



CESAB

Newsletter n°3 - July 2020

Centre for the Synthesis and Analysis of Biodiversity - [CESAB](#)

[@FRBiodiv](#) #CESAB

La newsletter est aussi [disponible en français](#).

## A word from the scientific director

Dear all,

We have all been affected by the Covid-19 pandemic. Even if it is too early to decipher the conditions that triggered the emergence of the coronavirus, it is, as other major epidemics, related to the environmental and biodiversity crisis we are experiencing.



Prevention could have been possible but they waited for the crisis to appear before acting. Prevention should be at the basis of our collective behavior, prevention and not fear! Prevention requires that we take the time to understand the world and synthesize complex information into meaningful and useful collective knowledge. What is true for the pandemics is true for the ongoing biodiversity crisis. **The need for synthesis has never been so strong, synthesis is the only way of fueling appropriate actions.** Furthermore, the timescale needed to achieve adequate and reliable synthesis is far longer than the rapid appearance of human-caused crisis. Synthesis must happen before !

Edward O. Wilson once said that the world would be run by "synthesizers, people able to put together the right information at the right time, think critically about it, and make important choices wisely". For once, he was wrong, the world is not run by synthesizers, it is run by people that base their actions on incomplete information, are behind the times, do not think critically and do not make wise choices ! This is why, today, we need synthesizers more than ever, and yet I do not see very much of collective effort to support synthesis in the agenda of research funding agencies. At our very small scale, synthesis centres, such as CESAB, are trying to promote the art of synthesis in biodiversity science but the level of funding we are receiving is inversely proportional to the importance of our mission.

After every crisis, we hear voices saying that the "world will never be the same again". This is not true, a simple synthesis of crises during the 20th century show the exact opposite pattern. **However, this does not mean that we have to give up, but rather that we need to understand and remember: we must synthesize !**

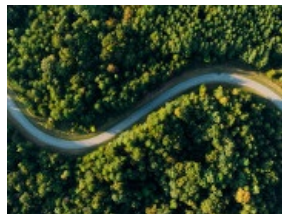
Nicolas Mouquet

P.S.: don't hesitate invite your colleagues [to sign up](#) to our newsletter and to share it!

## NEWS

• [CALL FOR PROPOSALS](#)

## Territorial approach to biodiversity: transport infrastructures, natural and agricultural environments



The FRB, with the support of **ITTECOP** programme, is calling on the scientific community to submit projects to its **CESAB**, based on the analysis and synthesis of existing data on the theme “**Territorial approach to biodiversity: transport infrastructures, natural and agricultural environments**” at a European geographic level.

The projects will call for the analysis of large sets of data for, among others, the following purposes:

- Evaluate the impacts of these infrastructures on biodiversity (genetic, specific, functional and ecosystemic), with all taxonomic groups potentially concerned;
- Determine how the design of the infrastructure can impact on different facets of biodiversity;
- Evaluate how the management of the infrastructure and its “naturalized” part can influence these impacts;
- Identify and analyse the economic, socio-technical and political factors that contribute to the deployment of these infrastructures and the extent to which they take biodiversity into account.

Pre-proposal deadline: **16th of July 2020, 13:00 CEST**

[More information](#)

## Systematic reviews: marine biodiversity and agricultural transition



The FRB, through the **CESAB**, is funding 2 projects, including postdoctoral researchers for up to 18 months, to carry out systematic reviews, using systematic mapping, critical assessment and narrative synthesis of the corpus of selected texts. Expected outcomes are publications of review articles in international scientific journals.

You can apply to two themes:

- 1/ **State and future of marine biodiversity in a time of global change.**
- 2/ **Solutions for agro-ecological transition that conserve biodiversity**, in partnership with [Agropolis Fondation](#).

Proposal deadline: **1st of September 2020, 16:00 CEST**

[More information](#)

### • COURSE



#### **CESAB Course: Data Toolbox for Reproducible Research in Computational Ecology – 2020**

2-6 November 2020, Montpellier

The **CESAB** and the **GDR EcoStat** organize the second edition of this training course. The objective of this five-day training is to train young researchers in reproducibility, software development and version management tools (e.g. R, git, markdown, tidyverse, docker), applied to biodiversity research. The course will be in French.

Registration deadline: **17th of July 2020, midnight CEST**

[More information and registration](#)

## • CESAB NEWS



The FRB, through the **CESAB** and with the support of **France Filière Pêche**, made a call for proposals, **closed in June**, based on the analysis and synthesis of existing data, as well as the modelling of the **effects of climate change on the biodiversity of European fish stocks and associated fisheries (North-East Atlantic and Mediterranean)**.

Pre-proposals are being evaluated and the selected project will contribute to a better understanding of the effect of climate change on fish resources and fisheries, to help develop adaptive fisheries management measures.

[More information](#)



**Jean-François Guégan** is leaving the **CESAB scientific committee**. He has been part of our scientific committee for more than 5 years and we want to collectively thank him for his incredible work, fueling the CESAB with his energy without counting hours! His contribution goes far beyond what is usually expected from a member of any scientific committees and even now, he is still helping us to promote the CESAB. Thank you Jean-François!

## CESAB WORKING GROUPS

### • NEW PUBLICATIONS

#### DISCO-WEED

Bourgeois B, Gaba S, Plumejeaud C & Bretagnolle V (2020) Weed diversity is driven by complex interplay between multi-scale dispersal and local filtering. *Proceedings of the Royal Society B: Biological Sciences*, accepted.

Gaba S, Cheviron N, Perrot T, Piutti S, Gautier J-L & Bretagnolle V (2020) Weeds enhance multifunctionality in arable lands in South-West of France. *Frontiers in Sustainable Food Systems*, **4**, 71. doi: [10.3389/fsufs.2020.00071](https://doi.org/10.3389/fsufs.2020.00071).

Mahaut L, Cheptou P-O, Fried G, Munoz F, Storkey J, Vasseur F, Violle C & Bretagnolle V (2020) Weeds: against the rules? *Trends in Plant Science*, accepted.

Munoz F, Fried G, Armengot L, Bourgeois B, Bretagnolle V, Chadoeuf J, Mahaut L, Plumejeaud C, Storkey J, Violle C & Gaba S (2020) Ecological specialization and rarity of arable weeds: insights from a comprehensible survey in France. *Plants*, accepted.

#### FREE

Thuiller W, Gravel D, Ficetola GF, Lavergne S, Münkemüller T, Pollock LJ, Zimmermann NE & Mazel F (2020) Productivity begets less phylogenetic diversity but higher uniqueness than expected. *Journal of Biogeography*, **47**, 44–58. doi: [10.1111/jbi.13630](https://doi.org/10.1111/jbi.13630).

#### FunctionalWebs

Marino NAC, Céréghino R, Gilbert B, Petermann J, Srivastava DS, de Omena PM, Ospina Bautista F, Farjalla VF, Guzman LM, Romero GQ, Trzcinski MK, Barberis IM, Corbara B, Debastiani VJ, Dézerald O, Kratina K, Leroy C, MacDonald AAM, Montero G, Pillar VD, Richardson BA, Richardson MJ, Talaga S, Gonçalves AZ, Piccoli GCO & Jocqué M (2020) Species niches, not traits, determine abundance and occupancy patterns: A multi-site synthesis. *Global Ecology and Biogeography*, **29**, 295–308. doi: [10.1111/geb.13029](https://doi.org/10.1111/geb.13029).

#### GASPAR

Yancovitch H, Blowes S, Friedlander AM, Mellin C, Leite Ferreira C, Arias-Gonzalez J,

Kulbicki M, Floeter SR, Chabanet P, Parravicini V & Belmaker J (2020) A closer examination of the 'abundant center' hypothesis for reef fishes. *Journal of Biogeography*, accepted.

### GEISHA

Stockwell JD, Doubek JP, Adrian R, Anneville O, Carey CC, Carvalho L, De Senerpont Domis LN, Dur G, Frassl MA, Grossart H, Ibelings BW, Lajeunesse MJ, Lewandowska AM, Llamas ME, Matsuzaki SS, Nodine ER, Noges P, Patil VP, Pomati F, Rinke K, Rudstam LG, Rusak JA, Salmaso N, Seltmann CT, Straile D, Thackeray SJ, Thiery W, Urrutia-Cordero P, Venail P, Verburg P, Woolway RI, Zohary T, Andersen MR, Bhattacharya R, Hejzlar J, Janatian N, Kpodonu ATNK, Williamson TJ & Wilson HL (2020) Storm impacts on phytoplankton community dynamics in lakes. *Global Change Biology*, **26**, 2756–2784. doi: [10.1111/gcb.15033](https://doi.org/10.1111/gcb.15033).

- **Press release:** [Ce que nous ne savons pas \(sur les lacs\) pourrait nous nuire](#) (in French)

### JustConservation

Coolsaet B, Dawson N, Rabitz F & Lovera S (2020) Access and allocation in global biodiversity governance: a review. *International Environmental Agreements: Politics, Law and Economics*, accepted. doi: [10.1007/s10784-020-09476-6](https://doi.org/10.1007/s10784-020-09476-6).

### LOLA-BMS

- **Press release:** [Les sites Natura 2000 ont-ils aussi un impact sur les espèces d'oiseaux et de papillons non ciblées ?](#) (in French)

### RAATD

Hindell MA, Reisinger RR, Ropert-Coudert Y, Hückstädt LA, Trathan PN, Bornemann H, Charrassin J-B, Chown SL, Costa DP, Danis B, Lea M-A, Thompson D, Torres LG, Van de Putte AP, Alderman R, Andrews-Goff V, Arthur B, Ballard G, Bengtson J, Bester MN, Blix AS, Boehme L, Bost C-A, Boveng P, Cleeland J, Constantine R, Corney S, Crawford RJM, Dalla Rosa L, de Bruyn PJN, Delord K, Descamps S, Double M, Emmerson L, Fedak M, Friedlaender A, Gales N, Goebel ME, Goetz KT, Guinet C, Goldsworthy SD, Harcourt R, Hinke JT, Jerosch K, Kato A, Kerry KR, Kirkwood R, Kooyman GL, Kovacs KM, Lawton K, Lowther AD, Lydersen C, Lyver PO, Makhado AB, Márquez MEI, McDonald BI, McMahon CR, Muelbert M, Nachtsheim D, Nicholls KW, Nordoy ES, Olmastroni S, Phillips RA, Pistorius PA, Plötz J, Pütz K, Ratcliffe N, Ryan PG, Santos M, Southwell C, Staniland IJ, Takahashi A, Tarroux A, Trivelpiece W, Wakefield E, Weimerskirch H, Wienecke B, Xavier JC, Wotherspoon S, Jonsen ID & Raymond B (2020) Tracking of marine predators to protect Southern Ocean ecosystems. *Nature*, **580**, 87–92. doi: [10.1038/s41586-020-2126-y](https://doi.org/10.1038/s41586-020-2126-y).

Ropert-Coudert Y, Van de Putte AP, Reisinger RR, Bornemann H, Charrassin J-B, Costa DP, Danis B, Hückstädt LA, Jonsen ID, Lea M-A, Thompson D, Torres LG, Trathan PN, Wotherspoon S, Ainley DG, Alderman R, Andrews-Goff V, Arthur B, Ballard G, Bengtson J, Bester MN, Blix AS, Boehme L, Bost C-A, Boveng P, Cleeland J, Constantine R, Crawford RJM, Dalla Rosa L, de Bruyn PJN, Delord K, Descamps S, Double M, Emmerson L, Fedak M, Friedlaender A, Gales N, Goebel ME, Goetz KT, Guinet C, Goldsworthy SD, Harcourt R, Hinke JT, Jerosch K, Kato A, Kerry KR, Kirkwood R, Kooyman GL, Kovacs KM, Lawton K, Lowther AD, Lydersen C, Lyver PO, Makhado AB, Márquez MEI, McDonald BI, McMahon CR, Muelbert M, Nachtsheim D, Nicholls KW, Nordoy ES, Olmastroni S, Phillips RA, Pistorius PA, Plötz J, Pütz K, Ratcliffe N, Ryan PG, Santos M, Southwell C, Staniland IJ, Takahashi A, Tarroux A, Trivelpiece W, Wakefield E, Weimerskirch H, Wienecke B, Xavier JC, Raymond B & Hindell MA (2020) The retrospective analysis of Antarctic tracking data project. *Nature Scientific Data*, **7**, 94. doi: [10.1038/s41597-020-0406-x](https://doi.org/10.1038/s41597-020-0406-x).

- **Press release:** [Localiser les prédateurs pour protéger les écosystèmes de l'océan Austral](#) (in French)

### RAINBIO

Dagallier LM, Janssens SB, Dauby G, Blach-Overgaard A, MacKinder BA, Droissart V, Svenning J-C, Sosef MSM, Stévant T, Harris DJ, Sonké B, Wieringa JJ, Hardy OJ & Couvreur TLP (2020) Cradles and museums of generic plant diversity across tropical Africa. *New Phytologist*, **225**, 2196–2213. doi: [10.1111/nph.16293](https://doi.org/10.1111/nph.16293).

### WOODIV

Albassatneh MC, Escudero M, Ponger L, Monnet A-C, Arroyo J, Nikolic T, Bacchetta G,

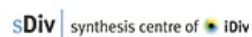
Bagnoli F, Dimopoulos P, Leriche A, Médail F, Roig A, Spanu I, Vendramin GG, Hampe A & Fady B (2020) A comprehensive, genus-level time-calibrated phylogeny of the tree flora of Mediterranean Europe and an assessment of its vulnerability. *Botany Letters*, **167**, 276–289. doi: [10.1080/23818107.2019.1684360](https://doi.org/10.1080/23818107.2019.1684360).

All CESAB's scientific publications

## • ONGOING PROJECTS NEWS

Following the Government's request regarding the coronavirus situation, all CESAB's meeting planned this spring were cancelled and postponed. Groups were able to continue working on their projects remotely.

Six new projects were selected early 2020 from three different joint calls:



### Joint Call Synergy FRB-CESAB / sDiv - Coexistence and stability in high-diversity communities

**INTRACO:** Unravelling the role of intraspecific variability in tree species coexistence in tropical forest

Ghislain VIELLEDENT – CIRAD AMAP Montpellier (France), Isabelle MARECHAUX – INRAE AMAP Montpellier (France)

**UNICOP:** Unification of modern Coexistence theory and Price equation

Bradley A. DUTHIE – University of Stirling (United Kingdom), Sébastien LION – CEFE CNRS Montpellier (France)



### Joint call Synergy FRB-CESAB / CIEE - Biodiversity in a time of global change

**RED-BIO:** Dynamic resource landscapes, eco-evolutionary feedbacks and the emergence of meta-food webs

Eric HARVEY – Université de Montréal (Canada), Isabelle GOUNAND – Institut d'écologie et des sciences de l'environnement de Paris (France)

**FISHGLOB:** Fish biodiversity under global change – a worldwide assessment from scientific trawl surveys

Maria Lourdes D PALOMARES – University of British Columbia (Canada), Bastien MERIGOT – Université de Montpellier (France)



### Joint call CESABATIC FRB-CESAB / CeMEB - Short term stays for foreign researchers

**FEMPA:** Function Ecology underpins pelagic Marine Protected Area implementation and assessment - stay at CESAB February/March 2021

Jessica MEEUWIG – University of Western Australia (Australia). CeMEB co-PI: David MOUILLOT – Université de Montpellier (France)

**ISLETS:** Island Leaf Economics Trait Synthesis - stay at CESAB in May/June 2021

Kasey BARTON – University of Hawaii (USA). CeMEB co-PI: Claire FORTUNEL – UMR AMAP, CIRAD Montpellier (France)

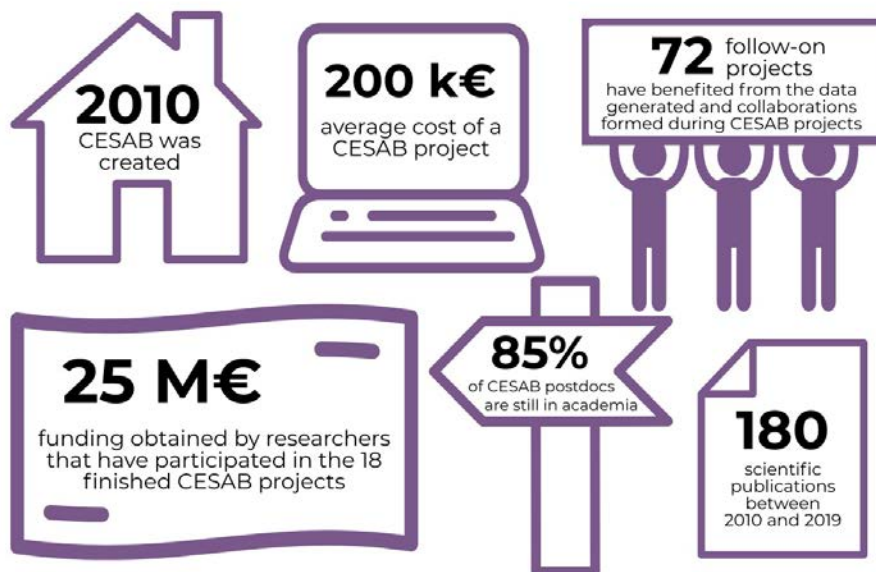
All CESAB's projects

## • 2020 PREVISIONAL CALENDAR - SECOND SEMESTER

	July	August	September	October	November	December
Week 1					<b>Course</b> Data Toolbox	
Week 2		<b>INTRACO-UNICOP</b> Meeting 1	<b>SCORE-REEF</b> Meeting 2			<b>DIVERS</b> Meeting 3
Week 3					<b>FREE</b> Meeting 4	
Week 4					<b>FORCIS</b> Meeting 3	
Week 5			<b>JustConservation</b> Meeting 2			

## CESAB LEVERAGE EFFECT

We conducted a survey among CESAB project leaders, to measure the positive impact of being part of a CESAB project, on obtaining new funding and on the professional prospects.



All these elements, whether they concern new sources of funding, the impact of the results, the continuity of the project over time, or changes and career opportunities for researchers, are a guarantee of the quality of the databases built and analysed at CESAB.

**There is a real "leverage effect" of Cesab, both for its scientific actors (members of all the funded groups), and for its financial actors who are guaranteed both long-term visibility and participation in a large and high-quality scientific production.**

## RESEARCHER PORTRAIT

**Valeriano Parravicini, post-doc for GASPAP (2011-2014) and currently PI of SCORE-REEF (started in 2019)**



"I have been a post-doc to work on the GASPAP project supported by the FRB-CESAB., with Michel Kulbicki (IRD, ENTROPIE), PI of the project. It was the first time I was part of such a large group of excellent scientists. I found extraordinary support and sympathy in the GASPAP group. Thanks to the PI, the excellent and supportive team members from different scientific fields, I could substantially improve my CV.

During GASPAP we built two major databases: the first about the global distribution of more than 6000 reef fish species and the second reporting the major ecological characteristics (e.g. body size, diet) for the same fish species. This kind of information was still not available in 2011, when we started the project. Synthesis centres such as CESAB are crucial for ecological research because they allow researchers to take the time

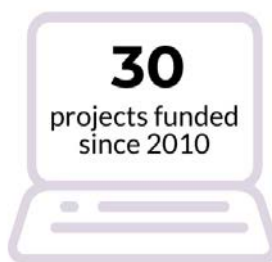
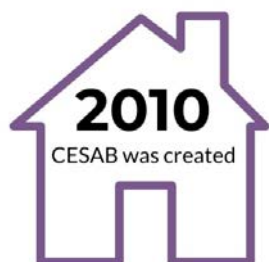
to share their data with colleagues and support them in the analyses of such data. This is the only way we can do something more relevant than what we will do with smaller proprietary datasets.

Working with the GASPARGROUP is one of the most exciting experience in my professional life. During that period, we conducted novel and exciting research that was published in several major scientific journals including Science, PNAS, Ecology Letters and others. We significantly contributing to the understanding of the functional ecology and biogeography of coral reefs.

Soon after the completion of the GASPARGROUP project I obtained a permanent position at the EPHE, based at the CRIOBE (Perpignan). I am now the PI of another CESAB project (SCORE-REEF) and I hope that this project will be a success as it was the case for GASPARGROUP."

- The GASPARGROUP project was interested in looking at Species-Abundance relationships in a context of global change, using reef fish species as a model. The group published **27 scientific publications** in total, including 14 after the end of CESAB funding.
- The SCORE-REEF project started in 2019 and is co-funded by the French Biodiversity Office (OFB). The project aims to study spatio-temporal variability of coral reefs at the global scale.

## CESAB IN A ZOOM



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