

Musseau R^(*), Crépin M., Chloé B., Hedde, M. & Kerbiriou C. (in prep.) - Conservation of coastal marshes used by marshland passerines in the context of climate change: how to accommodate agricultural and ecological issues?

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Abstract:

In the context of coastal marshland reduction due to climate change, we evaluated the interest of reedbed mosaics growing within inland mowed and grazed agricultural grassland plots (RM) for the conservation of habitats exploited by marshland passerines. On the north bank of the Gironde estuary (France) particularly impacted by sea level rise, we compared the use of these habitats by four marshland passerine species characterised by different ecological requirements with their use of large intertidal reedbeds (IR). The study, dedicated to the Reed Warbler during its breeding period, reveals that the densities of singing males per hectare of reeds are almost twice as high in RM than in IR. During the post-breeding season, the residence time of birds, calculated from the average survival probabilities of individuals, varies more or less between the two habitats, depending on the species: 20.52 ± 0.31 vs 22.10 ± 0.31 days for the Reed Warbler, 13.52 ± 0.30 vs 8.24 ± 0.33 days for the Bluethroat, 2.87 ± 0.48 vs 5.76 ± 0.36 days for the Sedge Warbler and zero vs 1.98 ± 0.60 days for the Aquatic Warbler. For the latter species, results from a radio-tracking survey highlight a dispersal of birds from the first day of capture in the first habitat (RM), whereas they can be monitored for more than four days in the second habitat (IR). These results allow us to conclude that in geographical contexts with significant degradation of coastal marshes, the conservation of inland meadows in relation to other agricultural practices and the encouragement of hydraulic management of plots for the growth and the conservation of reedbeds: 1) presents an obvious ecological interest for species with a large ecological plasticity, such as the Reed Warbler or the Bluethroat, that could benefit from edge effects of habitat fragmentation; 2) can effectively support measures such as depolderisation for the conservation of large and regularly flooded reedbeds exploited by relatively specialised species such as the Sedge Warbler or the Aquatic Warbler, whose apparently do not tolerate the fragmentation effects of wetlands; 3) allows an interesting trade-off to accommodate the conservation of coastal reedbeds and the conservation of agricultural activities in coastal areas subjected to a high land pressure due to global change.

Key words: agri-environmental measures, Aquatic Warbler, Bluethroat, global change, Reed Warbler, sea level rise, Sedge Warbler.