



*A service to measure and improve biodiversity using satellite data for monitoring, evaluation and optimization of CAP greening initiatives*



Horizon Europe  
Research and Innovation  
Programme

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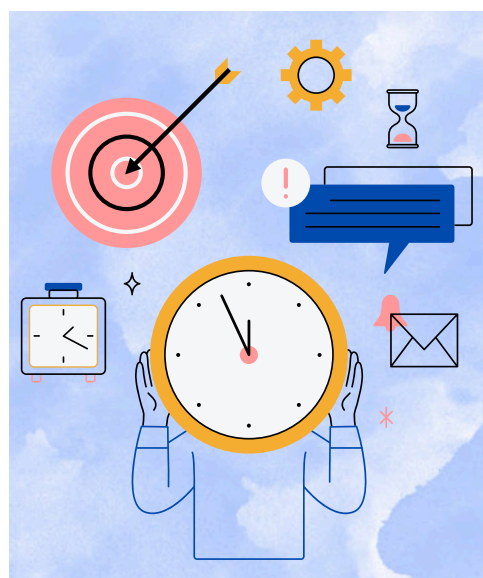


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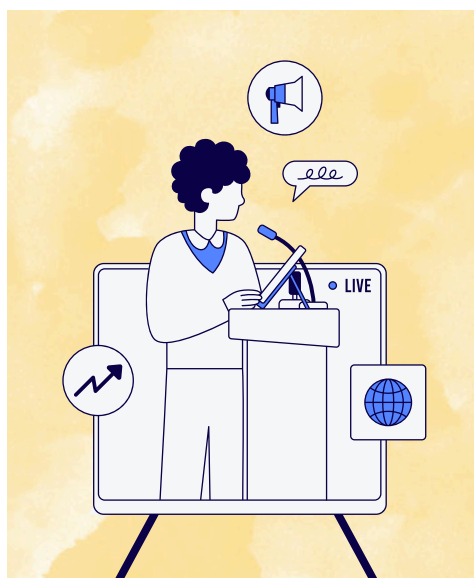


BirdWatch is in its last project year and technical development has been a major focus of the last several months.

In September, we passed our Midterm Project Review, which gave us the green light to continue on our path to develop the BirdWatch platform.

The first part of the newsletter will update you on where we're at.

### OUTREACH ACTIVITIES



Even though platform development and testing naturally dominate this last project year, we continue to attend important conferences.

This newsletter gives you an overview where we recently presented BirdWatch and where you could meet us in the upcoming months!

### GUEST ARTICLE ON AGRI-ENVIRONMENTAL MEASURES IN GERMANY



Our project partner Bio-land, who helps us to implement Birdwatch, are specialists in sustainable agriculture and deeply familiar with relevant policies and their inherent intricacies.

Bioland's nature protection expert, Katharina Schertler, shares her experiences with German agricultural policy in the 3rd part of this newsletter. Enjoy!





## WHAT HAVE WE BEEN UP TO?

**BirdWatch** is developing a service to monitor farmland bird habitat suitability in 4 regions: Flanders, South Tyrol, Lithuania and Germany.

To enable this, habitat descriptors were derived for each region. Newsletter #2\* explained the process in more detail, so we spare you here.

With the descriptors ready, habitat models for each of our ten target bird species were generated. If you like to know more about this part of the process, check our newsletter #4!

Of course, not all of our ten target species occur everywhere. For example, you won't find the Black-tailed godwit breeding in your field in South Tyrol :)

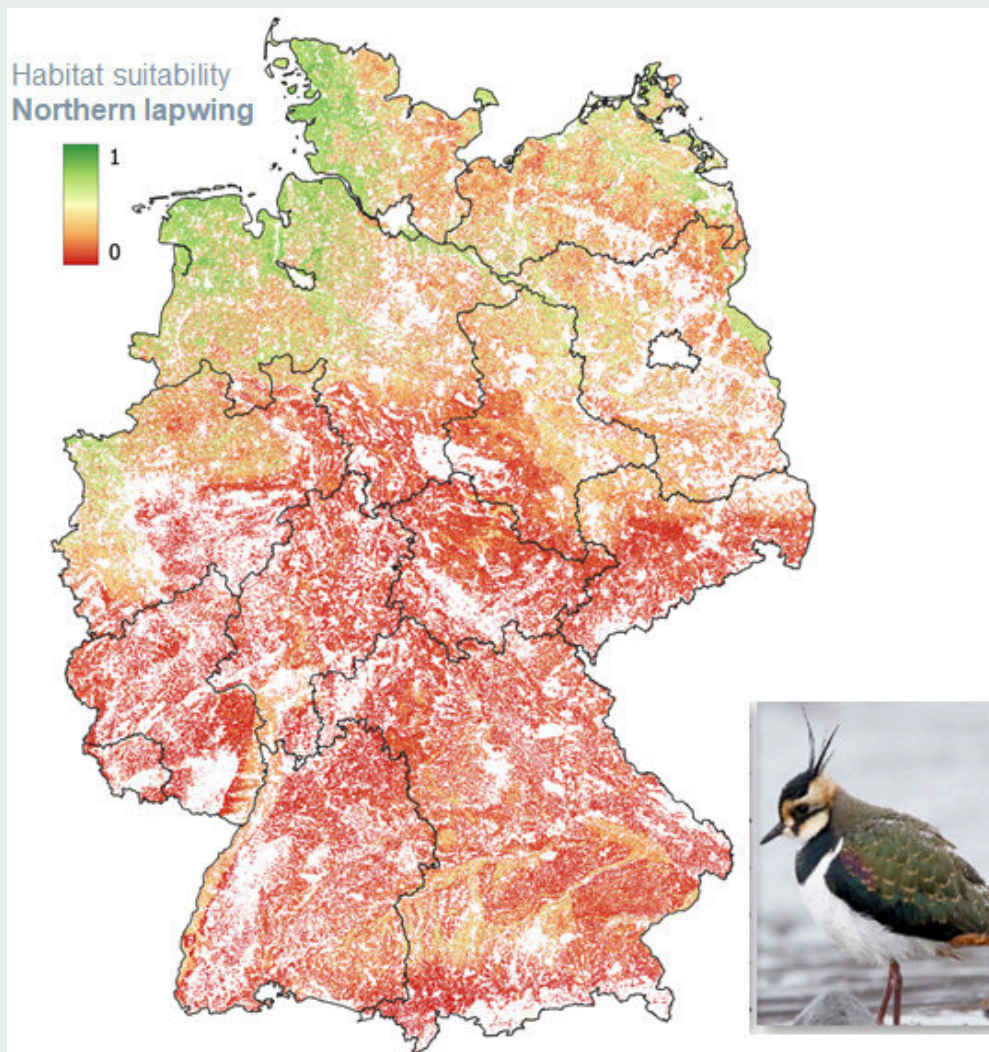


Figure 1: Habitat suitability of farmland across Germany, calculated for the Northern lapwing

Fig. 1 shows the farmland habitat suitability for the Northern lapwing across Germany.

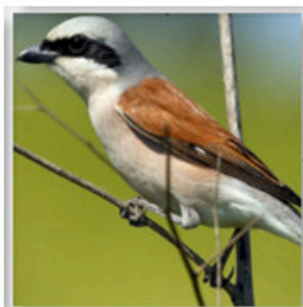
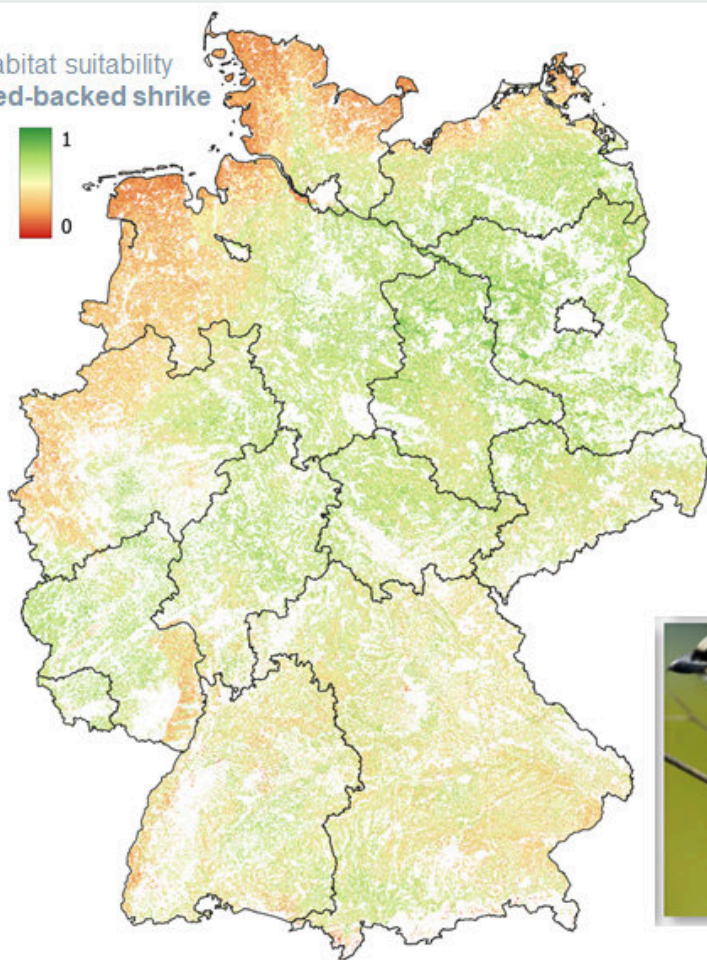
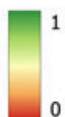
Similarly, Fig. 2 depicts the farmland habitat suitability, this time for the Red-backed shrike.

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## WHAT HAVE WE BEEN UP TO?

Habitat suitability  
Red-backed shrike



**Figure 2:** Habitat suitability of farmland across Germany, calculated for the Red-backed shrike

Looking at the two figures above, it is clear that the impact of farmland (and thus, the impact of activities on farmland) differs between different bird species.

This is why the Bird-Watch project also develops an optimisation service, allowing to determine which measures increase overall farmland bird habitat suitability.

How this is done was portrayed in our newsletter #2\*.

Apart from the mathematical (and thus computational) complexity, the challenge is to collect the various constraints in each region, under which farmland can be made more bird-friendly.

The various agri-environmental policies in each region are an obvious source for constraints. One question we tried to answer here is how much budget is allocated for which measures?

Knowing available budget for agri-environmental measures (see Fig. 3 for an example) or species-specific conservation targets allows us to calculate pathways for an improved farmland suitability.

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## WHAT HAVE WE BEEN UP TO?

Conservation measures	Subsidy cost (€/ha)
No conservation measure	€0/ha
Flower field	€1998/ha
<u>Seed-yielding crops (not harvested)</u>	€2053.0/ha
1 <sup>st</sup> crop: <u>seed-yielding crops</u> 2 <sup>nd</sup> crop <u>alfalfa + herbaceous grassland</u>	€2027/ha
Botanical grassland	€2000/ha

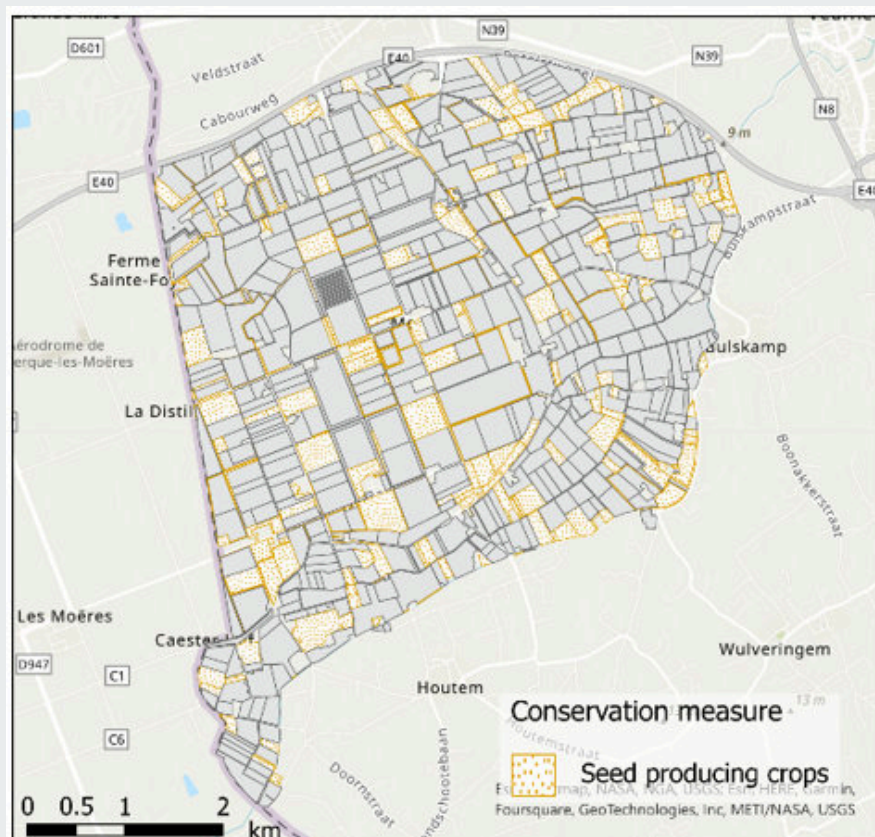
As the optimisation service is still in development, we only show conceptual images here!

**Figure 3:** Example for subsidised measures, collected to optimise habitat suitability of farmland across a test region

The optimisation process not only derives the specific measures with which to improve farmland habitats but also helps to spatially allocate where these measures should be applied.

How the output of the optimisation service could look like, is shown in Fig. 4. Here, the target was to increase the area which is suitable for a species by 500 ha. The output highlights the crop parcels where a specific measure should be applied.

**Figure 4:** What measures should be applied and where to increase the suitable area by 500 ha? Example how the output of the BirdWatch optimisation could look like.





## WHAT HAVE WE BEEN UP TO?

Finally, to string everything together, we are developing a platform with which to access BirdWatch's monitoring and optimisation services.

Once it is ready, the Bird-Watch services will be available via a web-based application.

How this is going to look like is currently designed and tested internally.

Figure 5 gives you a first glance on how the front-end could look like.

As of now, it is possible to explore habitat suitability by selecting a target region and zooming in and out.

Alternatively, by knowing the ID of a farm parcel, one can also directly view its associated habitat suitability for locally occurring bird species (as exemplified in Fig. 5).



**Figure 5:** First version of our BirdWatch frontend, depicting the aggregated habitat suitability for several bird species; the polygon, outlined in blue, shows a farmland parcel for which the habitat suitability and area size is shown on the left panel.



**Last** summer, we had the chance to present BirdWatch as a potential input for result-based payment (RBP) schemes at the **SERE conference** in Tartu, Estonia\*. Theme of the conference was “**Bridging Science, Practice, and Policy of Nature Restoration**”, clearly with an eye on the upcoming Nature Restoration Law.



**Figure 6:** At the SERE 2024 conference, we presented BirdWatch as a possible input for result-based payment schemes.

In a RBP scheme, the level of payment someone receives is linked to the quality of environmental services provided. The higher the associated

score, the higher the payment. BirdWatch could deliver an input for the scoring which is then linked to payment levels.

In February of this year, we presented BirdWatch at **BIOSPACE25\*\***, the “[...] first international conference exclusively dedicated to the application of Satellite Remote Sensing (SRS) across the various dimensions of biodiversity, and addressing the use of Earth Observation in all realms, from terrestrial, fresh-water, coastal to marine ecosystems.”



**Figure 7:** BIOSPACE25 was organised and hosted by ESRIN, one of the specialised centres of the European Space Agency (ESA)

[\\*SERE 2024 conference](#)

[\\*\\* BIOSPACE25 conference](#)

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The latest opportunity to meet with partners of the BirdWatch project was at the **GEO Global Forum\***, on the 7th of May, in Rome.

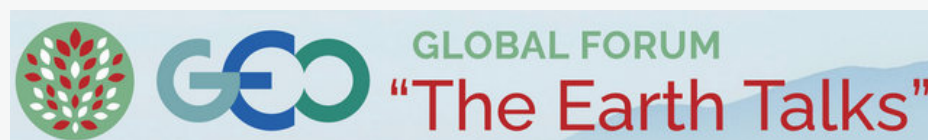


Figure 8: BirdWatch is one of the services presented by the BirdWatch lead partner LUP GmbH

End of June, we will also be at the **Living Planet Symposium\*\*** in Vienna to present BirdWatch in one of the poster sessions.  
**If you want to meet up, don't hesitate to contact us.** The contact details are listed further below.



Figure 9: Let us know if you are attending the Living Planet Symposium this June and want to meet up!



Needless to say, there will be more opportunities to connect. One of them is focus of the last part of this newsletter!

[\\* GEO Global Forum 2025](#)

[\\*\\* Living Planet Symposium 2025](#)

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## GUEST ARTICLE

Guest Article by Katharina Schertler from **Bioland e.V.**, the largest organic farming association in Germany. At Bioland, she gives advice on nature conservation to Bioland's large network of farmers.

Since the 1990s, so-called agri-environmental schemes ("Agrarumweltprogramme" - AUKM in German) have been the central instrument for promoting sustainable agriculture in Germany.

Due to Germany's federal system, the policy landscape has developed into a complex, often confusing system, varying significantly from one federal state to another.

Only with the introduction of the "**ecoschemes**" at the start of the new funding period in 2023 has a nationwide funding instrument been available.

But this has not made things any simpler.

At the heart of these programs lie schemes aimed at **preserving biodiversity, protecting water, soil, and climate**, as well as **promoting organic farming**.

They include erosion control, grassland extensification, to leave agricultural land fallow, among others.

The programs are co-financed through the **2nd pillar** of the **Common Agricultural Policy (CAP)**, meaning parts of the funding come from the European Agricultural Fund for Rural Development (EAFRD) and parts from the budgets of the federal states.

This explains the significant differences between programs:

Wealthier states can afford more extensive and diverse programs with higher subsidy rates,

while the options of less affluent states are more limited.

For illustration: In Bavaria, a farm receives €314 per hectare of organically managed land, compared to just €220 in the state of Brandenburg.

The programs also differ in content and structure. This is partly due to historical reasons:

each state has developed its own systems, definitions and focus.

Additionally, the natural environment and agricultural structures vary significantly: in Lower Saxony (Northwest Germany), there are programs supporting migratory birds in winter and during migration, while in Bavaria, the use of alpine grassland (alms) is supported.

Responsibilities vary as well.



## GUEST ARTICLE

Guest Article by Katharina Schertler from **Bioland e.V.**, the largest organic farming association in Germany. At Bioland, she gives advice on nature conservation to Bioland's large network of farmers.

In some German states, both agriculture and environmental protection are overseen by only one ministry. But more commonly, there are two separate ministries and thus two separate programs.

In Bavaria, the so-called "KULAP" is managed by the agricultural administration.

Measures like these are often referred to as "**light green**": they have moderate environmental impact but are broadly applicable and easier to implement.

In contrast, the The Contractual Nature Conservation Program ("Vertragsnaturschutzprogramm" - VNP) includes "**dark green**" measures, managed by the nature conservation administration.

These have a higher environmental impact and

are more targeted but are also harder to implement and suitable for fewer farmers.

Agri-environmental program commitments usually last five years.

This means farms must commit for a longer period, but they also gain more security and can rely on fixed premiums. Participation is voluntary and decided by the farm manager.

The newly introduced ecoschemes differ from agri-environmental programs in that they are financed through the **1st pillar of the Common Agricultural Policy**. Also, they are the same across the whole country and are applied for one year. Experts classify them as "light green" measures.

These programs are of particular interest to a project like Birdwatch, as

they influence both current and future land use. Even though **only a few programs are explicitly tailored to specific bird species** or species groups, **many impact habitat quality**, e.g., the share of fallow land, crop types, and the intensity of grassland use.

The extent of their impact, such as how many farmers in a region participate in a given program, depends not only on the program content and funding level but also on other factors:

Whether participation is attractive for a farm also depends on **revenues** (e.g., market prices) and **production costs** (e.g., lease, fertilizer). Long-term forecasts are difficult, and **strong regionalization** makes the situation in Germany particularly complex.





## AND FINALLY....

... are you

A farmer?

A member of a farming organisation / farmers network?

Working for a paying agency?

Involved in agri-environmental policy making?

Focusing on ecological or ornithological research?

A member of a nature conservation organisation?

Working for a NGO focussed on nature conservation and restoration?

A concerned citizen?

A bird lover?

Then, we would like to **invite you to take part in a first evaluation of our BirdWatch platform!**

During the evaluation, we will gather feedback on topics such as usability or overall impression of the platform and let test users check out results for the habitat suitability of local farmland bird species as well as derived management suggestions based on spatially optimised agri-environmental measures.

The platform is currently being built for our four test regions **Flanders** (Belgium), **Germany**, **Lithuania** and **South Tyrol** (Italy).

In case you do not live in one of these areas but are still interested in checking out the platform, this is, of course, not a problem :)

If you would like to participate or have questions regarding the evaluation, please contact us via email (email contacts are listed further below).

We will then provide you with more information on the evaluation and when it will be accessible!

## CONTACT & INFO



*Don't hesitate to get in touch with us!*

### Project Management

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