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Report from a BOU-funded project

Assessing the impacts of the non-native Black-headed Weaver on native *Acrocephalus* warblers

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BACKGROUND AND IMPLEMENTATION

Non-native species can have severe negative impacts on native biodiversity (Blackburn *et al.* 2004, Clavero *et al.* 2009), but not all do. It is desirable to evaluate the risks posed by non-native species during the early stages of an invasion, when control measures are easiest (Manchester & Bullock 2000, Lodge *et al.* 2006). However, it is easier to evaluate impacts when an invasion is advanced, as more data are available, allowing competition to be identified with more confidence (Wiens 1989), so most studies investigating the impacts of non-native species (e.g. Newson *et al.* 2011) are performed once the species is long established.

We investigated the impacts of the introduced Black-headed Weaver *Ploceus melanocephalus* in the Iberian Peninsula during the early stages of its invasion. Black-headed Weavers have been suspected of competing with two ecologically similar native species, the Great Reed Warbler *Acrocephalus arundinaceus* and the Eurasian Reed Warbler *A. scirpaceous* (Matias 2002). This could occur due to competition for nestling food or for nest-sites. Black-headed Weavers may exclude native Reed Warblers from reedbed through interspecific territoriality. If this was happening, we would expect to observe aggression between Black-headed Weavers and native species, possibly a response of Black-headed Weavers to playback of the songs of native species, low overlap between territories of Black-headed Weavers and native species, and a shift in the habitat characteristics of native species' territories to be less similar to Black-headed Weavers. Alternatively, they may reduce the quality of reedbed by depleting resources. If this were happening, we would expect to observe an increase in the size of territories of native species when Black-headed Weavers were present and native species to show a preference for areas further away from Black-headed Weaver territories. We conducted fieldwork at four sites in Portugal from April to June 2012 to collect data to test these hypotheses.

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Table 1. Number of territories of target species at our study sites.

Species	Lagoa de Óbidos	Paul de Tornada	Barroca d'Alva	Lezíria Grande
Reed Warbler	27	22	26	29
Great Reed Warbler	8	7	7	7
Black-headed Weaver	0	10	16	0

KEY FINDINGS AND MANAGEMENT IMPLICATIONS

The number of territories of each species at our study sites is shown in Table 1. Despite overlapping resource requirements, we did not find evidence for any of the possible signatures of competition. Therefore, our work does not support previous anecdotal suggestions of competition. Despite this, we recommend continued monitoring of the impacts of Black-headed Weavers, as negative impacts may occur once the species reaches higher population densities.

We are currently preparing a manuscript for submission to *Ibis*, which will give full details of the results from this project. We will also submit a report on the project to the Câmara Municipal das Caldas da Rainha, allowing the key findings of the project to be disseminated locally.

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