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Orthoptera prove good indicators of grassland rehabilitation success in the first French Natural Asset Reserve

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Abstract

In the last few years, legislation in more and more countries has stipulated compensation for impacts on biodiversity. France was one of the first countries to include compensation in its national law on nature preservation (1976), but habitat banking was only recently introduced into the mitigation regulatory framework. It was applied for the first time in 2008, when the first French Natural Asset Reserve was created in the plain of La Crau (Southeastern France), the last semi-arid steppe in Western Europe. This project was realized through mitigation banking and involved the ecological rehabilitation of an abandoned conventional orchard to a dry Mediterranean grassland habitat for the rare and protected steppe birds typical of this area. Here, to measure habitat rehabilitation success and validate the mitigation banking principle, we use Orthoptera as rapid and integrative indicators. Performing a six-year study (2008-2013), we assessed Orthoptera assemblages before rehabilitation (2008), when the conventional orchard was abandoned; during rehabilitation (2009); and for four years after

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