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## Climatic fluctuations in a long-lived migrant species

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Pictures: Guy Bourderionnet, Sonia Dourlot, Damien Caillaud, Delphine Bourdais, Daniel Pavon.



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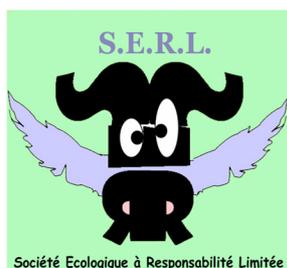
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## Demographic response of a migrant species to environmental fluctuations

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In the actual context of global climate change, it has been widely demonstrated that environmental fluctuations influence populations, though a large variety of mechanisms. In migrant populations, individuals have to face highly distinct environments that are disconnected from each other's to complete their annual life cycle. Such a situation may greatly increase the complexity of the ecological processes driving population dynamics, which should be affected by different environmental systems. The goal of this study was to describe the demographic response of a migrant population to environmental variability. We considered the example of the white stork, a long-lived migrant species breeding in western France and wintering in Sahel, Africa. Using a long-term capture-recapture dataset, we tested for correlations between climatic indices characteristic of both breeding and wintering periods and main demographic traits (juvenile survival, recruitment, adult survival and breeding success). We highlighted that conditions over the wintering grounds in Africa as well as conditions over the breeding sector in France seemed to affect the population dynamics of this migrant species. However, the intensity of the response to a given environment depends of the demographic trait considered. This study also permitted to actualise the well-documented relationship between survival and Sahel rainfall index. Indeed, this link seemed to have disappeared during the last decade, thanks to recent changes in Sahel climate and in the migratory behaviour of storks.