

ABOUT THE DISTRIBUTION AND BREEDING OF BLACK STORK (*Ciconia nigra* LINNAEUS 1758) IN THE SOUTH-WEST OF THE COUNTRY (DOLJ COUNTY)

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Abstract. In our study, we have synthesized the data regarding the areas of distribution and nesting of the Black Stork (*Ciconia nigra* LINNAEUS 1758) on the territory of Dolj county, in the south-west of the country. We render the nesting sites already mentioned in the existing scientific literature (Bistreț, Zăval, ROSPA Calafat-Ciuperceni-the Danube, ROSPA the Jiu-the Danube Confluence) and, based on our own observations made during April-September 2012 and April-July 2013, we highlight certain aspects regarding the nesting of a Black Stork pair in a new location, namely Murgași forest, which is located in the hilly region of Dolj county. During our research, we found two more sites, which provide good environmental conditions for the breeding of the black stork: Radovan and Fărcaș-Plopu villages, also located in the higher region of the county. It is well-known the fact that the Black Stork (*Ciconia nigra*) represents a valuable species with regard to biodiversity and it has a distribution and breeding area that is not sufficiently known. Thus, we consider that the data resulted from our research could highly contribute to a better understanding of the biology, the dynamics and the distribution of this species in our country.

Keywords: Black Stork, nesting, distribution, Dolj county.

Rezumat. Despre răspândirea și cuibăritul berzei negre (*Ciconia nigra* LINNAEUS 1758) în sud-vestul țării (județul Dolj, România). În studiul de față sunt sintetizate datele privind ariile de răspândire și de cuibărit ale berzei negre (*Ciconia nigra* L.1758) pe teritoriul județului Dolj situat în sud-vestul țării. Sunt menționate locurile de cuibărit consemnate în literatură (Bistreț, Zăval, ROSPA Calafat-Ciuperceni-Dunăre, ROSPA Confluența Jiu-Dunăre) și, totodată, pe baza observațiilor efectuate de noi în aprilie-septembrie 2012 și aprilie-iulie 2013, evidențiem aspectele surprinse în timpul cuibăritului unei perechi într-o nouă locație, respectiv în pădurea Murgași aflată în compartimentul colinar al județului Dolj. Tot pe baza investigațiilor proprii, mai precizăm, alte două zone (Radovan și Fărcaș-Plopu), susceptibile pentru reproducerea berzei negre, situate de asemenea în etajul superior al județului. Fiind știut faptul că barza neagră (*C. nigra*) este o specie valoroasă din punct de vedere al biodiversității și că ea are un areal de răspândire și reproducere insuficient cunoscute, considerăm că rezultatele observațiilor noastre pot contribui la o mai bună cunoaștere a biologiei, dinamicii și răspândirii acestei specii pe teritoriul țării noastre.

Cuvinte cheie: Barza neagră, cuibărit, răspândire, județul Dolj.

INTRODUCTION

The Black Stork (*Ciconia nigra* LINNAEUS 1758) is a species of palaeartic origin with an uneven distribution in the temperate area of Europe and Asia; during winter, it migrates to Africa and India. In our country, it has been mostly seen during the spring and autumn migration, although it remains as a summer visitor near lakes and rivers. The nesting pairs of Black Stork are scarce and the isolated places where they nest (large salvage forests with tall trees near wetlands) make them even hard to be observed and studied (DOMBROWSKI, 1912; LINȚIA, 1955; MUNTEANU, 2012). The distribution and breeding area in our country are insufficiently known. Moreover, this area is often subject to limiting factors such as the shrinking of forests, the cutting of old trees, the limitation of trophic resources – aquatic organisms – due to the shrinking of wetlands as well (MUNTEANU, 2009).

In the southwest region of the country, the most numerous observations of its presence have been recorded in the Danube alluvial plain, in the wetlands between Calafat and the Jiu, where the Black Stork is frequently seen, but in small numbers. The most significant numbers were recorded during the autumn migration. (RIDICHE & MURARIU, 2009; RIDICHE & BOTOND, 2011; RIDICHE, 2012). Direct observations about the nesting of this species within the territory of Dolj county were made by GĂINĂ (1981), in Braniște/Stejaru forest located 3 km north from Bistreț village (Dolj County). Other recordings regarding its nesting in the area of Ciuperceni-Desa and Zăval forest belong to MUNTEANU et al. (2002) and MUNTEANU (2009). PAPP & FĂNTĂNĂ (2008) also reported a number of 10-16 pairs in Calafat-Ciuperceni-the Danube ROSPA and about 20-30 pairs in the Jiu-the Danube Confluence ROSPA. These data are doubtful, without details of the exact location of the nests. Starting with April 2012 we have collected information and observations on the nest of a pair of Black Stork situated at approximately 2 km south from Murgași village, Dolj county (RIDICHE & ILINOIU, 2012), Fig. 1.

Considering the preservation aspect, the Black Stork belongs to SPEC 2 category (species found in Europe that have a derogatory preservation status), and, with regard to the threatening status, it is a vulnerable species in our country and uncommon in Europe (HAGEMEIJER et al., 1997; MUNTEANU, 2009).

For its protection, this species has been included in Annex I of the Bird Directive of EC and in Annex II of the Berna and Bonn Conventions.

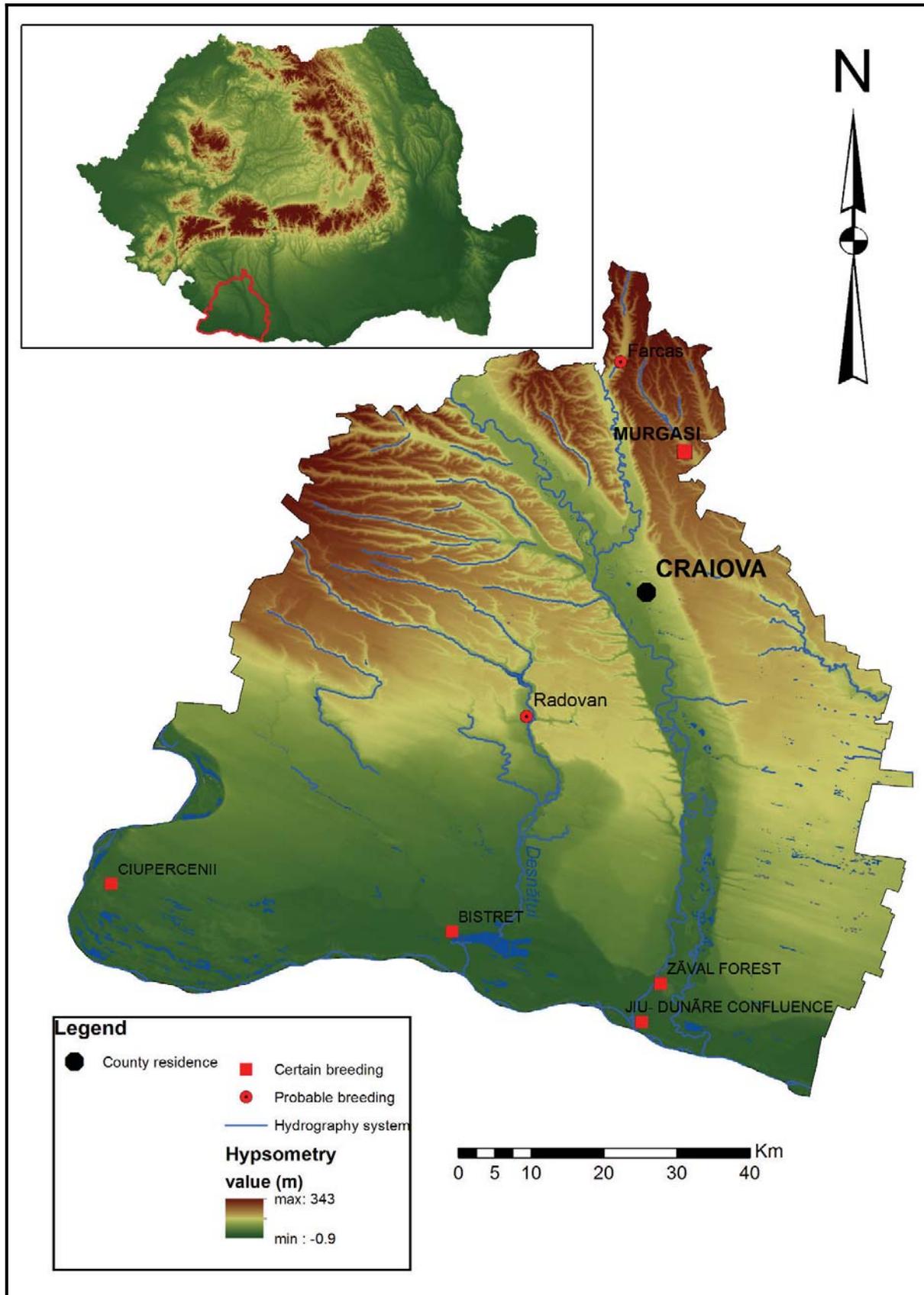


Figure 1. The map with the breeding areas of black stork (*Ciconia nigra*) in Dolj county (processing in GIS Program: A. Ilinoiu).

MATERIALS AND METHODS

The study is based on personal observations at the nest and in the nearby areas, as well as on literature data. The observations at the nest were recorded in 2012 at the following dates: April 16th, June 1st, July 1st, August 7-8th, August 23rd, September 19th and continued this year (2013) on April 26th, May 3rd, June 25th-26th. The observations were made with a binocular (Nikon Monarch 10x42, Zeiss Jena 10x50), from fixed points and in movement. Several photos were taken with a digital camera Sony 15x and with a DSLR Nikon D3200.

RESULTS AND DISCUSSIONS

The nest observed in our study is placed in the area of Murgăși village at a height of about 4 m, in a tall oak tree situated at the border of a broadleaf forest (*Quercus* sp.). In the nearby area, there can be found old tracks of forest exploitation. In the nesting area, there is a compact and well preserved broadleaf forest of approximately 300 ha (Fig. 2).

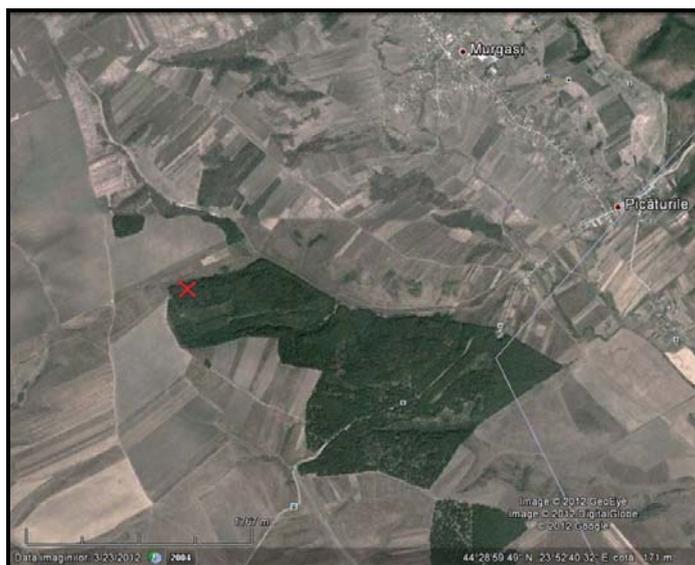


Figure 2. Satellite image with the broadleaf forest in Murgăși village (from Google Earth).

The predominant tree species are the Turkey oak (*Quercus cerris*), the Italian oak (*Q. farineto*) and among them there are also common British oaks (*Q. pedunculata*), common hornbeams (*Carpinus betulus*), common ash (*Fraxinus excelsior*) and others. The shrub layer is well developed especially along the border of the forest (*Crataegus monogyna* - common hawthorn, *Rosa canina* - dog rose, *Cornus mas* - European cornel, *Cornus sanguinea* - common dogwood, and others).

From a geomorphological point of view, the area is included in the Olteț Piedmont, which is included in a larger entity called the Getic Piedmont. Near this area, at about 2 km eastward, there is the Geamărtălui creek, a tributary of the Olteț river. This creek has a fluctuant flow, mainly influenced by precipitations, and during droughty summers, it often dries (CETĂȚEANU et al., 1981). In the nearby area, there are crop fields, especially corn fields where White Storks (*Ciconia ciconia*) can often be seen. The largest number of White Stork specimens was recorded on June 25th 2013 (18 specimens).

The nest, made of little twigs and protected on the inside with a layer of grass, was inhabited on April 16th, 2012 by the female Black Stork (Pl. Ia). Coming back to the nest on the 1st of June, we made observations of the nest from a nearby tree. As a result, we encountered the presence of three chickens in a fully white coat, with a yellowish beak, and black coloured skin around the eyes (Pl. Ic, d). On July the 1st, 2012 the juveniles were in the moulting phase, during which the white-grey coat is replaced with another one having a dark brown colour, and the beak became black (Pl. If). During our research we have been able to observe only one adult coming to the nest and bringing food, or flying around the nest (although it is well known the fact that the upraising of the juveniles is usually provided by both adults).

By the 8th of August 2012, the juvenile black storks had already left the nest and on September 19th we recorded our last observation of one of the juveniles in a field near the nesting place.

In 2013, the first observations about the return of the Black Stork at the nest (Murgăși forest) was recorded on April 26th, when two adult specimens were flying together in circles over the forest towards the area where the nest was placed. For the first time during our observations, both adult Black Storks were seen together. Later on during the month of May, the female stork was already installed in the nest (Pl. Ib). On June 25th and 26th we have identified two chickens in the nest. They were in the first moulting stage (the fluff around the neck was changing) - Pl. Ie.

Analysing the available literature data on the Black Stork nesting in our country (number of eggs 3-4, rarely 5, present at the end of April – the beginning of May – DOMBROWSKI, 1912; LINȚIA, 1955), we can state that, regarding

the specimens we observed, we have recorded some differences. Thus, in the spring of 2012, the nesting period took place earlier than the average period recorded before, and, in 2013, we recorded a smaller number of offsprings. These differences regarding the reproduction process could be caused by physiological impairments that could have been triggered by the disturbances in the climatic conditions.

The hilly region of Dolj county, located in the northern half of the area (from the superior border of the plain to the border of the hills, with an average altitude of 325 m above sea level), provides the proper nesting conditions similar to those found in the area of Murgași village. We talk about areas with natural forests found around Radovan village (RIDICHE & BĂLESCU, 2012) and Fărcaș village (Plopu village), near which there are rivers and wetlands and small moors, all abounding in food resources (small fish, eels, frogs, large insects – ex. grasshoppers) that the Black Stork needs for surviving.

In both mentioned villages we have recorded in the past three years one or two specimens of Black Stork during the summer season, flying over the territory (the specimens were manifesting a territorial behaviour), or feeding in the wetlands. Our research will continue with the purpose of determining the phenological status of the species in these areas.

Although Murgași forest (as well as the forests in Radovan and Fărcaș villages) does not have a special protection status, we recommend the implementation of a proper management that can enhance the conservation and reproduction of the species. It is especially necessary to ban the tree cutting which reduces and dissolves the natural habitat of this species. In addition, any other human activities in the nesting area, during the reproductive season (April-August) should be avoided.

CONCLUSIONS

Although it is counted among the most important species from the biodiversity point of view, the Black Stork (*Ciconia nigra*) has an insufficiently known area in our country; there are few data about its nesting and distribution. This is the reason we consider that coming up with new observations concerning the breeding in the broadleaf forest situated at 2 km east of Murgași village (Dolj county), as well as the ones regarding the possibility of nesting near Radovan and Fărcaș villages (Dolj county) have a significant contribution to the better knowing of its biology, dynamics and distribution in our territory.

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Received: March 31, 2013
 Accepted: July 07, 2013



Plate I. (Photo a-f: Adrian Ilinoiu)

a. Black Stork adult at the nest (May 3rd, 2013); b. Black Stork adult at the nest (May 3rd, 2013); c, d. Chicken in white coat - June 1st, 2012; e. Chicken with changing plumage (in the first moulting stage) - June 25th, 2013; f. Juveniles with changing plumage (moulting) - July 1st, 2012.