



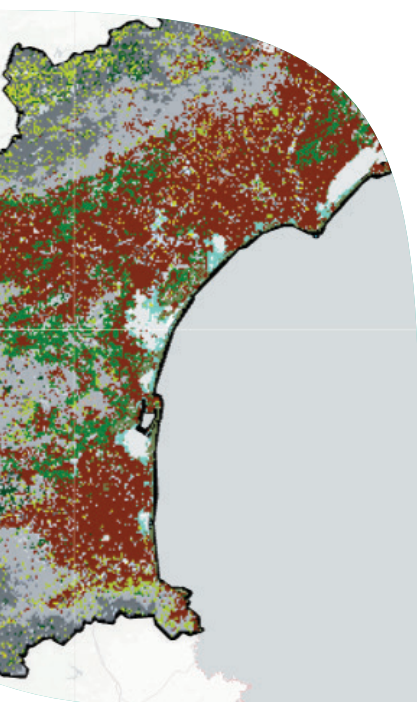
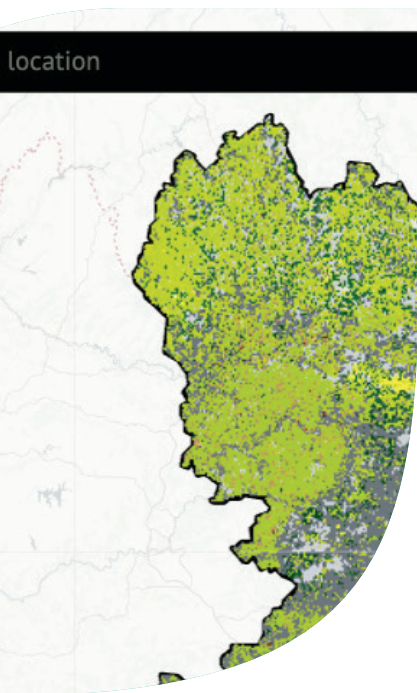
High-resolution species and habitat maps

DESCRIPTION

This tool consists of a new generation of very high-resolution (50 × 50 m) species and habitat maps available at European scale, developed within the MAMBO project by Inria and CIRAD. The maps are generated by highly innovative AI models combining multi-modal deep learning for large-scale species distribution modelling with a specialised large language model, Pl@ntBERT, for habitat inference from plant assemblages. Together, these approaches describe all plant species and EUNIS habitats with unprecedented spatial detail at continental scale.

It integrates remote sensing data with large biodiversity datasets to produce EU-scale maps of species distributions and habitat extent. These are made interactively explorable through the GeoPl@ntNet platform, enabling spatial analysis, visualisation, and monitoring of biodiversity patterns and habitat dynamics across Europe. Maps are also directly downloadable as GeoTIFF raster files via the online catalogue, supporting offline use in conservation, environmental assessment, land-use planning, and biodiversity research.





BENEFITS OF USING THE TECHNOLOGY

The key strength of this tool lies in its combination of EU-wide coverage, fine 50 m spatial resolution, and interactive online exploration, bridging the gap between raw Earth observation data and actionable biodiversity indicators. By leveraging state-of-the-art AI models and satellite imagery, the maps provide harmonised, high-resolution biodiversity information that would be impossible to generate through traditional field-based approaches alone. They support improved monitoring of habitat extent and biodiversity patterns across Europe, contribute to evidence-based environmental decision-making, and strengthen the evidence base for biodiversity conservation, statutory reporting, and policy frameworks including EU biodiversity strategies. Being fully open access, the maps are available to a wide range of users without barriers, maximising their potential for uptake and impact.

TARGET USERS

-  Scientific researchers in plant ecology, conservation biology, and biodiversity informatics
-  Public authorities and environmental agencies responsible for habitat assessment and biodiversity reporting
-  Conservation organisations and NGOs monitoring habitat extent and species distributions
-  Environmental consultancies delivering assessments and land-use planning support
-  Biodiversity monitoring initiatives requiring harmonised, EU-scale spatial data
-  Citizens and educators interested in exploring European biodiversity patterns



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