

Unsuitable reintroductions and conservation priorities

Rees (2001) outlined the legal obligation of European States to reintroduce animal species. Amongst other things, he discussed the suitability of a reintroduction programme in terms of the native status of the species, the causes of its local extinction, and its contribution to the species' conservation. But are these matters always considered in European Union countries, and how often is the real priority of reintroduction questioned?

The Government of Catalonia, Spain, and the managers of some of the country's protected areas have been carrying out reintroductions, but many of these have a weak scientific basis. Here we look at the case of the Aiguamolls de l'Empordà Natural Park, a wetland reserve of 4,783 ha in north-east Catalonia. Since its creation in 1983 there have been five major 'reintroductions': the purple gallinule *Porphyrio porphyrio*, Montagu's harrier *Circus pygargus* and otter *Lutra lutra*, and two cases more properly defined as introductions (white stork *Ciconia ciconia* are native to Catalonia but did not occur regularly in the Aiguamolls region, and fallow deer *Dama dama* were probably introduced by the Romans). Only the otter, categorized as Vulnerable on the IUCN Red List, is considered of global conservation concern. None of the birds were endangered in Europe, and the white stork and the purple gallinule were increasing in Spain (Tucker & Heath, 1994). The main purpose of these reintroductions was, as stated by the management of the Park (Sargatal, 1992), to increase local species richness. In the case of the fallow deer, it was claimed that a secondary reason for the 'reintroduction' was for vegetation control. It is questionable whether these reintroductions contributed to the global conservation of the species and ecosystems concerned.

Indiscriminate use of conservation measures can have adverse side-effects on ecosystems (IUCN, 1995), but indirect repercussions are also of concern. The inappropriate use of scarce human and economic resources for conservation, as may have happened in Catalonia, displaces effort and finances from more objectively assessed priorities. While staff and volunteers in the Aiguamolls de l'Empordà Natural Park were expending a great deal of effort in reintroductions, the Park had neither an approved management plan nor a proper biological inventory. Moreover, the water management undertaken in the Park, oriented to meet the criteria of the Ramsar Convention, was having detrimental effects on the environment. The Park was designated a Wetland

of International Importance in 1993, but at the expense of flooding coastal areas with freshwater. Salt marshes suffered from a decrease in salinity and eutrophication, halophilous vegetation and submerged macrophytes such as *Ruppia* spp. started to regress, and the halophytic reed *Phragmites australis* invaded part of the area. Zooplankton communities were disturbed (Quintana *et al.*, 1998), the fartet *Aphanius iberus*, a fish endemic to the coastal marshes of eastern Iberia and categorized as Endangered on the 2001 Spanish Red List of continental fishes, suffered a critical population reduction within the Park (Moreno-Amich *et al.*, 1999). Fortunately the present management are beginning to modify the conservation objectives of the Park.

Reintroduction obviously needs to be linked to local extinction, but local extinction alone is not a sufficient justification for reintroduction. Reintroduction should also be considered from the perspective of global conservation, undertaken when it can positively contribute to reducing the extinction risk of a given taxon. Finally, the suitability of reintroduction in a given protected area should be carefully ranked together with other management options. We hope that this example provides an illustration of the importance of setting priorities in conservation and may add to the debate regarding the appropriate use of reintroduction.

Pere Pons & Xavier D. Quintana.

Departament de Ciències Ambientals, Universitat de Girona

Campus de Montilivi, E-17071 Girona, Catalonia, Spain.

E-mail: pere.pons@udg.es

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