

U N I V E R S I T Y O F D E B R E C E N

FACULTY OF AGRICULTURAL, FOOD SCIENCES AND

ENVIRONMENTAL MANAGEMENT

DEPARTMENT OF NATURE CONSERVATION ZOOLOGY AND GAME MANAGEMENT

Head of the Department:

Lajos Juhász, Ph.D.

associate professor

R E S E A R C H P R O P O S A L

*Site fidelity and survival of urban Hooded Crow (*Corvus cornix L.*)*

Supervisor:

László Kövér, Ph.D.

assistant lecturer

Debrecen

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Introduction

Formerly, Hooded Crow (*Corvus cornix* L.) used to be specifically an agri-environment bird species, however, they colonized many cities in recent decades. Their population is growing in Debrecen as well, due to the structure of the city. It provides everything needed by the crows, from diverse food sources to nesting opportunities (Kövéér et al. 2015).

On the other hand, the drastic increase of their urban population causes numerous negative effects on the bird fauna (e.g. nest predation), and for inhabitants of the city (e.g. noise, aggression, etc.). Being aware of these threats, extensive study related to their behaviour, motion patterns, and expansion is getting more and more important.

Our knowledge about Hooded Crows' survival, movements, and site fidelity is highly incomplete. The aim of this study is to gather information regarding these matters, by marking the birds individually.

Objectives

- Study the survival and the site fidelity of Hooded Crow
- Gathering other data (e.g.: biometry, ethology)

Material and methods

The crows will be caught at the local zoo in Debrecen with a ladder trap. Baits (bread, meat) and a live Hooded Crow as decoy bird will be placed in the ladder trap (Figure 1.). The captured crows will be marked individually and biometric data will be noted. After these the crows will be taken over to the four quarters to different distances (5 and 10 km) where they will be released (Figure 2). In case of every quarter we are planning to release 6-6 crows, 3 to 5km and 3 to 10km far; so all together we study sample will be mean 24 crows. Before the project we will make contact and get the needed permissions from the hunting authority.

The scheme ring will be put on the left tarsus, furthermore, every crow will be marked with a wing/patagial-tag on each wing. We are going to use orange wing tags with a letter and two numbers written to them, all marks in black colour. The letter means the quarter: N: north, E: east, S: south, W: west; the first number means the distance from the place of capture where the birds are going to be released (5→5km, 1→10km), the second number means the repeat (1, 2, 3,) (Figure 3.). The marking method is based on Caffrey (2000) (Figure 4.), and personal consultation with László Tóth Ph.D (he works on Western Marsh Harrier, *Circus aeruginosus*

with the same technique. Using patagial-tags is more advantageous than marking with colour rings, because wing-tagged individuals are easier to observe, and notice their identification is much easier even from greater distance. Marked birds will be observed in different areas in and outside the city, according to the method given in advance. As a result of this study, we can expand our knowledge about the biology of urban Hooded Crows. Hopefully, - due to this study - we will get know more details about the urban Hooded Crow survival rate and site fidelity.

Research period

2017.06.15. – 2017.07.15.

Participants

Persons responsible for the research:

- **László Kövér Ph.D.:** assistant lecturer, supervisor
- **Lajos Juhász Ph.D.:** associate professor, head of department, bird bander

Further persons taking part in the research:

- Petra Paládi
nature conservation engineer BSc student
- Dávid Tóth
wildlife management engineer BSc student
- Norbert Tóth
technical assistant
- Sámuel Zsolt Varga
Ph.D. candidate

Financial background

The project is going to be financed by the Department of Nature Conservation, Zoology and Game Management of the University of Debrecen.

Tools required for the banding will be supplied by Lajos Juhász Ph.D.

Data analysis

Data will be analysed by statistical tests, with GIS methods involved. Ways of publication: articles (online, offline), peer-reviewed journals, conferences (international, Scientific Student Conference).

Literature

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Figure 1. *Ladder trap with some crows*



Figure 2. Release Plan of urban crows

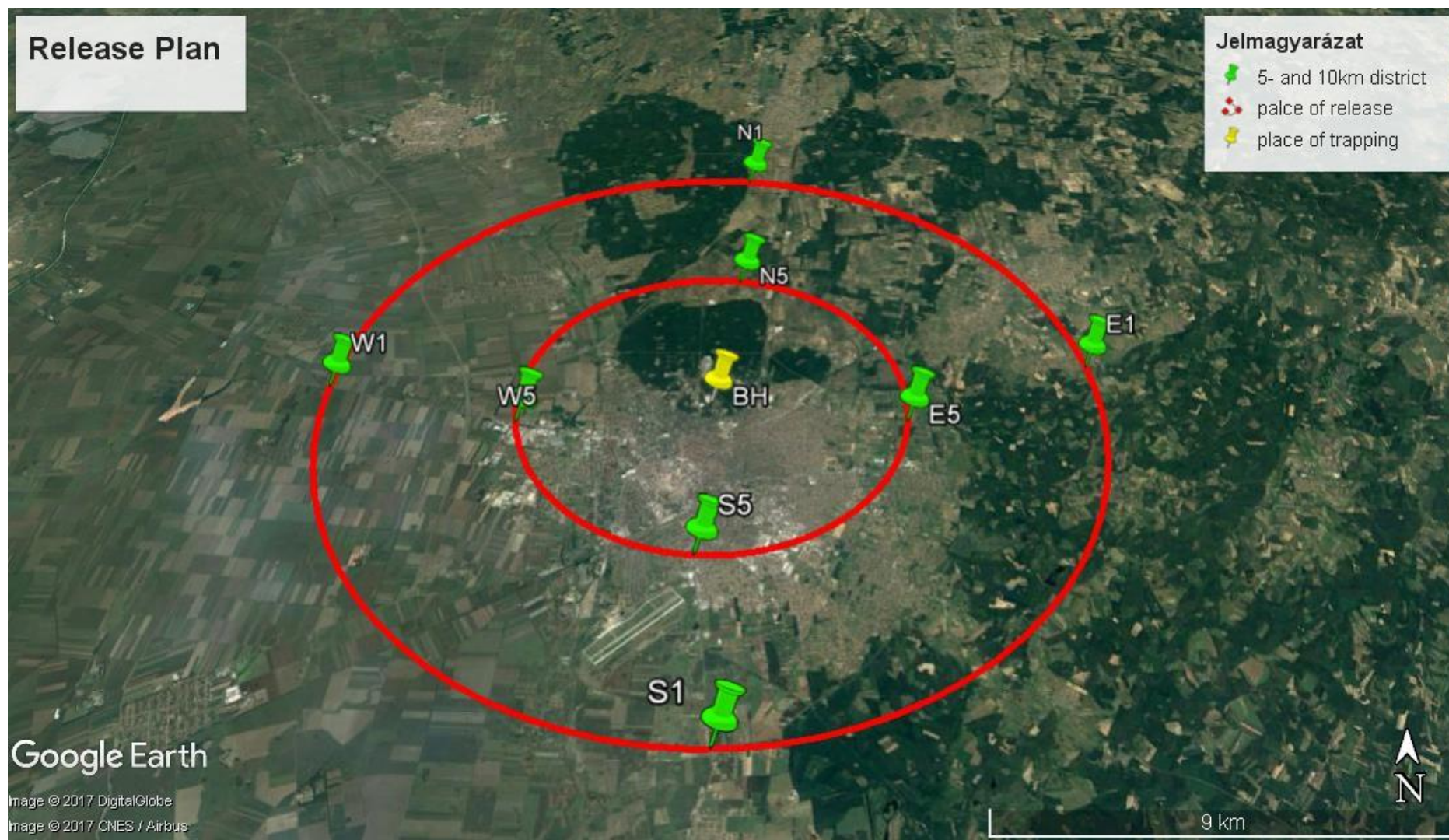
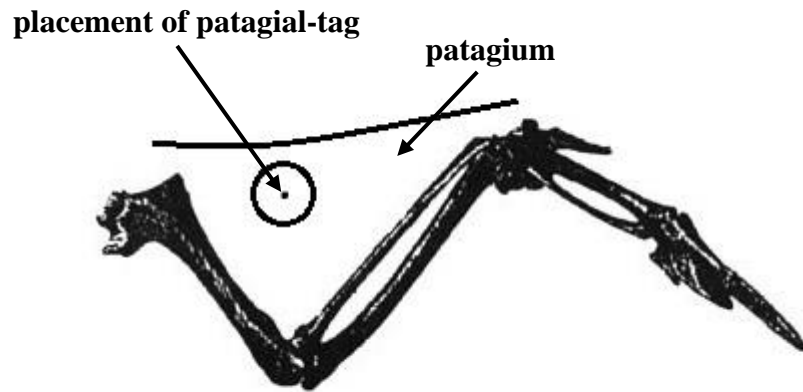


Figure 3. *Method of patagial-tag marking based on Caffrey (2000)*



Tag placement should be such that the washer does not rub against bones or associated tissues



Corretly attached from the inside out: head of the tag, washer, bird wing, tag, washer



Marked crow

Figure 4. *A patagial-tagged crow (North, 10km, second)*

