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Recovering grey partridges: A genuine intersection of sustainable farming, wildlife conservation and management

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According to the records of the Hungarian Game Management Database [1], grey partridges (*Perdix perdix*) in Hungary suffered a 98% decline during the past 50 years, with local extinctions becoming ever more frequent. Estimations of hunters indicate that where partridges persist, their numbers are probably below the recovery threshold of 2 pairs per square kilometres [2]. It is therefore essential to demonstrate how this trend can be reversed locally by implementing a complex management package that involves the restoration of partridge habitats, a reduction in predation pressure, an introduction of supplementary feeding and the reinforcement of existing populations following the grey partridge recovery guidelines of Buner & Aebischer [2].

The LAJTA Project (3065 hectares) started in 1992 and is the longest ongoing farmland eco-system and wildlife monitoring programme in Central-Europe. Actions to conserve grey partridges focused on habitat development and predator control [3-5], however concerning the latter activity, due to changes in the legislation, some of the originally applied methods were altered during the project period.

In 2014, along with the employment of a new gamekeeper on 2545 hectares, predation management based on legal restraining and killing trapping methods was intensified to reduce fox (*Vulpes vulpes*), badger (*Meles meles*), stone marten (*Martes foina*), weasel (*Mustela nivalis*), brown rat (*Rattus norvegicus*) and corvid (*Corvus cornix*, *Pica pica*) numbers prior to and during the breeding period of partridges. Additionally, a network of hopper feeders and drinkers was introduced along field margins, while new "in field" game cover strips were established within a 370 hectare core area of the project. Altogether 42 chicks of four bantam reared broods were fostered to four barren pairs in 2014 and 2015, and a family group consisting of two adults and 11 juveniles was released in 2015. Since then, no birds were released, due to the density of partridge pairs reaching the recovery threshold in 2016.

As a result of the management package applied, grey partridge pairs increased from 12 to 59 between 2014 and 2017. During the same period, brown hare (*Lepus Europaeus*) and pheasant (*Phasianus colchicus*) densities rose, allowing for increased harvests, thus contributing to the maintenance of management activities primarily targeting grey partridge recovery. Apart from game, many other species benefit from the revitalised grey partridge conservation programme. Prior to 2014, the last great bustard lek (*Otis tarda*) was observed in 2007 by Faragó & Spakovszky [6]. In 2016 two males and four females, while in 2017 two males and seven hens were observed at an old lekking site, following the overwintering of 32 males and 13 females. The LAJTA Project is also home to other species of remarkable biodiversity, such as the imperial eagle (*Aquila heliaca*), the white tailed eagle (*Haliaeetus albicilla*), or the red footed falcon (*Falco vespertinus*). Recent censuses of birds of prey [7] indicate no change in the large nesting population of marsh harriers (*Circus aeruginosus*), and common buzzards (*Buteo buteo*), while the sighting frequency of overwintering hen harriers (*Circus cyaneus*) and rough-legged buzzards (*Buteo lagopus*) is four to eight times higher than the national average [8].

Unfortunately, the majority of the farms within the project area that were involved in previous agri-environmental contracts were not renewed in 2015, due to the high competition of eligible applicants throughout the country. Therefore, the major factor for the recent increase of grey partridges at the LAJTA Project was almost certainly predation control. The ability to increase densities of farmland game and other ground nesting bird species alongside the high abundance of raptors further highlights the relevance of efficient and legal management of generalist predators. In order to boost the effect of agri-environmental schemes targeting the recovery of species, it is recommended to supplement the creation and restoration of habitats with gamekeeping.

Maintenance and development of the innovative combination of trapping methods applied at the LAJTA Project is essential to improve success of farmland wildlife conservation and management throughout Central-Europe.

With regard to the already expired implementation time table laid out in the Agreement on International Humane Trapping Standards (AIHTS), which is binding to all EU Member States, the challenge is how the obligations may be rapidly fulfilled by competent authorities. Without efficient certified and approved methods at hand, wildlife professionals may lose an important tool of management. Establishment of a trans-boundary cooperation to implement AIHTS in a way that benefits wildlife conservation, is an urgent challenge which has to be met by stakeholders.

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