Policy Brief: Protecting farmland birds in South Tyrol, Italy

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Summary

The Autonomous Province of South Tyrol, with its magnificent Alpine scenery, provides perfect conditions for sustaining rich biodiversity. Not unlike other places in the EU, South Tyrol experiences a tension between the natural environment and the socio-economic needs of its population, which also manifests itself in an intensification of agricultural production. This severely impacts the habitats of birds, especially those who breed on agricultural land. Agri-environmental policies have been put in place to relieve this tension, with varying degrees of success. With an increasing number of socio-economic, geopolitical, as well as climate-related challenges and the accompanying competition for an ever decreasing budget, nature restoration and conservation measures have to become increasingly more effective and targeted. With BirdWatch, we propose a service which supports pertinent decision-making by offering input for tailored spatial planning and impact assessment for ecologically coherent policies.

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Adapted from **https://www.eurac.edu/doi/10-57749-08ce-cw08**

The Autonomous Province of South Tyrol in Northern Italy is characterised by a broad elevation range with natural and seminatural landscapes which consist of alpine grasslands, freshwater habitats, forests, glaciers, interspersed with agricultural land. South Tyrol harbours 141 different breeding bird species which benefit from the diversity of landscapes and microclimates found in the Alps.

But studies show an alarming decline in biodiversity. For example, agricultural intensification has turned traditional crop systems into artificial habitats, leading to increased field sizes, habitat fragmentation, and decrease of habitat heterogeneity, contributing to a farmland biodiversity crisis[1]. The abandonment of cultivated fields and pasture and the disappearance of small, family-run farms poses many challenges. Abandonment, like overproduction, leads to drastically altered landscapes, in this case resulting in a reduction in open habitats and an increase in forest cover. Overall, the changes in these mountainous landscapes have resulted in the loss of suitable habitats and nesting sites for the typical species of these environments[2].

Farmland birds are among the greatest victims of the biodiversity crisis, with meadow breeding birds being the most affected. Observations like this have led to the design and implementation of policies to protect South Tyrol's fragile environment and large-scale, multi-annual monitoring initiatives have been set up to continuously assess society's impact on Alpine biodiversity[3].

Policies supporting birdlife in South Tyrol

Currently, policies specifically targeting the protection of farmland birds in South Tyrol are sparse. Among the funding sources available for measures directly aimed at the conservation of farmland birds are the "*Wiesenbrüter projects*"

1 https://www.sciencedirect.com/science/article/pii/S0301479725031457

2 Rete Rurale Nazionale, Lipu. 2020. Common farmland birds in Italy. Update of population trends and Farmland Bird Indicator for the National Rural Network

3 https://www.eurac.edu/doi/10-57749-2qm9-fq40

in the Malser Haide[4], and in the Pusteria Valley. In case of the Malser Heide, additional funding is given to meadows who also participate in birdfriendly agri-environmental schemes supported by the **EU Common Agricultural Policy** (CAP)[5]. In Pusteria Valley, too, the cooperation of farmers is fundamental to the success of the project. For example, meadows are mowed several weeks later to protect these birds and managed extensively to increase biodiversity. The latter also includes the support of insects. The more diverse the plants in the meadows, the more insects there are. Combined with the later mowing dates, this increases the chances of successful breeding for meadow-nesting birds.

Farmland birds can also benefit from other measures, such as crop diversification or the restoration of natural or seminatural habitats, such as ponds, shrub patches and grasslands[6]. Especially the latter can provide an important contribution to the objective of landscape heterogenisation.

Funding for the management of Natura 2000 habitats, the ***Landschaftspflegeprämien***[7], have shown to have an overall positive impact on farmland biodiversity. These premiums are granted for the preservation of the traditional landscape and the biological diversity of ecologically valuable habitats, specifically for the management of Natura 2000 habitats. Financial incentives for measures which promote biodiversity on agricultural land (e.g., restricted fertilization, late mowing, establishing or maintaining landscape features and herbaceous borders) have proven to be an effective instrument in contributing to maintaining and promoting the diversity of species and habitats. Further expansion of landscape management premiums could therefore have a positive impact on biodiversity, albeit climate change may necessitate adjustments to the criteria for landscape management premiums (e.g., mowing date)[8].

Even if birds are rarely at the centre of agri-environmental policies, they still can benefit from an ecologically sound management of Alpine ecosystems. The **Alpine Convention**[9], established in the early 1990s, is leading the way for sustainable life in the Alps and is a

4 https://landwirtschaft.provinz.bz.it/de/news/schutz-der-wiesenbruter-auf-der-malserhaide-geht-weiter

5 https://civis.bz.it/de/dienste/dienst.html?id=1038144

6 https://link.springer.com/article/10.1007/s00442-022-05134-7

7 https://natur-raum.provinz.bz.it/de/landschaftspflegepraemien

8 https://www.eurac.edu/doi/10-57749-08ce-cw08

9 https://www.alpconv.org/en/home/convention/

pioneer of its kind as the first international treaty aimed at the sustainable development and protection of an entire mountain range. It provides guidelines for the sustainable management and preservation of the Alpine ecosystems, but also to safeguard regional cultural identities, heritage and traditions. The Protocol on the Implementation of the Alpine Convention in the area of "Nature Conservation and Landscape Management"[10] requires the signatory states to cooperate in mapping and monitoring protected areas and in the systematic observation of nature and landscapes. Bird monitoring in the Alps is of crucial importance for the implementation of the Alpine Convention.

How can BirdWatch play its part?

With the wealth of information on successful measures, including those proposed and supported by the landscape management premiums, and on the status and trends in biodiversity, coming from large-scale, cross-Alpine monitoring programmes, the foundation for nature restoration and conservation is already in place. What remains challenging are the scale, location and type of measures needed to improve and maintain farmland biodiversity, ecosystem health and their functional integrity.

For instance, a *landscape-spanning approach* towards policy implementation could play an important role in achieving agri-environmental and climate goals, while also addressing socio-economic needs. This could be combined with a *co-design strategy*, involving actors representing the different view points of parties affected by a policy, which can also be crucial to ensure policy coherence.

BirdWatch provides decision-support for spatial planning on landscape level, to help define, monitor, evaluate and report on policy targets. Satellite-based monitoring allows to quantify the habitat structure and makeup, as well as their changes over time. Farmland bird habitat suitability supports environmental policies by serving as an indicator to detect and delineate areas of high ecological importance or feed into large-scale, harmonized, and repeatable assessments of habitat condition and trends. This can, for example, support **the evaluation or design of new protection zones**, following the example of the Malser Heide.

Habitat suitability modeling allows for the **estimation of the impact of climate change** on species and thus can be combined with climate

10 https://www.alpconv.org/fileadmin/user_upload/Convention/EN/Protocol_Conservation_of_Nature_EN.pdf

scenarios. Studies like these are especially important along the steep topographic gradients of the Alpine environment, where the warming climate is shifting zones suitable for farming upslope.

As habitat models reflect the species- and region-specific habitat requirements, they provide quantifiable guidelines for ecologically consistent policy-making, especially if new policies and a **common vision for a region** are needed. This can become important for the implementation of the EU Nature Restoration Regulation (NRR), for which each Member State will have to provide a comprehensive, coherent Nature Restoration Plan by the end of this year.

To **address conflicts** w.r.t. policies or farm management requirements due to differences in species-specific preferences, BirdWatch also includes a spatial optimisation framework. This framework proposes agri-environmental measures by taking into account the respective economical, operational and ecological consequences. In this way, BirdWatch can optimise farmland practices which **support both agricultural productivity and the ecological needs of farmland birds**.

Project information

BirdWatch - a Copernicus-based service for the improvement of habitat suitability of farmland birds via satellite-enabled monitoring, evaluation and optimisation of CAP greening measures

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