

# **VERON SIMON, former PhD STUDENT**

« *Consequences of species extinctions on the loss of evolutionary history* »

*Supervisors: Sandrine Pavoine, Philippe Clergeau. Funding: LaBex BCDiv*

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## **SUMMARY**

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During my PhD I specialized in the conservation of evolutionary history and studied the links with other components of biodiversity such as species richness and functional diversity. In particular, I investigated the expected loss of phylogenetic diversity and evolutionary distinctiveness due to species extinction risks. I was attributed a postdoctoral fellowship in January 2017 to understand the patterns of plant diversity in world oceanic islands.

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## **WORK EXPERIENCE**

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02/2017 – 02/2019 > **MNHN UMR 7205 (PARIS)** > *POST\_DOCTORAL FELLOWSHIP*

- > I am currently working in the Institute of Systematic Evolution and Biodiversity (UMR 7205 MNHN) as a post-doctoral fellow. I aim to use phylogenetic and functional approaches to understand diversity patterns in islands with applications in community ecology and conservation biology. I focus on monocot species which include all cereals, palms, orchids etc. and work at a world scale.

12/2013 – 11/2016 > **MNHN UMR 7204 (PARIS)** > *PhD STUDENT*

- > *Consequences of species extinctions on the loss of evolutionary history*  
During my PhD I have developed an interest in the consequences of species extinctions on biodiversity, especially on evolutionary history. My research has been dedicated to threatened diversity at global, regional and local scales, to the identification of conservation priority sites and species and to assess the efficiency of conservation measures. I have also proposed some methodological improvements to better integrate phylogenetic diversity and originality in conservation actions, to analyse the consequences of co-extinctions (mutualistic networks) and possible extinctions of poorly known species on evolutionary history (missing data handling)
- > Supervisors: Sandrine Pavoine and Philippe Clergeau

- > Fundings: LaBex BCDiv
- > Main skills acquired: Development and use of biodiversity indices for conservation, (phylogenetic diversity [*especially threatened and endemic*], evolutionary distinctiveness). Large database management. Extinction risks modelling. Spatial analysis of patterns of threatened diversity.

04/2013– 10/2013 > **IRSTEA (MONTPELLIER)** > *INTERNSHIP ON BIOLOGICAL CORRIDORS*

- > This internship was dedicated to the monitoring of the efficiency of biological corridors (Trame verte et bleue)
- > Supervisor: Jennifer Amsallem
- > Main skills acquired: Survey among conservation stakeholders. Literature review and synthesis.

03/2012– 06/2012 > **IUCN (MALAGA)** > *INTERNSHIP ON THE RESTORATION OF COASTAL DUNES*

- > This internship was dedicated to the coordination and monitoring of coastal dune restoration in the Maghreb: writing of a guidebook for the managers of restoration sites, implementation of a nursery of coastal plants, development of a methodology to assess the conservation status of coastal dunes.
- > Supervisor: Marcos Valderabanno
- > Main skills acquired: Writing of a guidebook for conservation. Knowledge about coastal ecosystems. Development of project proposal.

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## PUBLICATIONS

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- [1] Robert, A., Fontaine, C., Veron, S., Monnet, A-C., Legrand, M., Clavel, J., Chantepie, S., Couvet, D., Ducarme, F., Fontaine, B., Jiguet, F., Le Viol, I., Rolland, J., Sarrazin, F., Teplitsky, C. & Mouchet, M. (2016). Fixism and Conservation Science. *Conservation Biology*.
- [2] Veron, S., Saito, V., Padilla-Garcia, N., & Bertheau, Y. From Darwin's theory of evolution to modern biology: how phylogenetic information can support biodiversity conservation. *Biological Reviews*. In prep.
- [3] Veron, S., Fontaine, C., Clergeau, P. & Pavoine, S. Consequences of co-extinctions on the loss of evolutionary history in mutualistic networks. *Biological conservation*. In prep.
- [4] Veron, S., Davies, T. J., Cadotte, M. W., Clergeau, P., & Pavoine, S. (2016). Predicting loss of evolutionary history: Where are we? (2016). *Biological Reviews*.
- [5] Veron, S., Penone, C., Clergeau, P., Costa, G. C., Oliveira, B. F., São-Pedro, V. A., & Pavoine, S. (2016). Integrating data-deficient species in analyses of evolutionary history loss. *Ecology and Evolution*, 6(23), 8502-8514.
- [6] Veron, S., Clergeau, P., & Pavoine, S. (2016). Loss and conservation of evolutionary history in the Mediterranean Basin. *BMC ecology*, 16(1), 43.
- [7] Veron, S., Faith, D. P., Pellens, R. & Pavoine, S. Key Biodiversity Areas for phylogenetic diversity: maximizing expected gain in phylogenetic diversity in the Mediterranean basin. *Springer*. In prep.

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## COMMUNICATIONS

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- > ICCB-ECCB congress (Montpellier) – Oral communication – 2015
- > International congress on macroecology (Copenhagen) – Poster – 2015
- > Chair of Mathematic, Modelling and Biodiversity (Paris) – Oral communication – 2015
- > Young Natural History scientist's Meeting (Paris) – Oral communication – 2016
- > Young international congress in the Mediterranean region (Tour du Valat) – Oral communication (3<sup>rd</sup> prize) – 2016
- > International Conference on Missing Data (Rennes) – Poster – 2015
- > Yearly meeting of the LaBex BCDiv (Paris) – Oral communication – 2015
- > Research short film that was projected and discussed in high schools and in public events (Science festival, museum of science and industry in Paris, museum of science in Rennes, universities) – jury prize – 2015  
<http://leschercheursfontleurcinema.doc-up.info/edition-2015/courts-metrage/>

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## SKILLS

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### DATA MANAGMENT

- > Programing in the R computing environment
- > Development of biodiversity indices (especially indices based on phylogenies and extinction risks)
- > Analyse of patterns of threatened diversity
- > Modelling of extinction risks
- > Use of large databases (Pantheria, IUCN assessments, BioFlor)

### DISSEMINATION OF KNOWLEDGE

- > Writing of scientific papers
- > Communication of research (oral communications, posters)
- > Science popularization (short film, oral communications)

### LANGUAGES

- > English (fluent) (TOEIC : Grade 920 – 2013 ; First Certificate of English of Cambridge : Grade A – 2008)
- > Spanish (fluent) (one year spent in Spain)

### SOFTWARES

R, ArcGIS, Mapple, Matlab, Inkscape

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## EDUCATION

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09/2011 – 10/2013 > **MASTER IN ECOLOGICAL ENGINEERING AND BIOLOGY  
CONSERVATION** > *UNIVERSITY OF MONTPELLIER 2*

09/2008 – 08/2011 > **ENGINEER SCHOOL IN PHYSICS** > *NATIONAL INSTITUTE OF APPLIED  
SCIENCE (RENNES)*

- > Specialization in nanotechnologies

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## **CENTRES OF INTEREST**

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- > Participation, then organisation, of a short film festival for scientific popularization
- > Improvisation theatre : Student league of improvisation
- > Sports : swimming, table tennis, Capoeira, hiking, mountain bike and naturalist activities