The department of Evolutionary Ecology gathers complementary skills in behavioural ecology, population dynamics, population biology, community ecology, and methodology (statistics and modelling). The research done in the department aims at studying how animal species evolve in a changing world by understanding the causes of the evolution of traits, adaptations and interactions. For that, we consider different levels of organization from individuals to populations and communities. Because organisms cannot be considered isolated from other biotic factors, we consider pathogens but also competing species within communities.

We study how individuals adapt to their environments that are largely impacted by anthropic pressures, and how life history traits and behaviour evolve in response to these pressures. Although we mainly focus on phenotype, we more and more consider the mechanistic link between the genotype and the phenotype. We develop the theoretical framework of our discipline through a conceptual and modeling approach. In parallel, we test hypotheses that arise from theoretical predictions through experimental, comparative and observational approaches on different biological models (insects, birds, mammals). Experimental approaches are developed in the laboratory (insect model) and in natura (bird, insect and mammal models). Observational and comparative research is mainly concerned with vertebrates. Our approaches are also, and increasingly, interested in the mechanisms of adaptive responses. In addition to the classical approaches of demographic analysis and trait change, methods of ecophysiology, chemical ecology and molecular biology are used.

Our department hosts several long-term studies of wild populations of different species. These long-term studies offer a valuable way to understand how biotic and abiotic factors affect individuals' life history traits, and the functioning of populations in natura. Five populations of mammalian species are thus monitored for several years (more than 40 years on roe deer, 30 on Alpine marmots, 25 years on cats, 16 years on zebras, and 20 years on impala). Two of our study sites (La Sassière in Vanoise National Park (Alpine marmots) and Hwange National Park) have been certified as "Site d'Etude en Ecologie Globale" (SEEG), and two (ZA "Hwange" and ZA "Antarctic and sub-Antarctic") were certified as "Zone Atelier" by the CNRS.

The department of Evolutionary ecology is also largely involved in training activities. Lastly, we also have strong socio-economic relationships. Indeed, because we address questions of major societal interest (global warming, public health) we tightly collaborate with socio-economic partners (Office Français de la Biodiversité, Vanoise National Park, Hwange National Park in Zimbabwe, Office National des Forêts, etc.) and participate to general public and media events.

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