

Explanation

This indicator measures the age distribution of records within a dataset. For spatial maps, it calculates the average (mean) year of all species occurrence records within a specific grid cell, indicating how recent or historical the data in that cell is. For time-series analyses, the value is calculated as a running historical average. It calculates a cumulative mean at each time step based on all records collected from the beginning of the dataset until that time point. This tracks how the 'center of mass' of the dataset changes over time as new records are added, revealing whether historical or newer records are dominant.

-  **High value (recent mean year):** The majority of the data in the grid cell was collected recently. This is often driven by citizen science data over the last few years.
-  **Low value (older mean year):** This indicates that a large portion of the species occurrence records consists of older museum collections or long-running monitoring programs.

Applicability for policy

-  **Monitoring survey history:** The indicator helps visualise how survey effort has evolved across space and time, highlighting areas that have been surveyed recently as well as regions with limited recent monitoring.
-  **Data recency assessment:** Grid cells with lower mean observation years rely more heavily on older records and may require re-surveying to ensure that management decisions are informed by up-to-date biodiversity data.

Limitations

A recent mean year is not necessarily an indication of quality, as some countries or regions have been conducting comprehensive biodiversity monitoring for many years and will therefore reflect an older mean year of occurrence, while others may show a recent mean year due to, e.g., the sudden availability of large amounts of citizen science data.

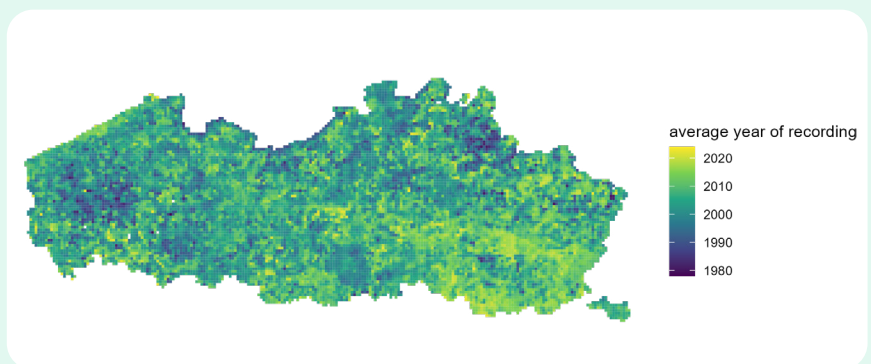


Figure 1: This figure shows the spatial distribution of the average year of recording for native flowering plants in Flanders, based on records collected since 1975. GBIF Occurrence Download <https://doi.org/10.15468/dLknsn44> Accessed from R via rgbif (<https://github.com/ropensci/rgbif>) on 2026-03-16.

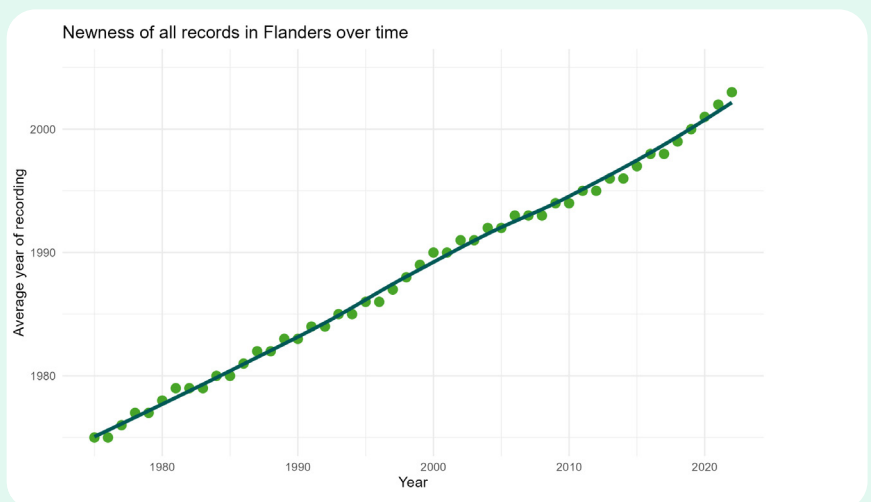
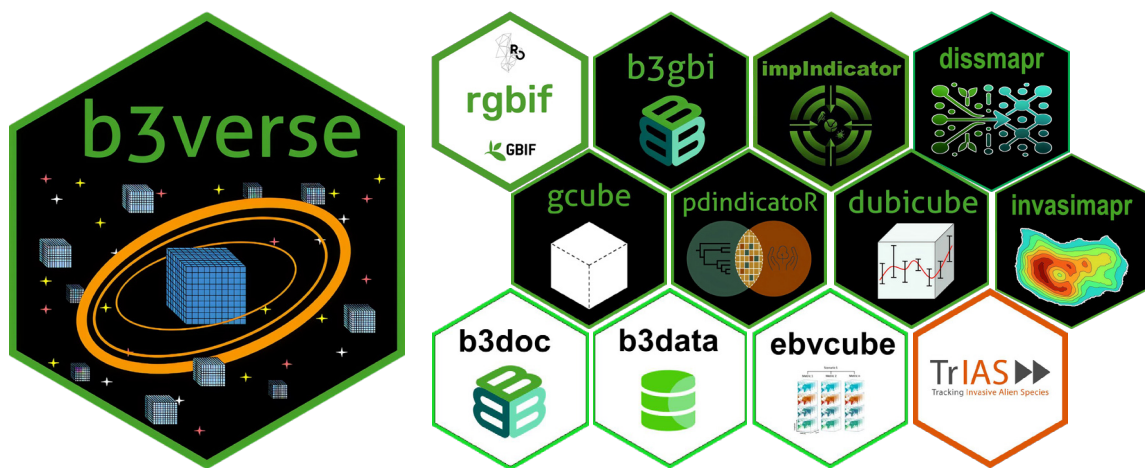
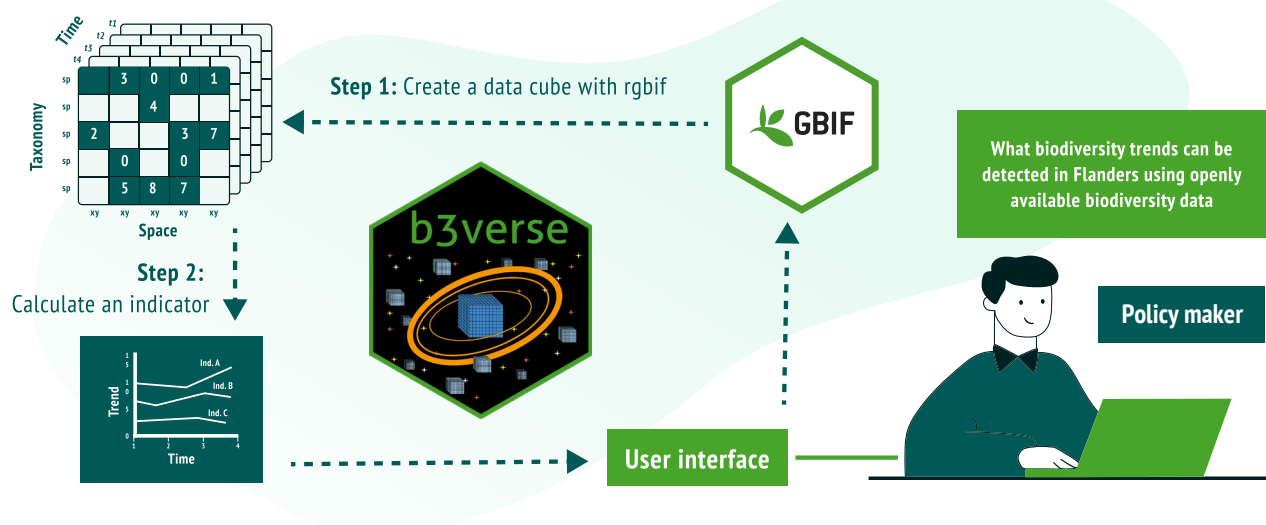


Figure 2: This figure shows the annual average recording year for all available records of native flowering plants in Flanders since 1975. GBIF Occurrence Download <https://doi.org/10.15468/dLknsn44> Accessed from R via rgbif (<https://github.com/ropensci/rgbif>) on 2026-03-16.

The B-Cubed workflow supports the creation and analysis of a data cube based on GBIF data. Further documentation is available at <https://docs.b-cubed.eu/>. Overview of all available packages at <https://b-cubed-eu.r-universe.dev/builds>.





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b-cubed.eu

B-Cubed aimed to standardise access to biodiversity data, helping transform fragmented biodiversity records into timely, policy-relevant indicators. This was achieved by developing a service to create “species occurrence cubes”, which then served as the basis for models and indicator of past, current and future biodiversity. To ensure its results can be reused, the project created exemplary workflows for modelling and indicator calculation, as well as a suite of guides, tutorials and hands-on training sessions. The application and usefulness of B-Cubed’s algorithms and software are demonstrated through the project’s four case studies.

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