



CESAB

A leading research organization
in Europe with international influence

CESAB – Centre for the Synthesis and Analysis of Biodiversity – is a key program of the FRB (Foundation for Research on Biodiversity) and aims to implement innovative work to synthesize and analyze already existing data in the field of biodiversity research.

Researchers can find at CESAB the necessary means and infrastructure to share and enhance existing information, and to conduct analyses that address major scientific challenges in biodiversity research.



Advancing knowledge, developing synthesis research and collaboration, facilitating the links between all scientific disciplines: these are the main assets of CESAB which host a large number of researchers every year from all the continents, during several working sessions.

DEVELOP SYNTHESIS RESEARCH

For many years, teams of researchers have been collecting, producing and analyzing increasingly important data on biodiversity. The information acquired today provides undeniable and essential knowledge, and allow us to better understand the contributions that biodiversity can provide for humanity. It is possible to go even further: assembled and combined, existing data, ideas and concepts can generate new advances in both pure and applied research.

Together, these existing data can supply new issues and significantly advance our biodiversity knowledge.

Encouraging this type of research activity - which does not produce new primary data but

makes better use of existing data often dispersed - is a strong challenge for biodiversity. Allowing recognized French scientists to lead high-level international working groups to carry out this type of activity is a way of reinforcing the visibility of the French community in the field. 24 research projects were funded in the past 10 years.



MEANS AND INFRASTRUCTURE

Each working group, selected after a strict procedure, is funded for two to three years, depending on the call. Groups also benefits from the support of a dedicated postdoctoral fellow and of the CESAB team: technical, administrative, logistical and communication support.

• Participants

CESAB groups are international and led by a researcher from a French research organization. As a result, CESAB groups have a rich diversity of perspectives and understanding which is enriching for both participants and project results. Since it was developed, more than 400 researchers have come to work at CESAB.

• Criteria for project selection

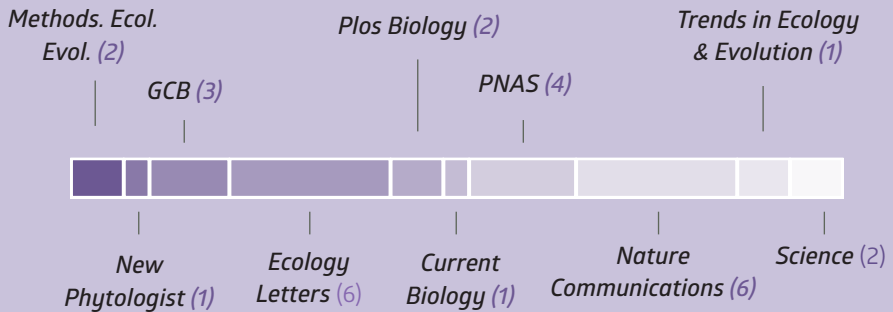
Cesab's scientific committee brings together researchers from all disciplinary fields associated with biodiversity research. It evaluates and selects projects according to the:

- 1 scientific excellence of the working group and innovative nature of the project,
- 2 relevance to CESAB objectives,
- 3 dissemination of knowledge and data from the project,
- 4 links with national and international initiatives.



High impact publications produced at a sustained paced

177 publications between 2010 et 2019, including:



Major publications such as:

PELAGIC: Letessier TB, Mouillot D, Bouchet PJ, *et al.* (2019) Remote reefs and sea-mounts are the last refuges for marine predators across the Indo-Pacific. *PLoS Biology*, 17, e3000366.

RAINBIO: Stévant T, Dauby G, Lowry PP, *et al.* (2019) A third of the tropical African flora is potentially threatened with extinction. *Science Advances*, 5, eaax9444.

DIVGRASS: Catarino R, Gaba S & Bretagnolle V (2019) Experimental and empirical evidence shows that reducing weed control in winter cereal fields is a viable strategy for farmers. *Scientific Reports*, 9, 9004.

FREE: Violle C, Thuiller W, Mouquet N, *et al.* (2017) Functional rarity: The ecology of outliers. *Trends in Ecology & Evolution*, 32, 356–367.

CESAB IS ALSO ABOUT...

- scientific conferences organized with and by the groups,
- courses and workshops on data management in ecology,
- the promotion of scientific results,
- hosting researchers at CESAB for short stays "Cesabbatic",
- additional meetings called "After" for groups wanting to extend work or open up new perspectives.





An example of a CESAB project: RAINBIO

Climate change and anthropogenic pressures are profoundly affecting Africa's tropical rainforests, which are home to a high diversity of species. In order to best protect these fragile environments, it is essential to assess their current state and estimate their evolution.



RAINBIO, led by Thomas Couvreur (IRD) has made it possible to:

- create an open-access database for researchers, containing all current knowledge available on the flora of tropical rainforests,
- draw up an inventory of biodiversity in these areas,
- identify sensitive areas, characterized by a high proportion of threatened species, and those where major changes are to be expected in the coming years, such as species loss, migration or substitution,
- establish exploratory scenarios of the evolution of biodiversity in these regions in order to be able to make informed and adapted decisions.

Three studies published in 2019, based on the results of RAINBIO, provided an unprecedented inventory of the world's rare flora and a better understanding and the future of tropical African flora and the conservation measures to be implemented. They filled a fundamental knowledge gap and confirmed the importance of rapidly implemented sustainable management solutions that can make possible the conservation of African tropical forests.

→ More information: <https://www.fondationbiodiversite.fr/en/the-frb-in-action/programs-and-projects/le-cesab/rainbio/>

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The founding members:

