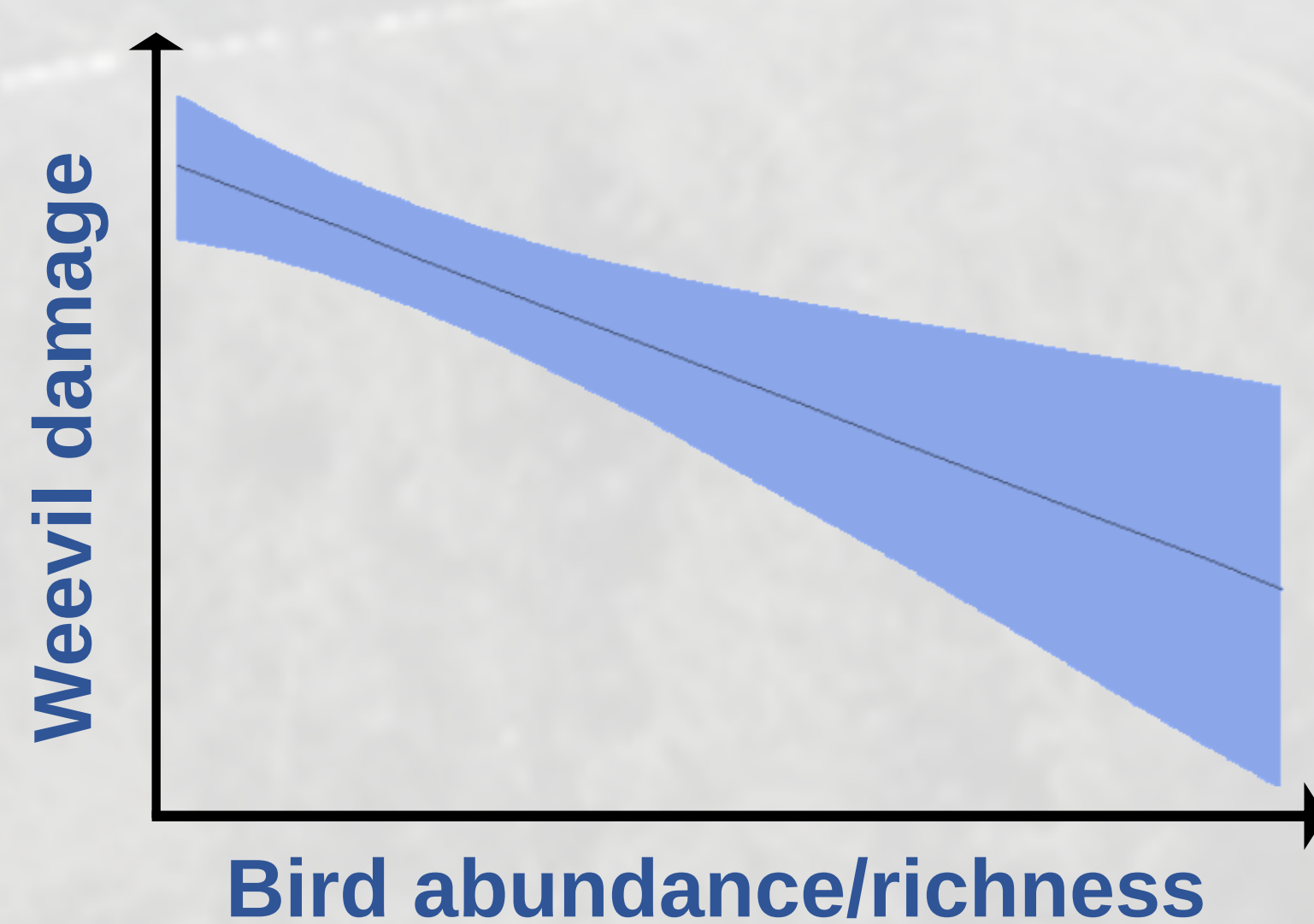
These plantations are relatively poor in biodiversity compared to other forests, and are affected by several insect pests worldwide. The eucalyptus weevil *Gonipterus platensis* is one of the main pests and cause losses of millions of euros per year just in Iberia. The top-down pest control is important in forestry systems, but there is little information on this natural control type in eucalyptus plantations.

This project intends to reconcile forestry practices and pest control with biodiversity conservation, making forestry exploration more sustainable.



GOALS:

1) Explore local and landscape factors influencing birds in eucalyptus plantations, and their effect on the weevil.

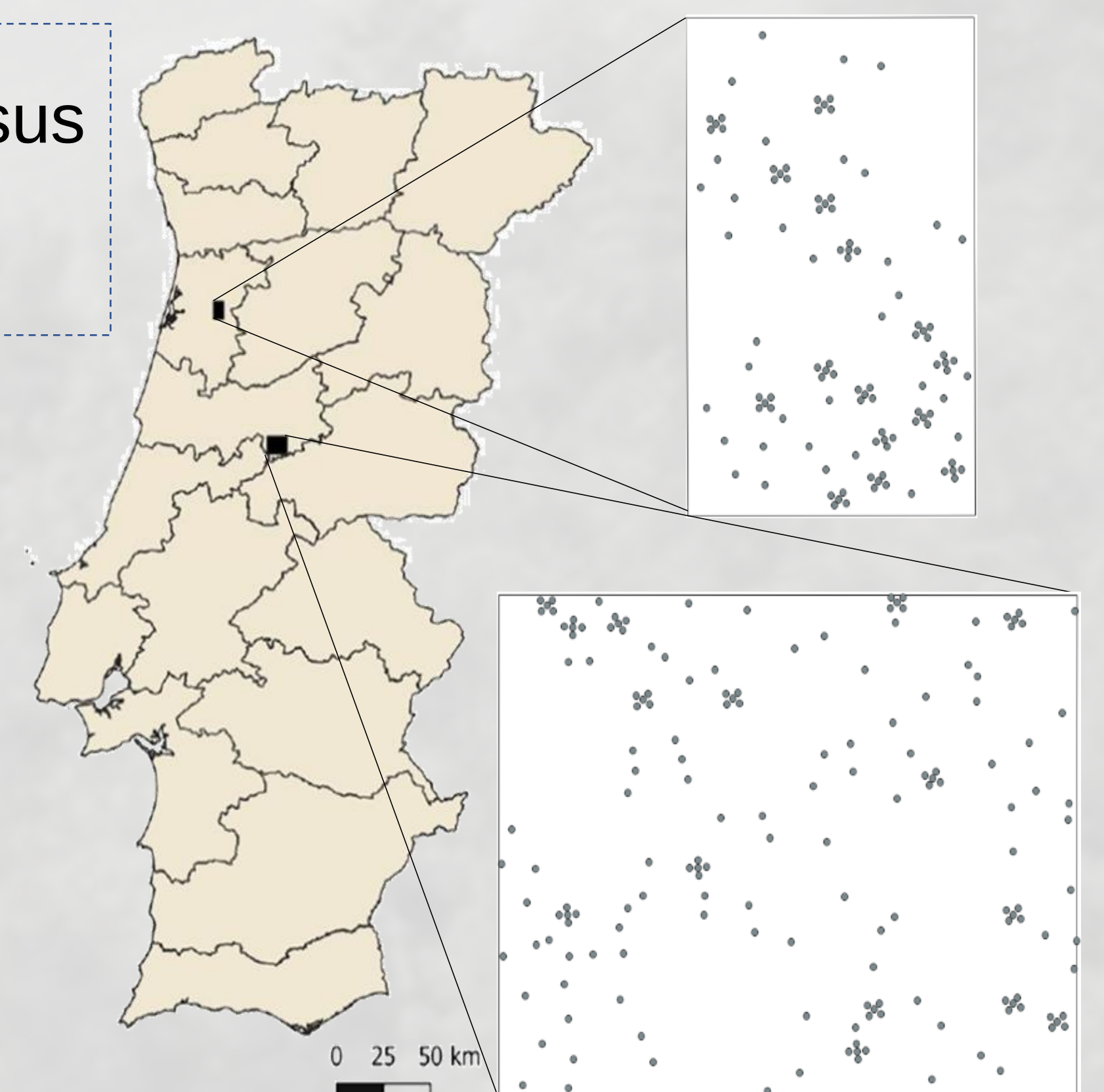


Preliminary results suggest:

lower eucalyptus weevil damage with higher bird:

- **abundance** (GLM: Estimate = -0.111, z value = -3.632, p value < 0.001),
- **richness** (GLM: Estimate = -0.111, z value = -3.386, p value = 0.001).

275 bird point census
2 seasons
2019



2) Study the dietary composition of the bird community in eucalyptus plantations.

- **328 birds of 30 species** were captured by setting mist nets monthly from April to October 2019.
- **282 droppings** were collected for molecular analysis with pest specific and generalist primers.



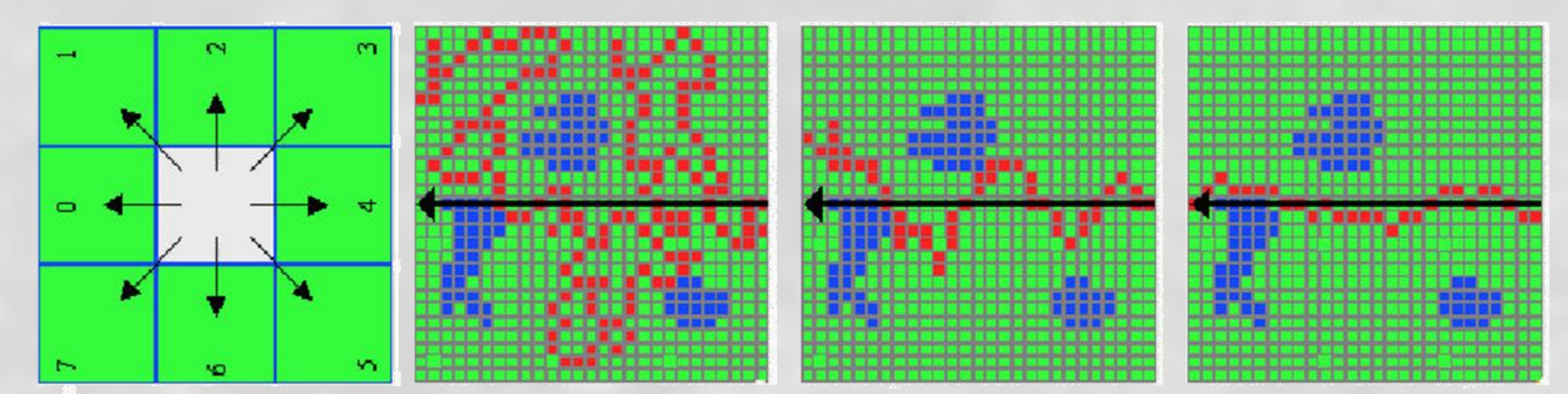
Sample 1:
Taxa A
Taxa B
Taxa C

4) Use nest boxes to increase the abundance of birds and evaluate its effects on weevil.



5) Create agent-based models to assess the importance of birds in eucalyptus stands.

ALMaSS



3) Exclusion experiments to estimate the effect of birds over tree growth and weevil damage.



6) Create a best practice manual to share with landowners and stakeholders, to encourage more sustainable forestry practises.



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