

Ecological vineyards help protecting bird population in the environment

March 7 2019



The Conservation Biology Group of the University of Barcelona describes for the first time the beneficial effect of ecological viticulture on bird population in the environment. Credit: Conservation Biology Group - University of Barcelona

Ecological farmlands help protecting bird populations and reducing the

effects of global change on the environment, according to a study published in the journal *Agriculture, Ecosystems and Environment* by the experts Joan Real, Àlex Rollan and Antonio Hernández-Matías, from the Conservation Biology Group of the Faculty of Biology and the Biodiversity Research Institute of the University of Barcelona (IRBio).

According to the study, which was supported by the Torres Family, from Vilafranca del Penedès (Spain), ecological viticulture increases the abundance and amount of species of farmland [birds](#), and favours the insectivore [bird populations](#) that help with natural control of plagues in ecological crops. This agricultural practise helps to improve the resilience of farmland birds - which are especially sensitive to [environmental changes](#) - towards the effects of global warming.

Farmland birds: at risk due intensive agriculture and climate change

Changes in agricultural production systems - from traditional to intensive - generated several environmental impacts on the environment, such as the loss of biodiversity. Currently, intensive agricultural exploitation in Europe has caused the loss of millions of farmland birds, which are also affected by global change.

In this context, the practice of ecological viticulture has spread over the last years in the sector of the vineyards, one of the most traditional cultures in the country. In Catalonia, this sector represents the first important ecological crop in the agricultural field, and one of every four vineyards has its origins in ecological agricultural production. Without insecticides, herbicides or chemical fertilizers, this practice includes a series of ecological and integrated techniques (mechanical control of diseases, etc.) in a context of a growing social interest for sustainable practices with biodiversity and the environment.

What is the impact of ecological crops in farmland birds?

The beneficial effects of the ecological crops of vineyards on several organisms were known from years ago. "However -says Àlex Rollan, first author of the study-, there wasn't much information on their real impact in the community of farmland birds".

In this context, from 2014 to 2015, UB-IRBio experts created bird censuses in a total of thirty-three vineyard parcels -designation of Origin Penedès- to see how the practice of ecological agriculture affected the community of [farmland](#) birds -insectivore ones mostly- and the most vulnerable species to climate change.

The new study describes for the first time the positive impact of the ecological viticulture on the abundance and amount of species of insectivore birds in the Mediterranean vineyards. The presence of herbaceous cover -a growing practice in European vineyards- has a beneficial effect on insectivore birds, in particular in spring and other seasons when people work on ecological crops, according to the study carried out by the Conservation Biology Group (UB-IRBio).

A more environment-friendly agricultural production

Birds are sensitive to changes and impacts that occur in the ecosystems worldwide. "Therefore, they are perfect bioindicators, since they show the state of conservation of natural systems"; says Joan Real, head of the team of Conservation Biology, linked to the Department of Evolutionary Biology, Ecology and Environmental Sciences of the Faculty of Biology and IRBio. "Knowing the factors that can interact with these bioindicators helps us getting information to improve the management of natural habitats and environmental sustainability", notes Joan Real.

The new study, published in the journal *Agriculture, Ecosystems and Environment* provides practical information for the sector of ecological viticulture and will help shape a management for a "more sustainable agricultural production regarding biodiversity conservation in the rural environment, and in particular, those birds that are endangered due the agricultural intensification and climate change", notes Antonio Hernández-Matías.

Since 1992, the Biology Conservation Group (UB-IRBio) and Torres Family Foundation, from the company with the same name, have launched several research projects and initiatives in the field of conservation of natural heritage and the design of new management tools for the [conservation](#) of biodiversity with a global and efficient perspective.

More information: Àlex Rollan et al, Organic farming favours bird communities and their resilience to climate change in Mediterranean vineyards, *Agriculture, Ecosystems & Environment* (2018). [DOI: 10.1016/j.agee.2018.09.029](#)

Provided by University of Barcelona

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