



More rigorous studies needed to evaluate impact of invasive birds

Conservation researchers have warned against acting on the findings of a previous study that argued for the eradication of several invasive birds, including the Canada goose and sacred ibis, in Europe. They suggest the results are based on anecdotal rather than scientific evidence, and that detailed feasibility studies are needed before such management decisions are made.

The potential impact of invasive species is often measured using scoring systems that rank those species on criteria, such as transmission of disease, damage to agriculture and impacts on human health and native species.

The study illustrated some of the problems with this approach by challenging the findings and recommendations of a recent piece of research (Kumschick & Nentwig, 2010). This suggested that some bird species have impacts as high as the worst invasive mammal species and called for action against these invaders, in some cases, through eradication. The current study repeated their analysis using the same scoring system to see if they reached the same conclusion.

The scoring system used six categories of environmental impact, such as competition and predation, and six categories of economic impact, such as damage to agriculture and forestry. The study focused on the five birds that Kumschick & Nentwig ranked the highest and that they argued could be the target for eradication campaigns. Values for each category could range from 0 to 5, where 0 is no impact and 5 is the highest impact possible. Scores were assigned on the basis of a review of the literature on the five bird species.

The current assessment differed significantly from that of Kumschick & Nentwig. In the original study, the total environmental score ranked from 1 to 15 depending on the species, whereas in the new study, the total environmental score ranked from 0 to 10. Similarly, the total economic score was between 0 and 21 in the original and between 0 and 13.3 in the current study. Apart from one species – the ruddy duck – the estimates of impact of the current study are considerably lower than in the Kumschick & Nentwig study.

The study investigated reasons behind the different results by critically assessing available evidence for impacts in previous studies on these species. For instance, for the invasive sacred ibis, Kumschick & Nentwig assigned a value of 5 for its environmental impact as a predator. However, the current study could only find two claims to support this and neither had rigorous scientific evidence behind them. As such, the current study only gave the sacred ibis an impact score of 2 for predation.

In this study the highest potential environmental impact is observed for the Canada goose, followed by the sacred ibis and ruddy duck. The potential economic damage is greatest for Canada goose, followed by the ring-necked and monk parakeet.

The study highlighted several general points of criticism about current scoring methods. For example, they tend to assume that the impact of invasive species is uniform throughout a species' distribution range, while in fact it may vary with abundance and habitat. It also calls for more empirical research on invasive species to inform well-designed feasibility studies for different management solutions. In particular, it warns that some eradication campaigns may be unnecessary and, unless backed by strong scientific evidence, could lead to public backlash or other negative impacts, such as the increase of pests which the invasive species has previously kept down.

Source: Strubbe, D., Shwartz, A. & Chiron, F. (2011) Concerns regarding the scientific evidence informing impact risk assessment and management recommendations for invasive birds. *Biological Conservation*. 144(8):2112-2118.

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Theme(s): Biodiversity

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To cite this article/service: "[Science for Environment Policy](#)"; European Commission DG Environment News Alert Service, edited by SCU, The University of the West of England, Bristol.