

The *BioFUNField* and *BioFUNBase*, digital tools in support of the Biodiversity and Ecosystem Function Network

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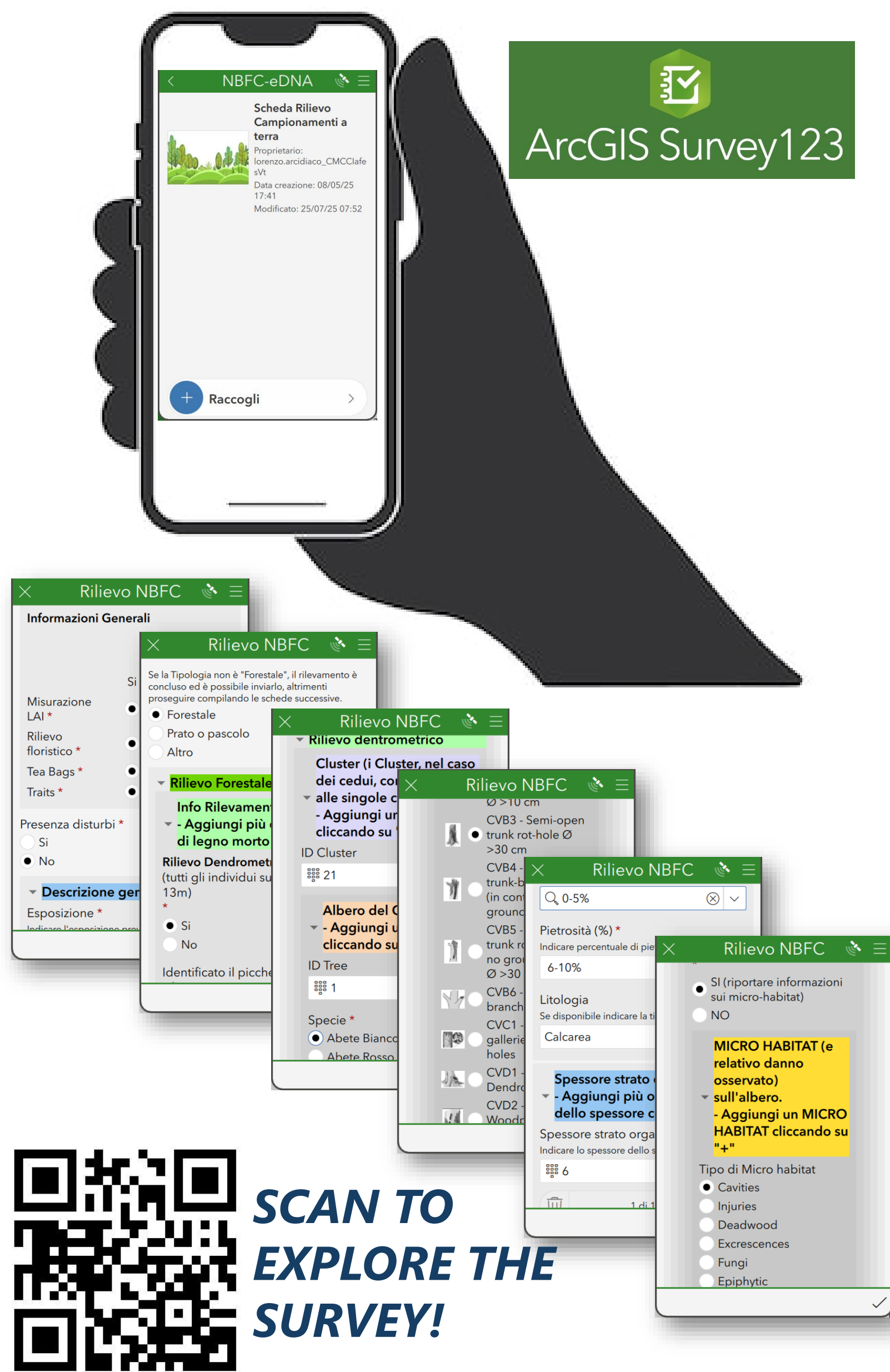
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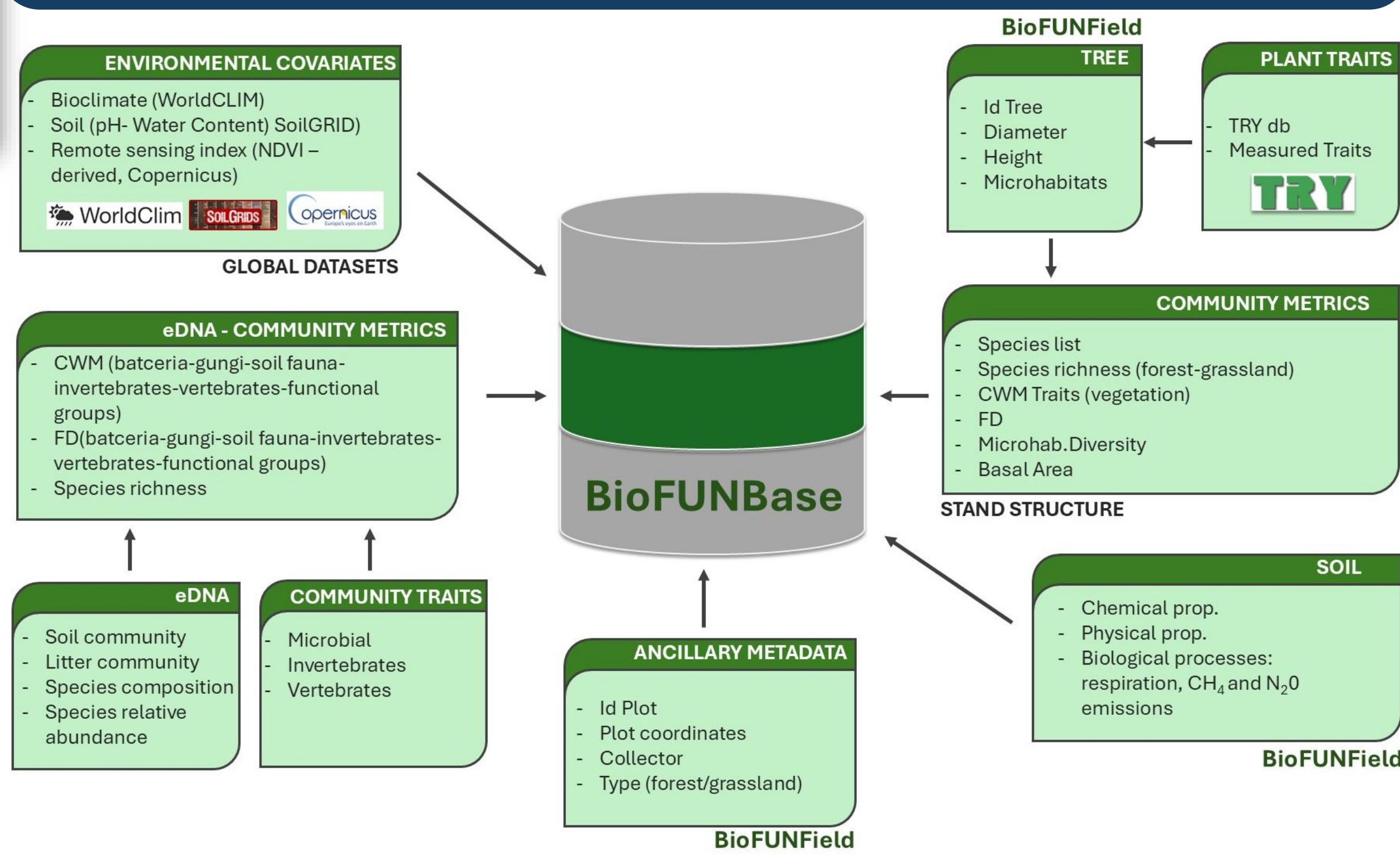
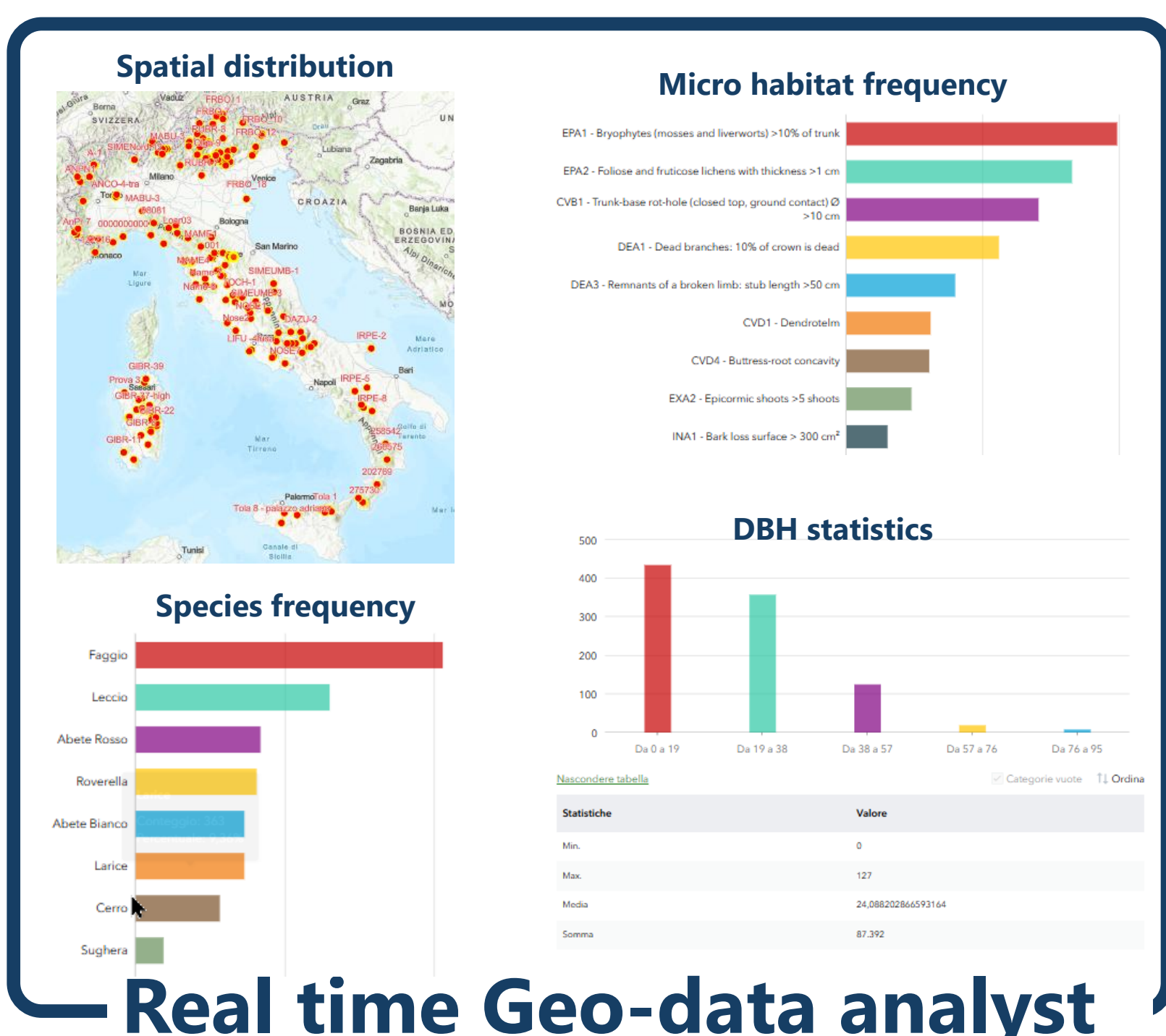
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Background

Large-scale biodiversity research requires extensive, standardized datasets to address complex ecological and management questions. Traditional field methods are often inefficient for broad monitoring, making digital tools essential for harmonizing protocols and integrating data into structured databases. Within the National Biodiversity Future Center, the **BioFUNField** app, based on ESRI® technology, supports systematic sampling of forest and grassland plots, linking community-level attributes such as soil, eDNA, and stand structure with ecosystem functions including productivity, biomass, soil respiration, and methane emissions in the **BioFUNBase** database. BioFUNField collects quantitative and qualitative georeferenced data, dendrometric measurements, and multimedia documentation. It works on GNSS-enabled devices, online or offline, allowing real-time or delayed cloud uploads and multiple operators to contribute simultaneously. The database architecture mirrors forest hierarchy, connecting sites, clusters, trees, and microhabitats, and integrates both stand-level and fine-scale parameters. This project supports real-time holistic Geo-data analysis of geographic data related to biodiversity and ecosystem functions, with visualization tools based on dynamic dashboards that produce tabular, spatial, and infographic outputs for research and management. BioFUNBase merges field data with external sources such as WorldClim, SoilGrids, TRY, and GloBI, enabling comprehensive analyses across multiple scales. BioFUNField provides a foundation for standardized survey protocols, the creation of a comprehensive ecosystem function database, and the development of a scalable monitoring network from national to global levels.



SCAN TO EXPLORE THE SURVEY!



Data collection, integration, and visualization within the National Biodiversity Future Center



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