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EFFECT OF ACTIONS SUPPORTED BY THE NATIONAL GAME MANAGEMENT FUND ACCORDING TO THE HUNTERS IN HUNGARY

ZSOLT BIRÓ*, KRISZTIÁN KATONA, MIHÁLY MÁRTON, GERGELY SCHALLY, SÁNDOR CSÁNYI

Institute for Wildlife Management and Nature Conservation, Hungarian University of Agriculture and Life Sciences, H-2100, Gödöllő, Páter Károly street 1., Hungary
*correspondig author: biro.zsolt@uni-mate.hu

ABSTRACT
Since 2017, grants from the National Game Management Fund have supported the development of habitats for the game species by providing hiding and feeding places for them and by the effective control of their predators. We evaluated the effects of these management actions on the local wildlife populations with a questionnaire survey among the supported game management units between 2018 and 2020. We asked them about their impressions or measured data regarding the size and quality of the game populations treated during the program. We compared the conditions before and after the interventions, specifying the methods in case of measurements. The 241 answers covered 35% of all the supported game management units. Most applicants (94%) rated their management actions as effective, while only 2% reported the contrary. Game managers collected data to measure the efficiency relatively infrequently (14±9% of the beneficiaries for each variable group in each target area, min-max: 3–44%). Much more often, they relied on non-scientific observations and perceptions (63±14%, min-max: 36–93%). We conclude that it would be necessary to evaluate the efficiency on the basis of systematic data collection and analyses (monitoring), at least with smaller samples at the level of game management units. Game managers should measure the use of the treated areas by the game species and the changes in the quantity and quality of the populations (e.g., camera trapping at drinking and feeding sites, spotlight counts of brown hares, estimating the reproduction, condition or trophy quality indices).

Keywords: small game, estimation, questionnaire, wildlife/game management

INTRODUCTION

The small game populations (European hare – *Lepus europaeus*, grey partridge – *Perdix perdix,* common pheasant – *Phasianus colchicus*) have declined since 1960s in Europe (hare – SMITH ET AL. 2005; CSÁNYI, 2019, partridge – KUIJPER ET AL. 2009, pheasant – DRAYCOTT ET AL. 2002) and also in Hungary (CSÁNYI ET AL. 2021). The reasons for the decline are, on the one hand, habitat changes: intensive agriculture with large fields and monocultures, less food diversity (plants and insects), and loss of edge vegetation (BÁLDI AND FARAGÓ 2007, KUIJPER ET AL. 2009, PANEK 2013, SCHAI-BRAUN AND HACKLÄNDER 2014), faster machines (DEÁK ET AL. 2021) and increased predator populations and less active predator control (BRO ET AL. 2001, DRAYCOTT ET AL. 2008, PANEK 2013, REYNOLDS ET AL. 2010).
The European Union is trying to mitigate the problem caused by the intensification of the agricultural landscape with the Common Agricultural Policy. The agri-environment schemes (AES) can help in some cases, like in Germany, where the wildflower strips increased the plant diversity and pollen resources (SCHMIDT ET AL. 2022), but in Hungary the AES arable fields and grasslands, in general, were not effective to raise the population density of European hare (UJHEGYI ET AL. 2021).
Wildlife managers also treat the habitats and the populations to ensure a sustainable harvest in the hunting grounds. They establish game plots and meadows, feeders and water stations, plan the harvest of the game species and control the predators. These actions often require more financial resources than that is available in the budget of the game management units (GMU).

Since 2017, grants from the National Game Management Fund – established by the Hungarian Hunters' National Chamber – have supported the development of the habitats for the game species by providing hiding and feeding places for them and by the intensive control of their predators.

Our goal was to investigate the implementation and effectiveness of all activities supported by the National Game Management Fund, aiming to improve and preserve the environmental conditions of the game species, increase the population of small game species, increase the proportion of areas used as hiding and feeding places, and effectively control the population of predator species.

MATERIALS AND METHODS

All already supported GMUs were included in the study performed in 2021. A simple questionnaire with 62 questions was created online (Google Forms) to them, which could be completed in 15 minutes.

The questionnaire was distributed by the staff of the Hungarian Hunters' National Chamber to the grant beneficiaries between 2018 and 2020. After the first round of responses (125 replies), a second call (reminder) was published, which resulted in a total of 241 replies by 15 September 2021, when the questionnaire closed.

We asked them about their impressions or measured data regarding the size and quality of the game populations treated during the program, comparing the condition before and after the interventions, and specifying the methods in case of measurements.

While processing the responses received, the frequency rate of each response option was analysed for each question. In most cases, these were response options on a 5-point scale (strongly agree → strongly disagree) or categories as "yes / no / don't know". In the case of explicit responses, we grouped the opinions according to their content and characterised their prevalence, and also listed the sporadic typical responses.

RESULTS

Evaluable information was returned for 35% (241/696) of the supported GMUs. Most applicants (94%) rated their management actions as effective, while only 2% reported the contrary (*Figure 1.*).

Game managers collected data (monitoring) to measure the efficiency relatively infrequently (14 ± 9% of the beneficiaries for each variable group in each target area, min-max: 3–44%). Much more often, they relied on their non-scientific observations and perceptions (63 ± 14%, min-max: 36–93%) (*Figure 2.*).

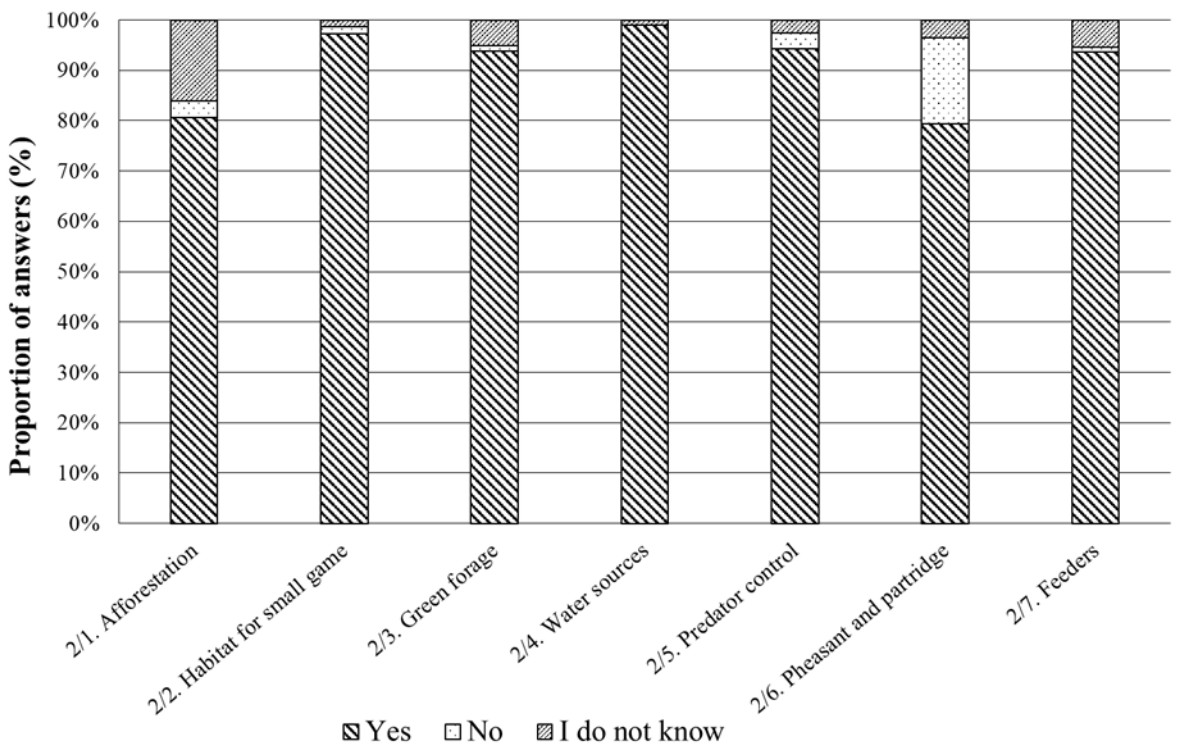

Figure 1. The proportion of the answers from the game managers about the efficiency of the programs

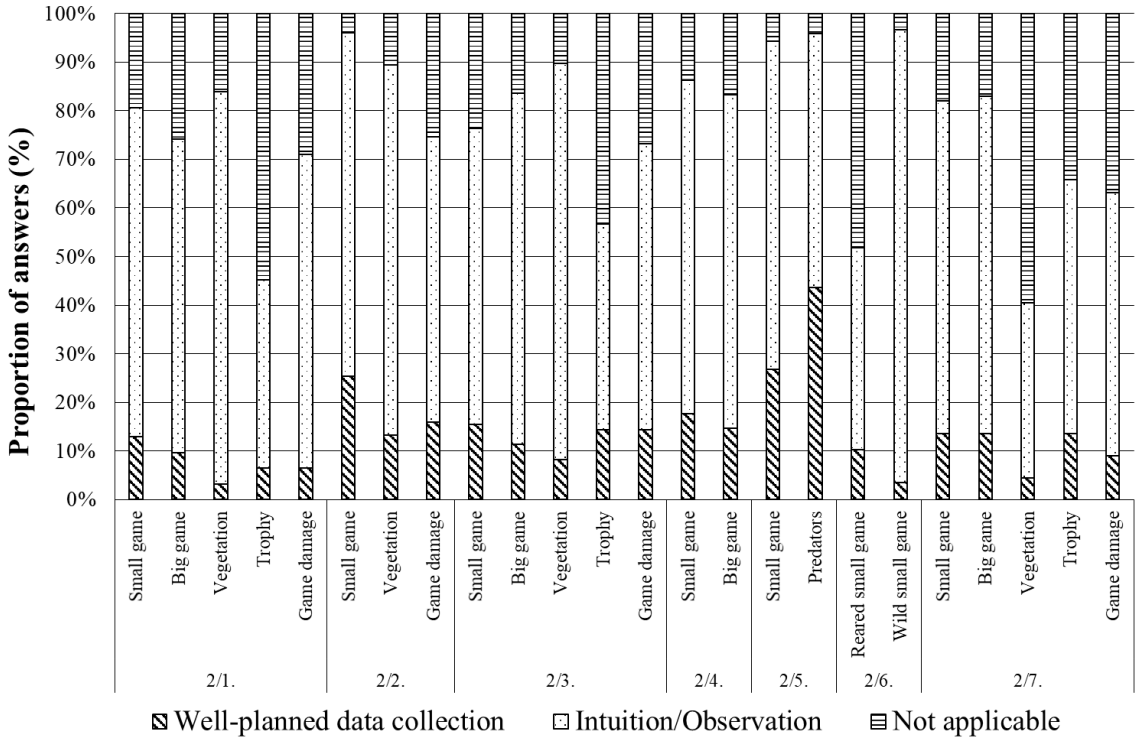

Figure 2. The proportion of the answers from the game managers about the methods and variables that they used to evaluate the efficiency of the programs. (see program names on Fig. 1.)

For example, only 15 game managers reported actual small game population estimates in the Predator Control Program. The most common methodologically well-described estimate was the counting with thermal camera (*Figure 3.*).

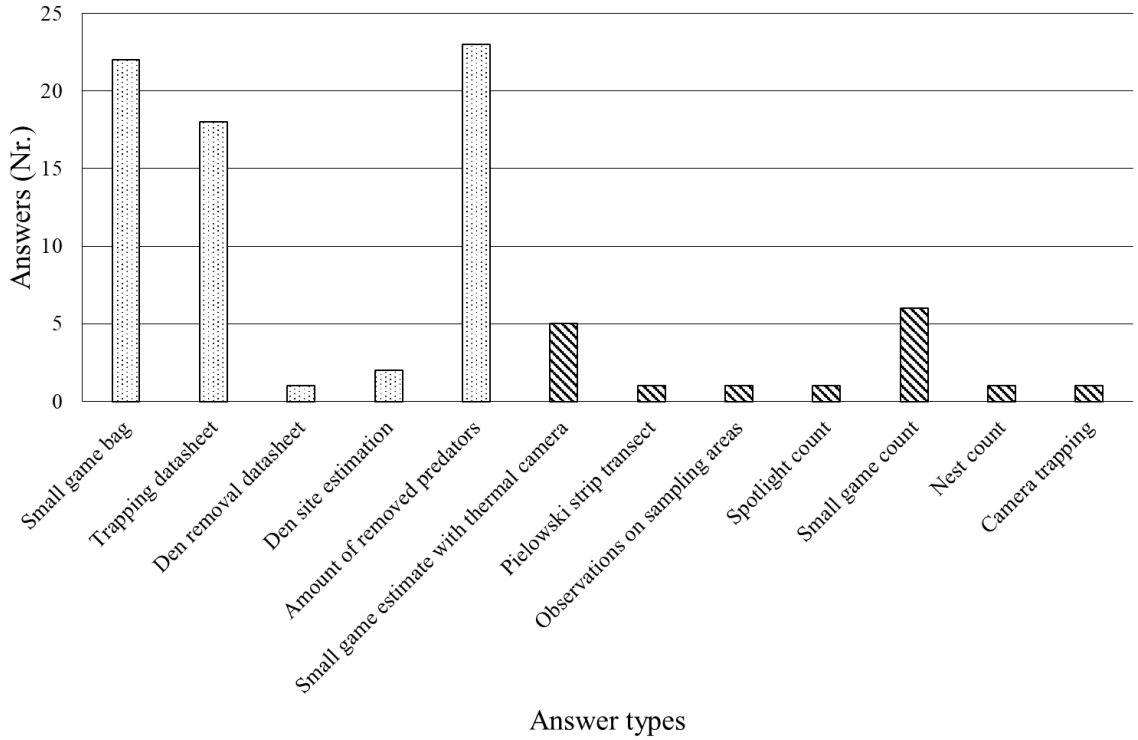

Figure 3. The distribution of the answers from the game managers about the methods used to evaluate the efficiency of the Predator Control program. Striped columns: estimation of the effects of the predator control (estimation of the small game populations); dotted columns: methods which measure mainly the predator removal (not an estimation of the efficiency).

DISCUSSION

The game managers believed that the programs supported by the grants of the National Game Management Fund were effective. Looking at the responses for each target area in more detail, it is clear that the most negative comments were received in relation to the support for the afforestation and the restocking of pheasant and partridge populations. These opinions showed the least satisfaction among the grant recipients.

The afforestation however is a hard task for the game managers. Although the program provides the financial conditions for habitat management, landowners do not always cooperate. On leased land, the afforestation (hedgerows, shrubs) is difficult or impossible.

It is crucial to mention that the responses clearly show that judgements are mostly based on intuitions or perceptions and, better still, on observations that are not targeted or do not prove effectiveness. Systematic data collection and analyses (monitoring) of the programs are rarely established. In a few cases did, managers indicate that actual measurements had been taken, mostly to observe the use of the intervention area or the wildlife management equipment installed by game species. However, it should be stressed that in many cases, more sophisticated estimation procedures, such as day and night counts of small game species in a given area, have probably been developed.

We recommend evaluating the efficiency on the basis of monitoring programs (standardised data), at least with smaller samples at the level of GMUs. Game managers

should measure the use of the treated areas by the game species and the changes in the quantitative and qualitative traits of the populations (e.g., digital tools, camera trapping at drinking and feeding sites, spotlight counts of brown hares, estimating the reproduction, condition or trophy quality indices of roe deer).

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