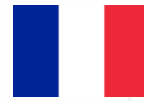




Florent Martos



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Ecology & Evolutionary Biology

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How do plants interact with each other and with other organisms in the natural environment? How do they attract insects or birds to achieve pollination? How do they select symbiotic partners among the multitude of micro-organisms in the soil to ensure germination of the seeds and nutrition through the roots? I address these issues at different scales, from the study of some key species to the study of the more complex interaction networks within communities. I focus primarily on orchids, especially those native to Africa and Madagascar, which are remarkable for the diversity of reproductive strategies and carbon uses. Many are currently threatened with extinction. My research that leads to a better understanding of their natural needs is relevant in the context of a global strategy for biodiversity conservation.

## CURRENT RESEARCH

### Topic

Evolutionary ecology and conservation of African orchids.

### Methodology

- Field observations & experiments
- DNA sequencing
- Bioinformatics e.g. phylogenetic methods
- Ancestral states reconstruction
- Gas Chromatography-Mass Spectrometry
- Stable isotopes
- Interaction networks theory and statistics

### Applications

- Plant classification
- Floras and field guides
- Biodiversity conservation
- Floral fragrances (Perfumery & cosmetics)

## UKZN main Publications

1. Martos F, Johnson SD, Peter CI & Bytebier B. A molecular phylogeny reveals paraphyly of the large genus *Eulophia* (Orchidaceae): a case for the reinstatement of *Orthochilus*. *Taxon*.
2. Martos F, Cariou M-L, Fournel J, Bytebier B & Johnson SD. The chemical basis of hyper-specialization in an orchid mimicry system. *Proceedings of the Royal Society London B*.
3. Mallet B, Martos F, Blambert L, Pailler T & Humeau L. Evidence for isolation-by-ecology among populations of an epiphytic orchid species on a small oceanic island. *PLOS ONE*.

## Past Researches

1. Martos F, Munoz F, Pailler T, Kottke I, Gonneau C & Selosse M-A. 2012. The role of epiphytism in architecture and evolutionary constraint within mycorrhizal networks of tropical orchids. *Molecular Ecology* 21: 5098-5109.
2. Martos F, Dulormne M, Pailler T, Bonfante P, Faccio A, Fournel J, Dubois M-P & Selosse M-A. 2009. Independent recruitment of saprophytic fungi as mycorrhizal partners by tropical achlorophyllous orchids. *New Phytologist* 184: 668-681.

## Future Interests

1. Above- and below- ground interaction networks within plant communities
2. Plant diversification rates in oceanic islands
3. Models for olfactory mimicry targeting fly pollinators

## Extra Interests

Photography; sports activities (hiking, mountain biking, surf, football); guitar