

Brussels Psittacidae: impacts, risk assessment and action range

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Introduction

Invasive species raise many questions regarding their environmental impacts. Literature provides ample advice to help field management choices, sometimes contradicting each other. For example, measures should be applied at low levels of abundance; but at the same time, it is advised to adapt action to impacts, which are often unknown at the moment of settlement. The necessity to define present and potential impacts of introduced species is increasingly obvious. In the case of the Psittacidae, there are only a few examples of feral population management. This could be linked to the fact that these species scarcely induce major economic damages. Furthermore, many people living in town welcome those birds which are to a certain extent a substitute to the contact between man and nature.

The Brussels avifauna has been studied for many years by the birding society Aves, in collaboration with Brussels Capital-Region Environment Institute. Information is partly obtained through common birds monitoring (by point counts) within the framework of the Brussels Environment Survey, but also thanks to research conducted in 2002 to assess the impact of the Ring-necked Parakeet *Psittacula krameri* in Brussels (Weiserbs *et al.*, 2002). Finally, a recent study carried out in 2008 reviewed the current status of Psittacidae populations in the Brussels Region and analysed their present and potential impacts in order to inform policy-makers about the best management practices to limit these impacts. This contribution stems from those different researches.

Brussels Psittacidae

Three Psittacidae species breed in Brussels: the Alexandrine Parakeet (*Psittacula eupatria*), the Ring-necked Parakeet (*Psittacula krameri*) and the Monk Parakeet (*Myiopsitta monachus*). The case of the Monk Parakeet will not be further developed here, the Brussels feral population being easier to manage (Weiserbs, in press). If Ring-necked Parakeet is known to be introduced in at least 35 countries, feral populations of Alexandrine Parakeet are much scarcer. In Brussels, both Ring-necked Parakeet and Alexandrine Parakeet are strongly increasing, although the second, having settled only recently, is much less numerous. Both populations are mixed in the field, sharing, for example, roost and feeding sites. Moreover, most of the Alexandrine Parakeet population is located in the North-West of Brussels, where the Ring-necked Parakeet is the most abundant. Feeding by man is supposed to have an important impact on demography, reducing winter mortality and increasing breeding success.

Present and potential impacts of the Ring-necked Parakeet in Brussels could be summarized as followed:

- Competition with indigenous fauna is at present the main threat of the species. In Brussels, a negative impact on Nuthatch has been suggested (Strubbe & Matthysen, 2007) and is observed when competition is experimentally forced (Strubbe & Matthysen, 2009).

- Point count survey between 1992 and 2008 indicates a favourable status of cavity nesting birds in Brussels (Weiserbs, 2008). Moreover, if no effect is observed for seven cavity nesting species, the Ring-necked Parakeet density has a significant positive effect on the trends of four other hole nesters: Green Woodpecker, Blue Tit, Great Tit (less significant) and Short-toed Tree creeper. This could be explained by the advanced age of most tree settlements in Brussels parks and the excavating behaviour of Ring-necked Parakeet, using any starting wounds on the trees to create new cavities. Besides, research conducted in 2002 showed extremely high cavity densities in parks inhabited by dense populations of Ring-necked Parakeet (Weiserbs *et al.*, 2002). Nevertheless, a negative impact is feared in the short-term, linked to the regeneration of tree settlements and resultant shortage of cavity supplies. Moreover, impact on other groups, like bats, is unknown, but could be real.
- On the fringe of the previous main threats, a local impact is possible on some fruit crops (as observed in Great Britain).
- Finally, very localised impacts are linked to noise disturbance and dirt under the roosts.

Present impacts of the Alexandrine Parakeet in Brussels are weak as the population is not very large, but are adding to those of Ring-necked Parakeet to which the Alexandrine is associated in the field. Moreover, a strong increase has to be expected in the future, which may result in growing impacts.

The risk assessment is based on two schemes. The “UK non-native organism risk assessment scheme” (Anonymous, 2005), concerning risks for environment and socio-economy, leads, for both species, to the conclusion of a weak to moderate impact. The “Guidelines for environmental impact assessment and list classification of non-native organisms in Belgium” (Branquart, 2007), assessing risks for Belgian biodiversity, leads to classify both species between categories B (Watch list) and C (low environmental risk).

Since the two species are closely mixed (co-occur?) in the field, measures will have to consider both species in concert. The actions range reviews the possible management measures, from the weakest to the strongest:

- Reduce and modify feeding by man to try to slow down demography.
- Act at the cavity supply level to lower potential competition with native cavity-nester (nest boxes setting, old trees preservation,...).
- Sterilization using a chemical substance (as Diazacon) could be possible; this requires catching the birds at roosts, for example by cannon netting
- Eradication is difficult to plan in an urban context and discouraged, as the current impacts are assessed as low and as the public reaction could prevent future action against more problematic species.

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