



Nature Networks

How can the electricity grid help restore
fragmented ecosystem?



LIFE Elia-RTE

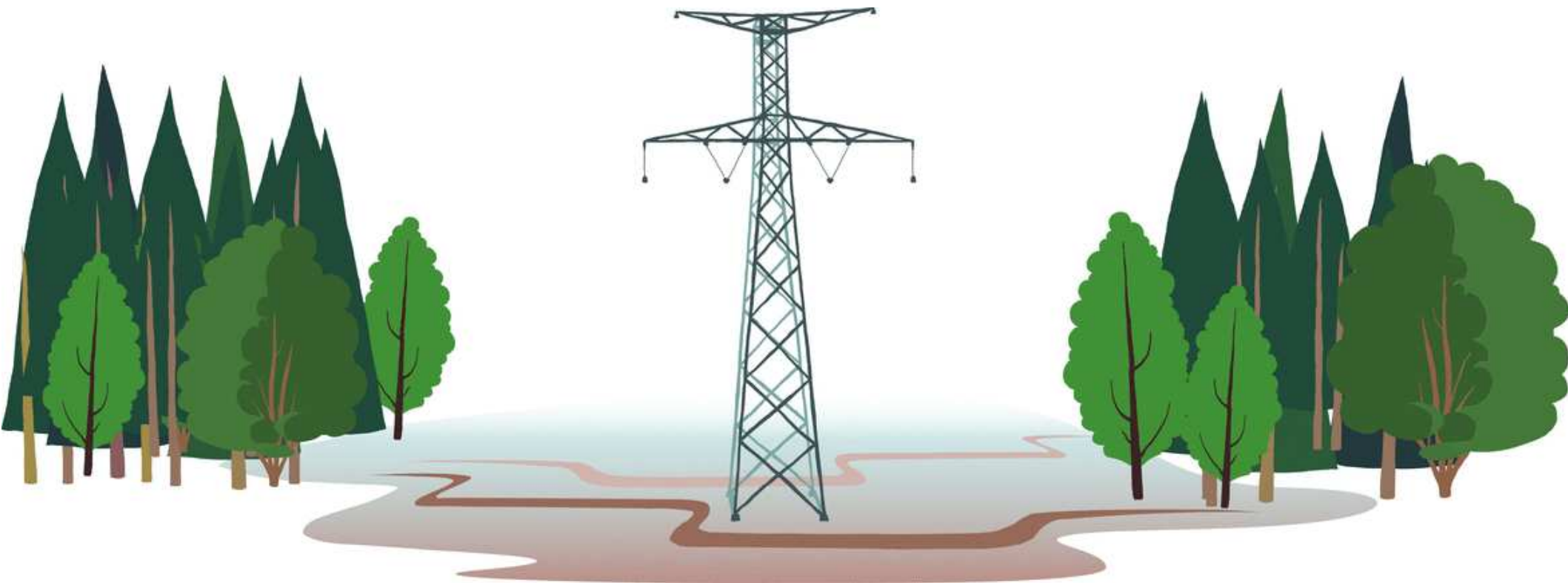
- EU co-funding 2011-2017 together with Belgian and french TSO
- Operators: Elia (Belgium) and RTE (France)
- Cleared corridors in forest to insure power provisioning
- Vegetation Management → Integrated Vegetation Management

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VM → IVM

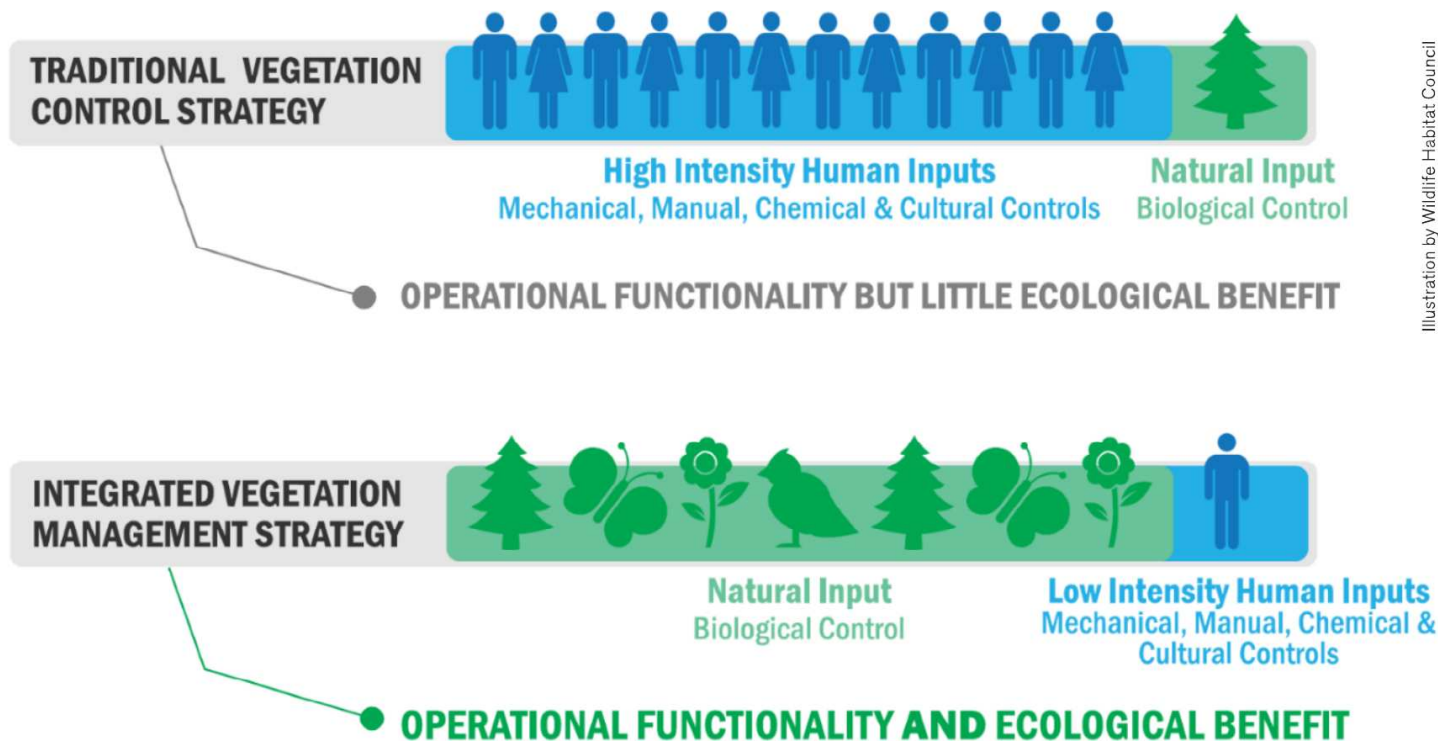


Illustration by Wildlife Habitat Council

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The LIFE Elia-RTE project

6.5 years

(2011-2017)

€3.2 M



Persons

28 Belgium 7 France

Sites

486 Belgium 42 France

ha restored



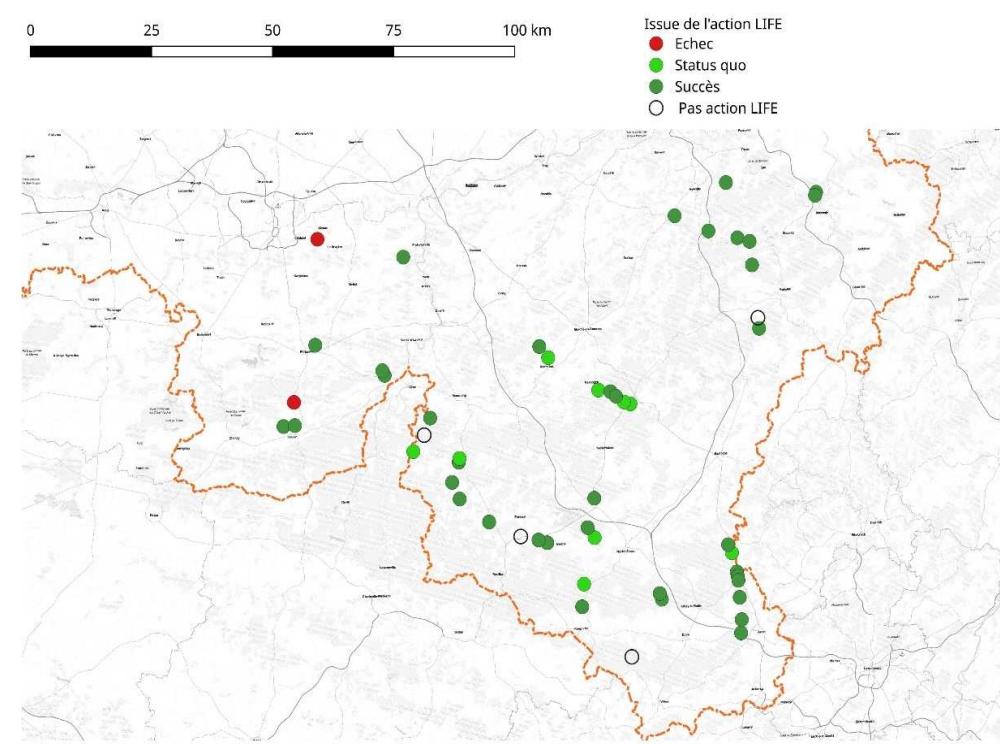
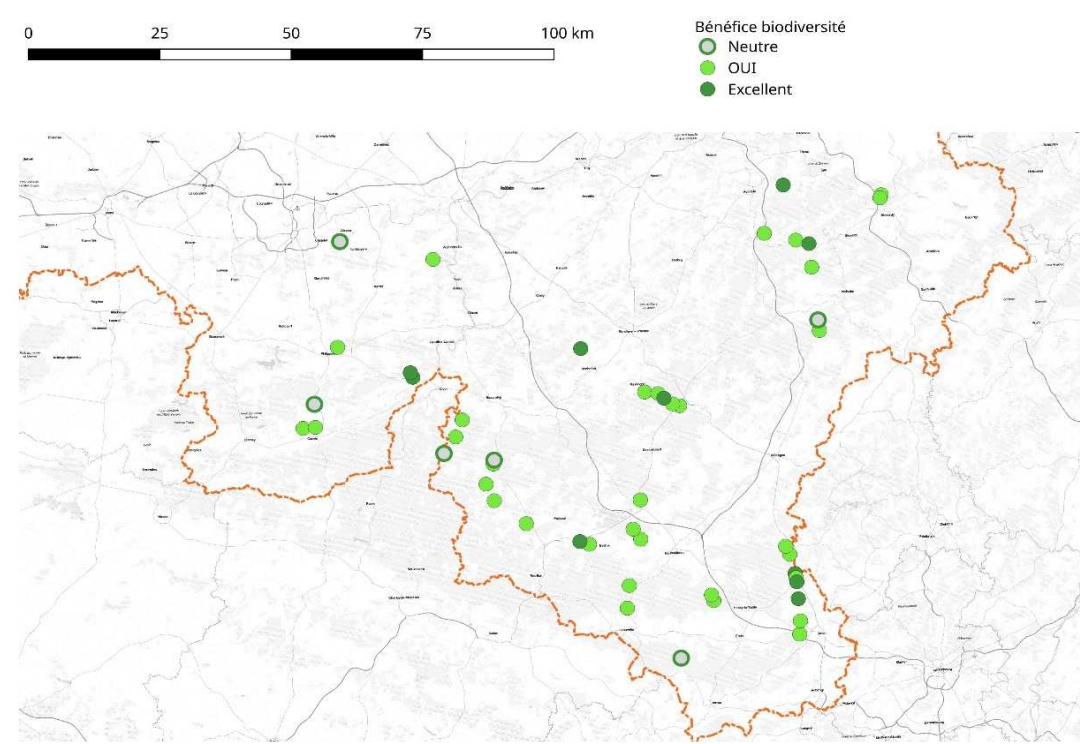
Field actions



European countries

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Elia's **after-LIFE plan (2018-2022)** to assess the effects on biodiversity
Reports available (in french!) for:

- 2020 and 2021 on <https://www.ecofirst.eu/en/our-publications>
- 2022: a final report will be delivered (in English). Keep updated on linkedIn !

Results in 2020

- **Scenario A : Failure** of the LIFE action (1/52 sites = **2 %**)
- **Scenario B : Success** of the LIFE action (37/52 sites = **71 %**)
- **Scenario C : Effect of LIFE action beyond the expectations** (10/52 sites = **19 %**)
- **Scenario D : No restoration** action but the implementation of the new management plan **leads to a positive evolution** of the habitat (4/52 sites = **8 %**)



Habitat fragmentation

- What is the effect of linear infrastructures on habitats?
- Powerlines, roads, motorways, waterways, train railways have very different impacts on wildlife
- Powerlines right-of-way: a barrier vs. a facility?

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- Multi-species approach (France) on the impacts of powerline safety corridors on mammals:
 - Roe-deer
 - Fox
 - Hedgehog
 - Pine marten
 - Bank vole
- Population genetics
- Banded animals (GPS collars)
- Direct observations (bats)

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PROGRAMME RTE – PNR08

2012-2015

Evaluation de l'impact du Réseau de Transport d'Electricité sur la connectivité du massif ardennais pour des mammifères sauvages.

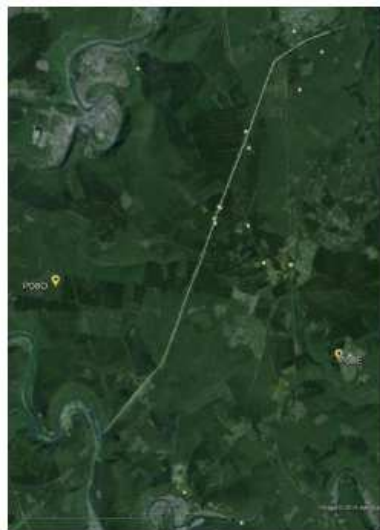
Responsable du programme

Rémi HELDER, Université de Reims, Centre de Recherche et de Formation en Eco-éthologie (CERFE), 5 rue de la Héronnière, 08240 Boulton-aux-Bois

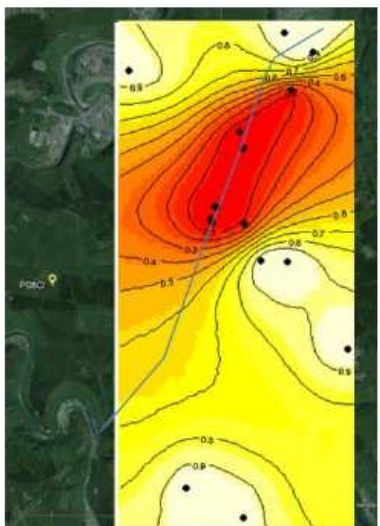
Membres de l'équipe

Clara Bardonnet, Carole Bodin, Pauline Hubert, Marina Mergey, Thomas Quintaine

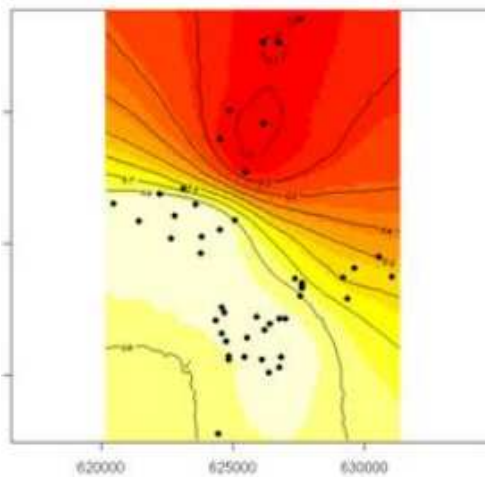




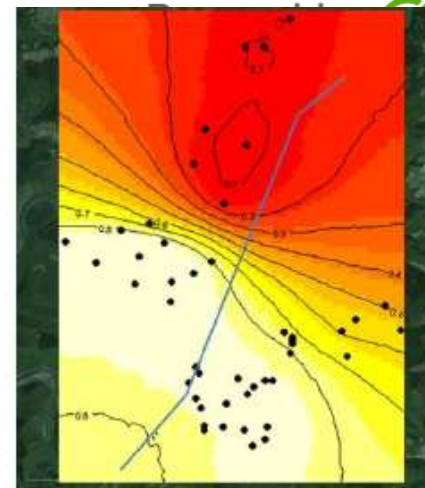
Fox ↑



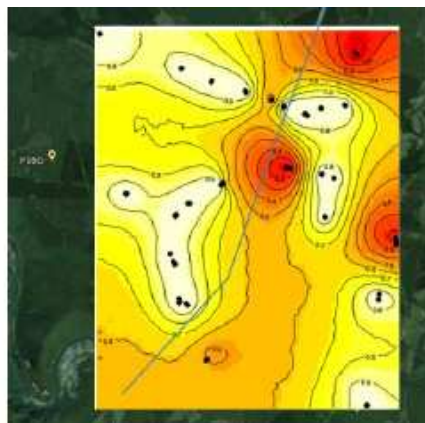
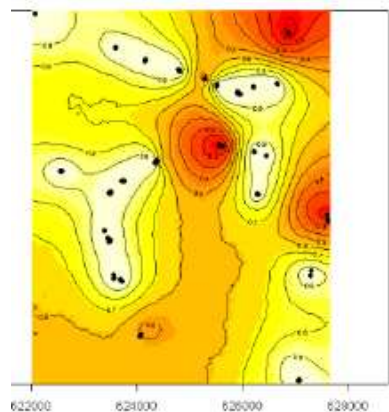
Bank vole ↓



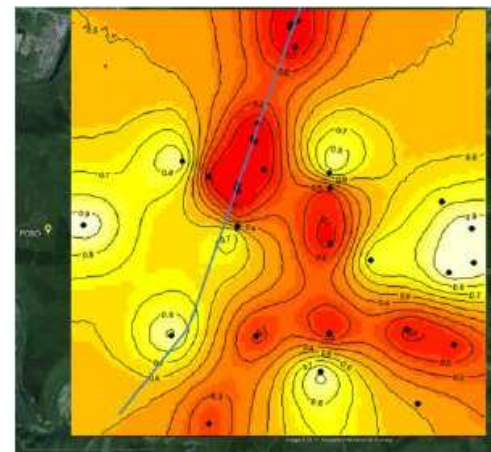
Roe-Deer ↑



Pine marten ↓

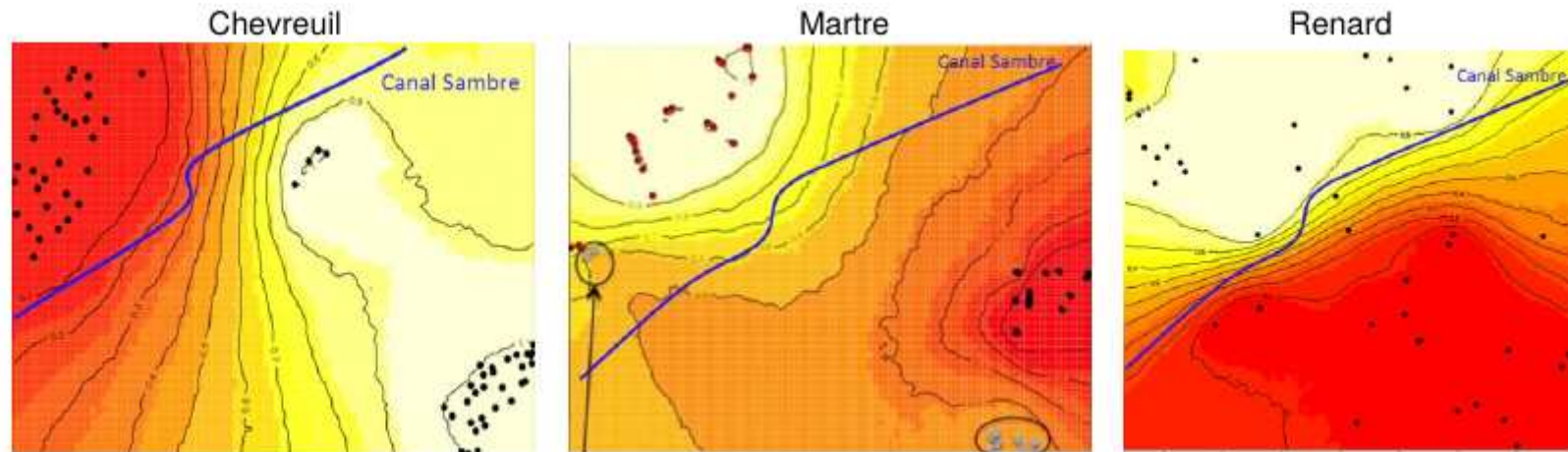


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No effects on genetic fluxes for these 4 species
whereas a river induced a strong effect on 3 of them



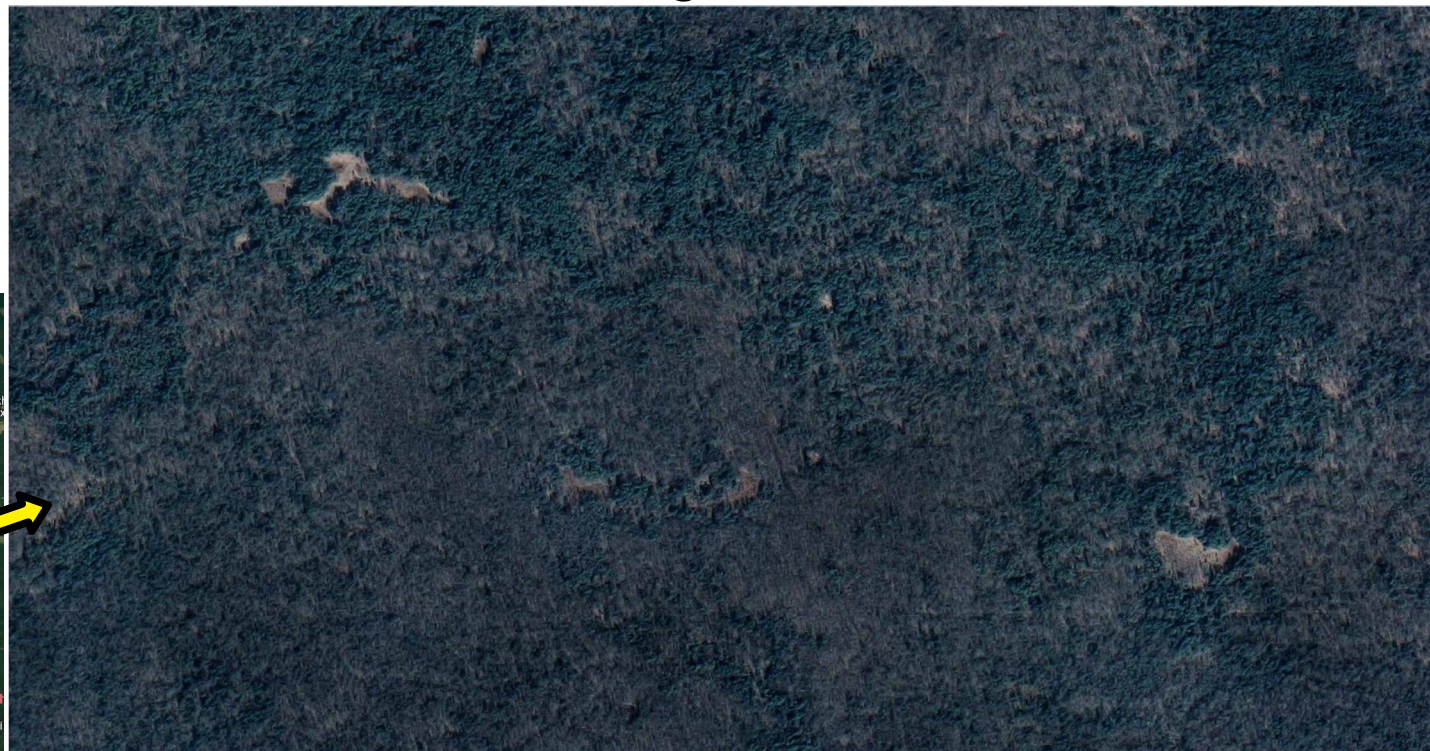
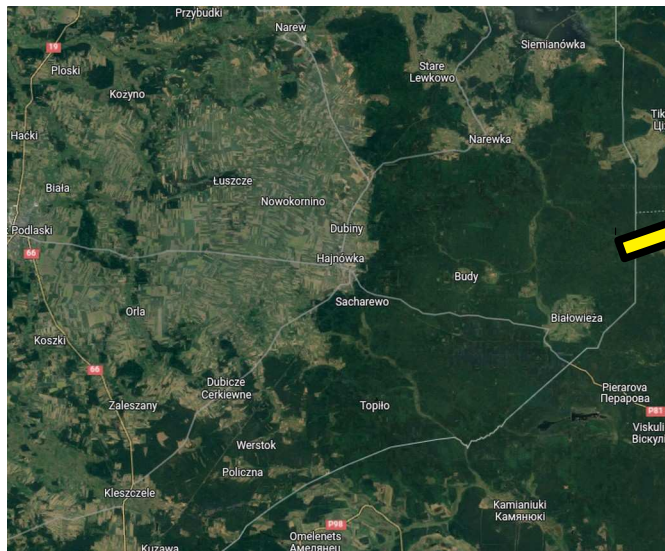
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Forest ecology

- Forests are not only made of trees!
- Powerline corridors: an alternative to natural glades?



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IVM of powerlines: an opportunity to reconnect fragmented ecosystems

- **Habitats:** restoration, increased surface and continuity, create stepping stones (ponds)...
- **Species:** colonise new areas for hunting, breeding and moving

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Study cases from LIFE Elia-RTE

- Diversified meadow instead of bracken
- A butterfly heading north: suitable habitats
- Ponds as stepping stones for dragonflies, amphibians and snakes

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Habitat: before-after evolution

Fays-les-Veneurs

- Corridor widening planned by Elia
- Public owner (municipalities of Paliseul and Bertrix)
- Covered with common bracken

Before



During



During



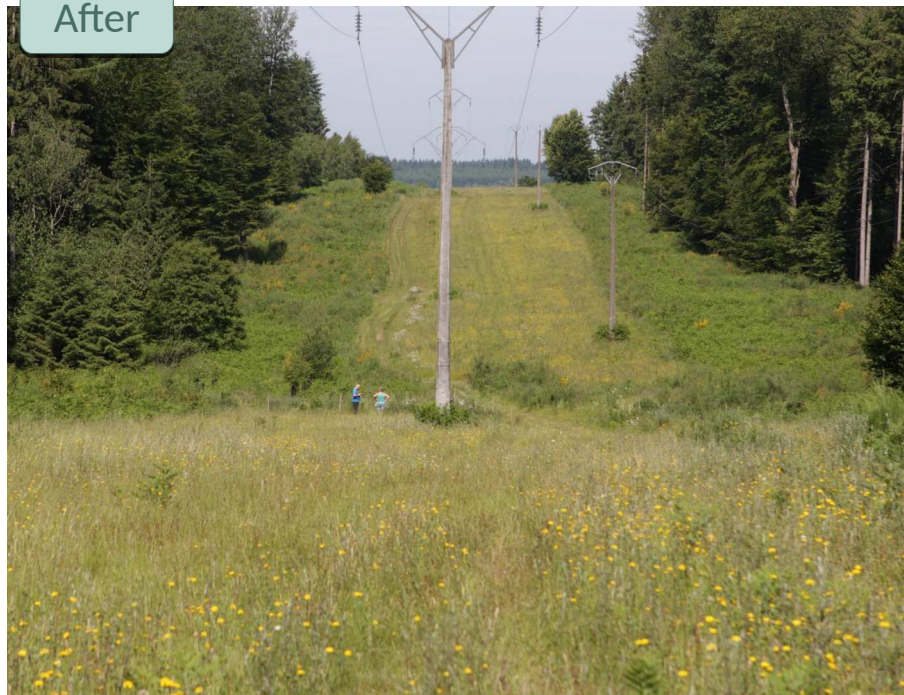


Before-After evolution

- 4.2 ha hay meadow (Natura 2000 Habitat: "6510"))
- Agro-Environmental Package => sustainable management by third-party
- Public sensitisation (viewpoint)



After



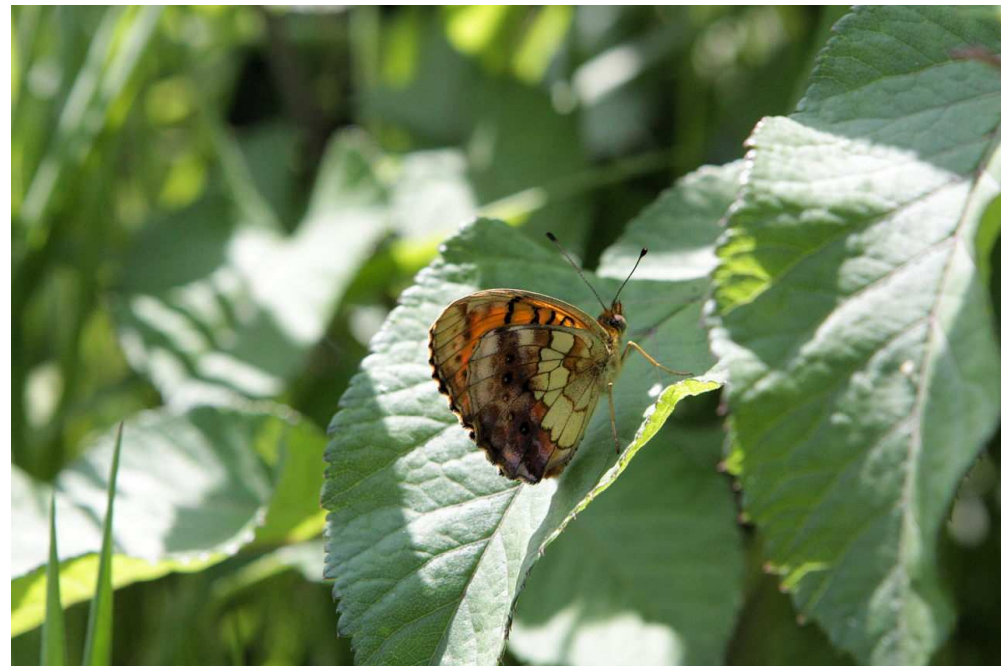
After





The marbled fritillary is heading north...

- Butterfly species formerly absent from northern Europe moved fast towards northern areas (global warming effect?)
- Became one of the most common species in LIFE sites of Elia's grid in 2-3 years
- Typical species of forest edges (bramble)



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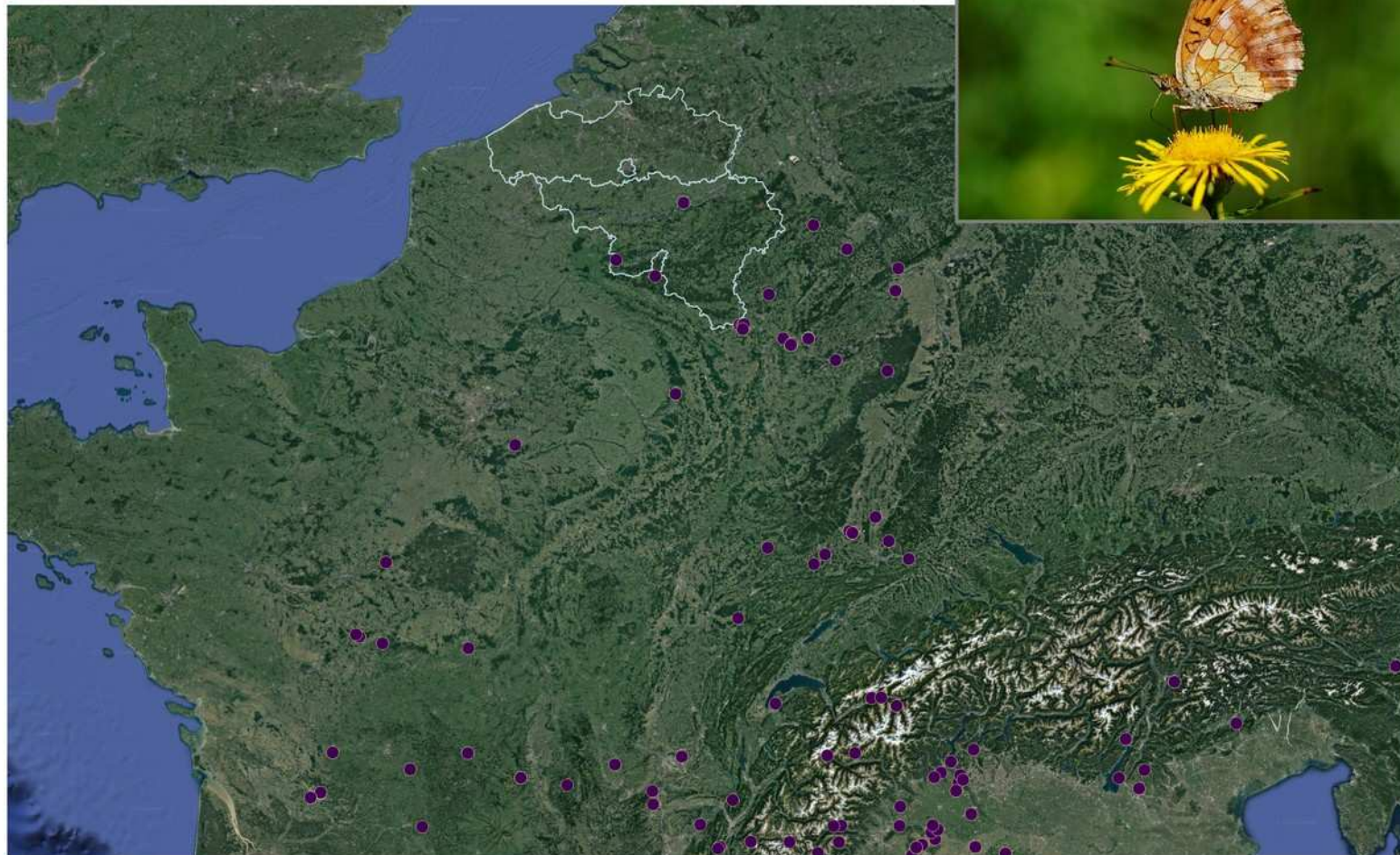
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BREDAP

● 1988 - 2017

Marbled fritillary (*Brenthis daphne*)

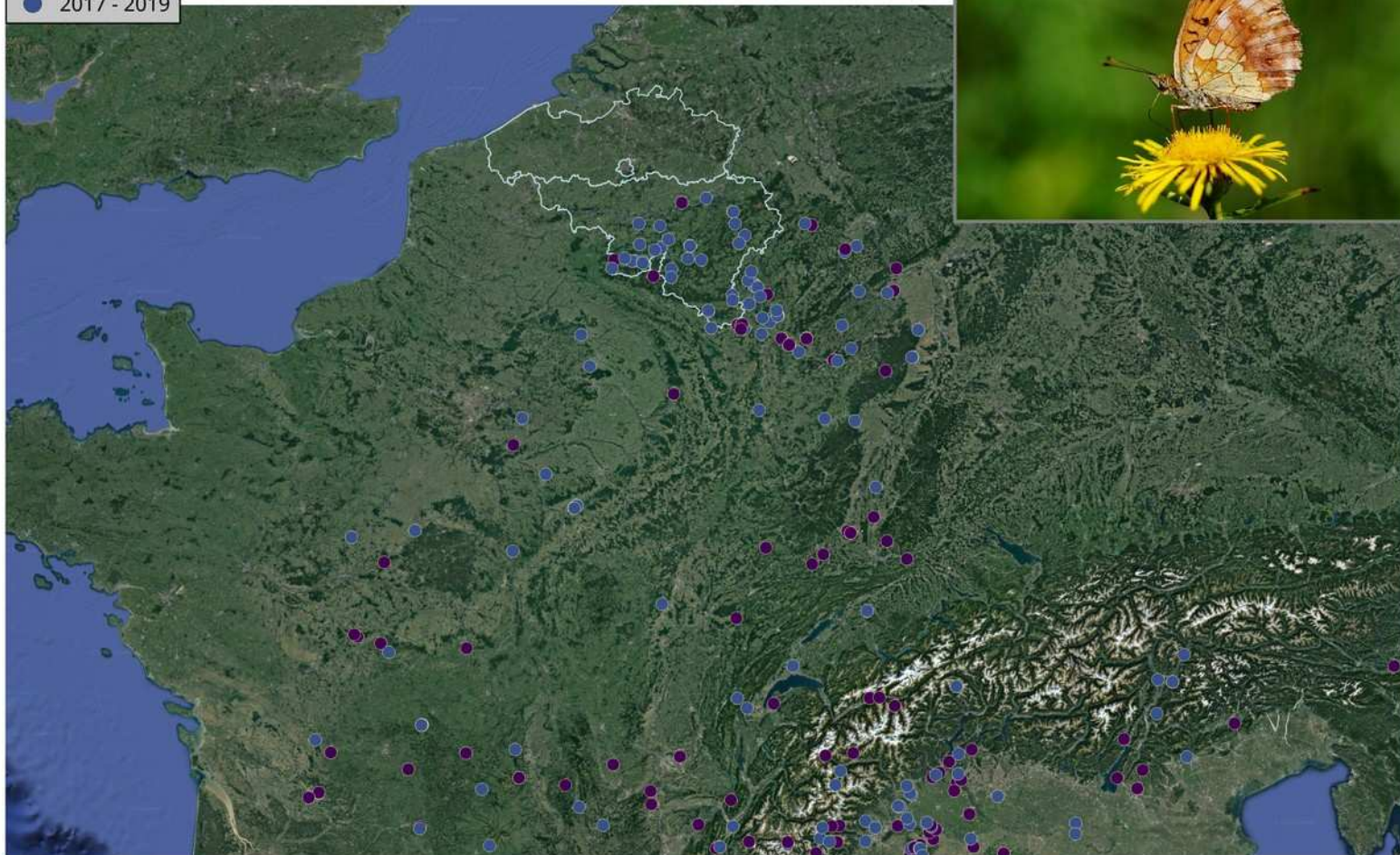




Marbled fritillary (*Brenthis daphne*)

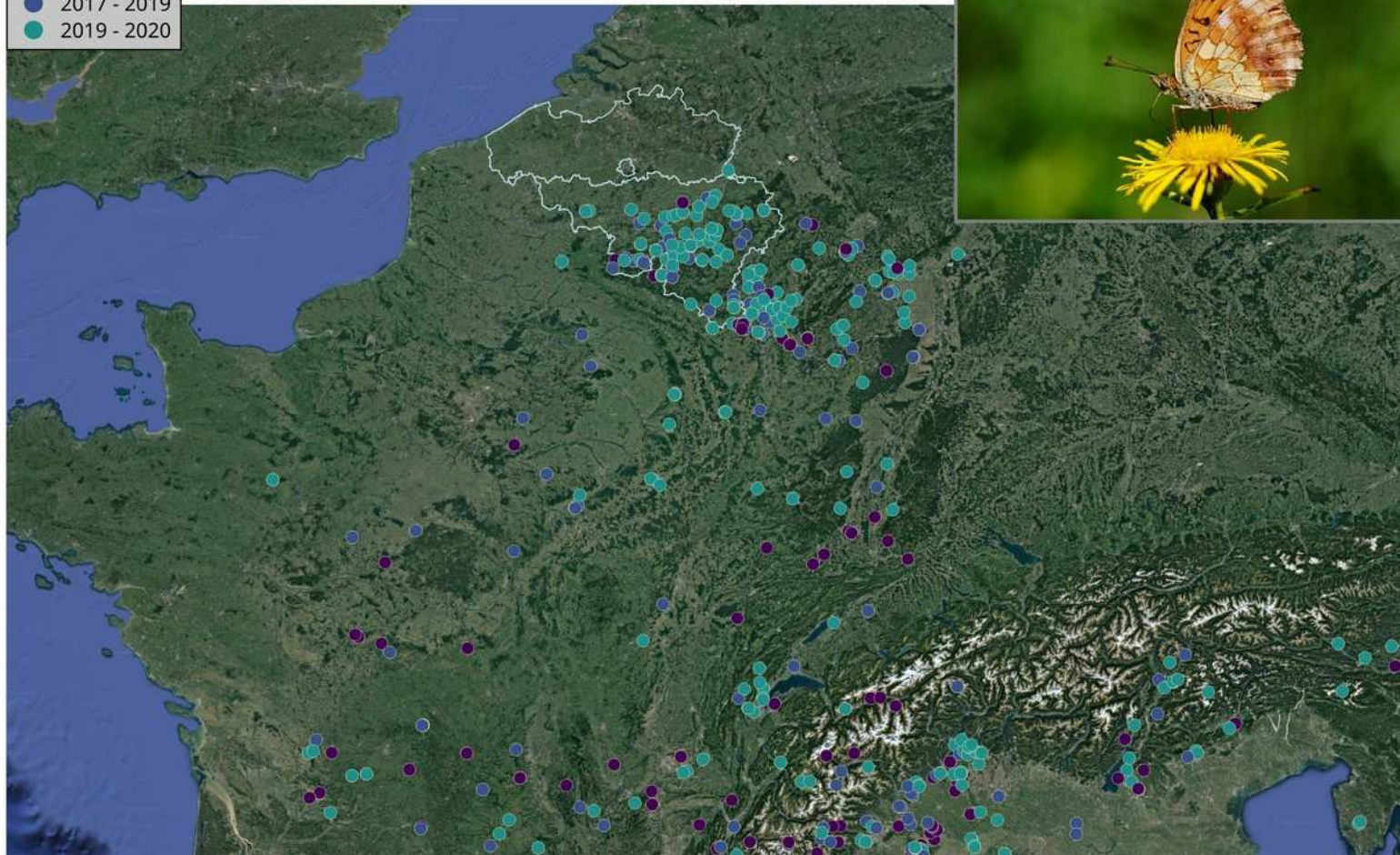
BREDAP

- 1988 - 2017
- 2017 - 2019



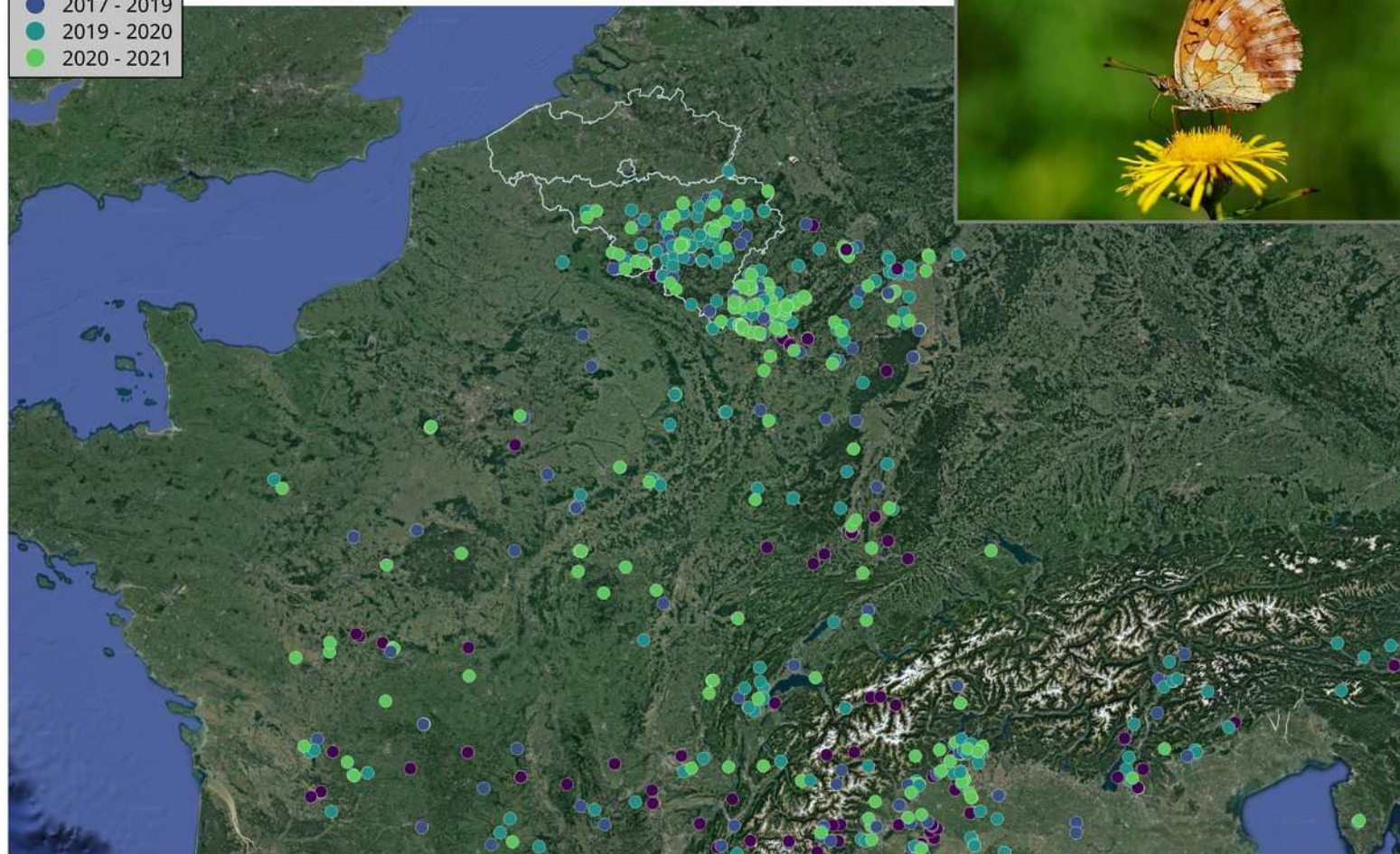
Marbled fritillary (*Brenthis daphne*)

BREDAP
● 1988 - 2017
● 2017 - 2019
● 2019 - 2020



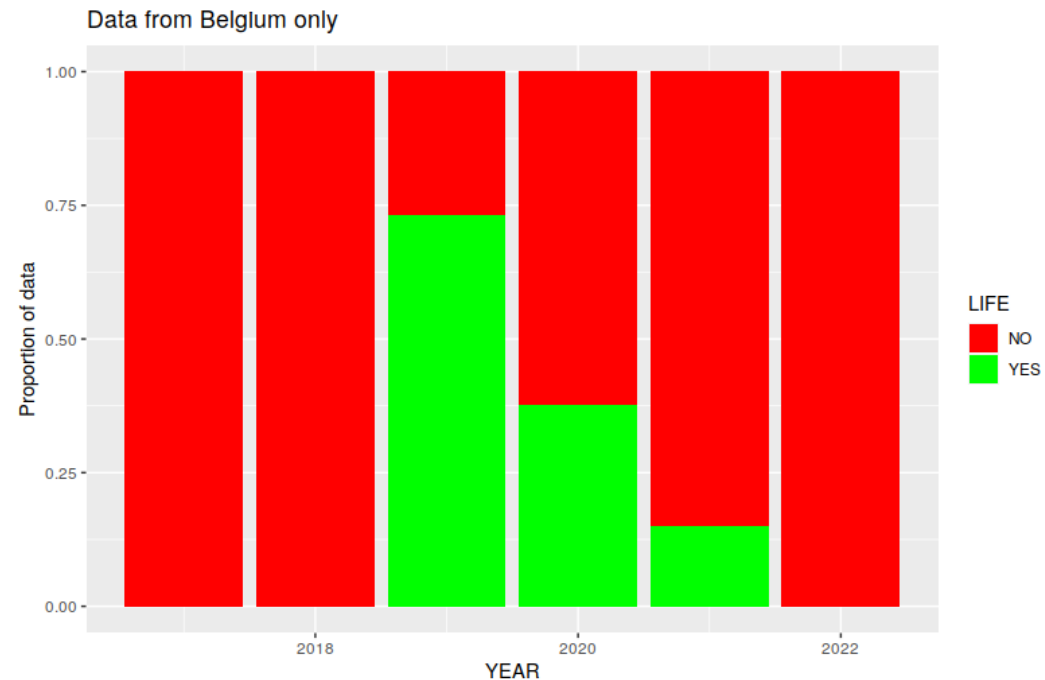
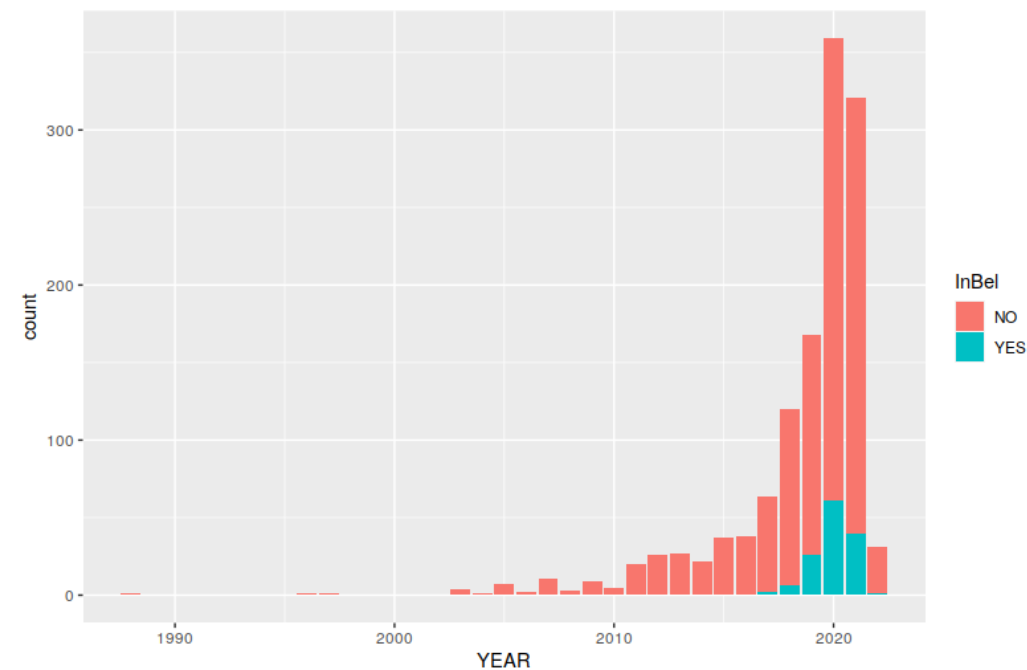


Marbled fritillary (Brenthis daphne)





The marbled fritillary is heading north...



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Ponds as stepping stones



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Wrap-up

- Powerline grid can represent an opportunity to manage better or restore habitats and populations of species
- IVM is mainly a question of changing practices (can be implemented without additional costs)
- Social responsibility:
 - Agreements with third-parties for sustainable management
 - “Lost areas” not lost for biodiversity
 - Open public areas to people
 - Contribution to the resilience of forests in a changing climate

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Thank you for your attention!

