PLEGADIS FALCINELLUS – THE FIRST REFERENCE AS A BREEDING SPECIES IN THE PRUT RIVER BASIN (ROMANIA)

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Abstract. The Prut River forms the natural border between Romania and Moldavian Republic, respectively Ukraine and represents a natural oasis for all the 230 bird species which are present in it's diverse ecosystems. The studied area, Cârja – Maţa – Rădeanu ponds, situated in the inferior basin of the Prut River, it was created not only for reducing the risk of flooding but also for fisheries. The appearance of these ponds had modified the aspect of this basin, giving shape not only quantitative but also qualitative to the fauna and to the flora of this area. The presence of the aquatic surfaces has drawn the presence of an adequate avifauna, which has found here proper breeding conditions. Many of these species are considered avifauna rarities, being protected not only national but also international. Since the beginning of the observations made in this area – the year 2002 – we remarked the presence of *Plegadis falcinellus* species – with an important number of specimens. Along the years, the presence of this species on this area, we have observed it constantly in July - August months, fact which made me believe that glossy ibis - *Plegadis falcinellus* – might be breeding in the perimeter of wetland Cârja – Maţa – Rădeanu, among spoonbill - *Platalea leucorodia.* In the year 2005, the glossy ibis was present in the study area since the month April, when 11 specimens were recorded – 04.24.2005, at the Carja II fishery's area. As well, along the April – May months, we have observed in this area, constantly, a group of appreciatively 19 - 20 pairs. In the year 2006 in the study area we have found 35 pairs of *Plegadis falcinellus*, breeding in a mixed colony, among some other species of ciconiiforms.

Keywords: Plegadis falcinellus, breeding species, River Prut basin (Romania).

Rezumat. *Plegadis falcinellus* - prima semnalare ca specie clocitoare în bazinul Prutului (Romania).
Râul Prut formează graniţa naturală între România şi Republica Moldova, respectiv Ucraina şi reprezintă o oază naturală pentru cele 230 de specii de păsări prezente în diversele sale ecosisteme. Zona de studiu, eleşteiele Cârja – Maţa – Rădeanu, situată în bazinul inferior al râului Prut, a fost creată atât pentru reducerea riscului de inundaţii în timpul viiturilor cât şi în scop piscicol. Apariţia acestor eleşteie a modificat aspectul acestui bazin hidrografic, modelând atât cantitativ cât şi calitativ fauna şi flora acestei regiuni. Prezenţa suprafeţelor de luciu de apă au atras după sine şi prezenţa unei ornitofaune adecvate, care a găsit aici condiţii propice cuibăritului. Multe dintre aceste specii sunt considerate raritaţi avifaunistice, fiind protejate atât pe plan naţional cât mai ales pe plan internaţional. Încă de la începutul observaţiilor realizate în această zonă - anul 2002 - am remarcat prezenţa speciei *Plegadis falcinellus* - cu efective destul de importante. De-a lungul anilor, prezenţa în zonă a acestei specii, am observat-o in mod constant în lunile iulie - august, fapt care m-a îndreptăţit să cred că ţigănuşul, *Plegadis falcinellus*, ar putea cuibări in perimetrul zonei umede Cârja – Maţa – Rădeanu, alături de lopătar - *Platalea leucorodia*. In anul 2005, ţigănuşul a fost prezent în aria de studiu încă din luna aprilie, când au fost recenzate 11 exemplare - 24. 04. 2005, la ferma piscicolă Cârja II. De asemenea, pe parcursul lunilor aprilie - mai, am observat în zonă, mod constant, un grup de aproximativ 19 - 20 perechi. În anul 2006 în zona de studiu am găsit 35 de perechi de *Plegadis falcinellus*, cuibărind într-o colonie mixtă, alături de alte specii de ciconiiforme.

Cuvinte cheie: Plegadis falcinellus, specie clocitoare, bazinul Prutului.

Introduction

The Prut River forms the natural border between Romania and Moldavian Republic, respectively Ukraine and represents a natural oasis for the recorded 230 bird species present in its diverse ecosystems.

The studied area, Cârja – Maţa – Rădeanu ponds, situated in the inferior basin of the Prut River, it was created not only for reducing the risk of flooding but also for fisheries. It has a total area of 1750 hectares, of which 200 are occupied by dams and canals. Areas' vegetation and habitats are varied enough: ponds without too much

vegetation, with wide aquatic surfaces, ponds covered by cat tail and reed in proportion of 60 - 70%, some just rounded by this type of vegetation, for protection. Other ponds have bigger or smaller area of compact reeds in its middle part. Along the ponds there are feeders, some bounded by willows. In other areas, there are dense vegetation assemblages formed by willows, white poplar and reeds. Some parts, taking the shape of open meadows are used for animal grazing and other territories, as the Prut bank are bordered by poplars. The appearance of these ponds had modified the aspect of this river basin, giving shape the fauna and the flora of this area not only quantitative but also qualitative. The presence of aquatic surfaces had drawn the presence of an adequate avifauna, which has found here proper breeding conditions. Many of these species are considered avifauna rarities, being protected not only national but also international.

The climate has a pronounced continental character, with characteristic water meadows and flat lands climate nuances. The presence of glossy ibis in the Prut basin it was also signalled in the year 2001 in wetland Larga Jijia by Carmen Gache, during June – July months, with a reduced number of birds (4 – 5 specimens). As well, in the same area, we have also observed a single adult specimen of *Plegadis falcinellus* in the year 2004, on 28th of May. Because of the small number of recorded specimens and also due the impossibility to make high detailed observations in this area, we cannot be surely affirmed the presence of *Plegadis falcinellus* as breeding species in the wetland Larga Jijia.

Since the beginning of the observations made in the Cârja – Mața – Rădeanu ponds area (2002) we remarked the presence of *Plegadis falcinellus* species – with an important number of specimens, 112 glossy ibises on the 3rd of July 2002.

Materials and Methods

The avifaunistic observations had started in the spring of the year 2002 and they are still continuing. We used the directly observation through binoculars (7x15x25 or 12x50) and telescope (40x60). We visited the breeding colonies from Cârja – Mața – Rădeanu ponds, in order to observe the birds' behaviour and take measures of nests and eggs. We used a video camera (DCR TRV 265, digital zoom 900x, optic zoom 20x) in order to recorder different aspects of spoonbill's biology, ecology and ethology.

Results and Discussion

Along the years, the presence of this species in the area, we have observed it constantly in July – August months, fact which made me believe that the glossy ibis - *Plegadis falcinellus* might breed in the perimeter of wetland Cârja – Mața – Rădeanu, among spoonbill - *Platalea leucorodia*.

In 2005, we have observed the presence of glossy ibis in the studied area since April (24.04.2005 – 11 specimens, fishery Cârja II). As well, along the months April – May, we have constantly observed a group of approximately 38 – 40 specimens (19 – 20 pairs), flying upper and returning into a big clump of compact reed, from the surface of one pond from this fishery. Also, in this area we have observed another two species with a number of pairs between 20 and 25 (*Egretta garzetta* and *Nycticorax nycticorax*). Certainly, there was a mixed colony, but we didn't succeed in entering for taking measures of nests and eggs due the deep water and extremely dense reed. On the 25th of June 2005, we have observed a group of 28 glossy ibis while feeding on the ponds of fishery Mața – Rădeanu. In this group, 17 birds were juveniles (fact that confirmed the assumption that the glossy ibis was breeding in the area).

On the 13th of May 2006, on the fishery Mața – Rădeanu perimeter, we found a mixed colony, formed by species of Ardeidae and Threskiornithidae families (*Egretta garzetta, Egretta alba, Ardeola ralloides, Ardea cinerea, Ardea purpurea, Nycticorax*

nycticorax, Plegadis falcinellus and *Platalea leucorodia*). The colony is placed in reeds, in the middle part of one pond. We could record a number of approximately 35 pairs of *Plegadis falcinellus*, having nests and clutch in different stages of construction and incubation. Some nests were in the beginning phase of installing, while others had clutch completed or in process of completion. Besides, we found fresh eggs on 9th of June 2006.

Regarding the breeding species from Romania, the big majority are concentrated especially in the Danube Delta. In order to analyse the breeding ciconiiforms' effectives in the area, we used, for comparison, the data for the whole territory of Romania and Europe. The Glossy Ibis - *Plegadis falcinellus* occupies, as number of breeding specimens, the forth place in Romania among the ciconiiforms breeding species; in the studied area, it is on the fifth place. But in Europe, as breeding specimens, it is present with the smallest number of species among the ciconiiforms (Tab. 1).

Table 1. The comparative presentation of the breeding pairs' number, for the studied species, in Europe, Romania and the study zone.

Species	No. of breeding pairs in Europe	No. of breeding pairs in Romania	No. of breeding pairs in study zone
Botaurus stellaris	54000	500 – 1000	5
Ixobrychus minutus	120000	10000 – 20000	20
Egretta garzetta	94000	2500 – 3000	40
Egretta alba	24000	300 – 400	24
Ardeola ralloides	27000	3000 – 4000	25
Ardea cinerea	210000	2000 – 3000	100
Ardea purpurea	42000	800 – 1200	22
Nycticorax nycticorax	87000	5000 – 7000	50
Plegadis falcinellus	22000	2500 – 3000	35
Platalea leucorodia	8900	500 – 600	90

The Glossy Ibis - *Plegadis falcinellus L.* is a species with Mediterranean origins and arrives in our country in the first or the second decade of April (according as temperatures' values). After the pairs' forming, the both partners begin to install the nest from reed, vegetal carry-overs or branches, according as it's emplacement (in reed or trees). The nest is, usually, masked with green reed leaves. They breed in mixed colonies, associating with species like – *Ardea cinerea*, *Nycticorax nycticorax*, *Egretta garzetta*, *Ardeola ralloides.* The measured nests had enclosed in follower parameters (Tab. 2):

Table 2. The *Plegadis falcinellus* nests's dimensions recorded in Cârja – Mața – Rădeanu ponds.

Parameters (nest) – personal data	Minimum dimension (cm.)	Maximum dimension (cm.)
External diameter (big)	40	55
Internal diameter (small)	15	19
Depth	4	7
Height	18	24

As emplacement in the interior of colony, the nests of *Plegadis falcinellus* are situated at the colony's periphery, alongside the ones from *Platalea leucorodia* species. Towards the colony's interior, there are, especially, Ardea *cinerea* and *Egretta garzetta* species. As well, as vertical disposal, the Glossy Ibis' nests are situated, usually, at water level, rarely, suspended, case in which the distance (height) is very little. Therefore, they have a very large aperture to the water. This thing might be due the fact that they are arriving in our country later than the other species and, so, are finding the breeding places already occupied (the colony's nucleus is already formed) or, maybe, due their preference for water. There might be another explanation for this, which refers to chicks' protection. The *Plegadis falcinellus*' chicks have the bill oblate dorsum-ventral and rounded at tip (as

well as the *Platalea leucorodia*' chicks). As a consequence, if the parents aren't around, the chicks can defend themselves only by running or by staying still. The chicks of the other ciconiiforms have the bill's tip arrow-headed and hard, presenting, also, a high aggressively behaviour. As well, from a tender age, they have the capacity to make difference between their relatives and other species' chicks, having an aggressive behaviour with them if there is the case. By other hand, in the case of an aerial attack, the nests situated at a highly level, on reed, are very visible and sensitive to the predators' actions (by *Circus aeruginosus, Pica pica, Corvus corone cornix*).

After the nests' construction's ending, it begins the clutch's deposition. The period of clutch's deposition vary from April till June. Other references give like period, the end of April, first decade of May (Ciochia, 1992); the middle of May, the end of May (Mândru, 1970), the beginning of May till June (Radu, 1984), (Tălpeanu, 1969). After the colony's visiting, we have found fresh clutch of *Plegadis falcinellus* on the 9th of June 2006.

The clutch is formed of 3 – 4 eggs, rarely 5 or 6, laying on consecutive days. It's dimensions are 52.5 x 36.9 mm (Collins Field Guide, 1998), 53 x 37 mm, 38 g (Tălpeanu, 1969), 53.8 x 36.5 mm and 37.61 g (Mândru, 1970). The eggs have elliptical to sub-elliptical shape. After carrying out the measurements of the clutch researched by us, we found the following dimensions (table 3):

Table 3. The eggs dimensions of the *Plegadis falcinellus* species, recorded in the Cârja – Mața – Rădeanu ponds' area.

Parameters (eggs) – personal data	Minimum dimension (mm.)	Maximum dimension (mm.)
Length	50.5	54.5
Thickness	34	37.5

The eggs' background colour is deep uniform blue, darker than the ones of other species of herons. The eggs' shell is smooth with very slight gloss (Ciochia, 1992) or not glossy (Radu, 1984), rarely, with white calcareous inlays (Mândru, 1970).

The incubation endures 21 days; it begins after the laying of the last egg and is assured by both sexes. Some authors mention that breeding is assured mainly by the female (Ciochia, 1992), (Radu, 1984), (Collins Field Guide, 1998).

The chicks are fed by the both parents for 48 – 50 days. In the first 5 days of the chicks' lives, one of the two adults is present with them whole the time (Collins Field Guide, 1998). During 14 days, the chicks are fed in the nest. After this period, its can come out from the nest, staying near it, but returning to it in order to be fed. Step by step, growing up, the chicks don't return to the nest anymore, the parents feeding them where they are, till they start to fly, after 6 weeks.

The feeding, is made, usually, in large groups, mixed when it is the case (adults and juveniles, when these ones start to fly) and, rarely, in small groups, pairs or solitaire. Often, the birds use for feeding the same known places, where know that will find plenty of food. That's why, if there's not a good knowledge about their breeding and feeding places, their discreet presence might be "invisible". The food is formed of aquatic insects, slugs, newts, little fish, but they especially prefer leaches. They consume also vegetarian food, but in small quantities (Radu, 1984).

Conclusions

In the year 2006, on the Mața – Rădeanu fishery, it was installed a mixed ciconiiforms colony formed by species from Ardeidae's and Threskiornithidae's families (*Egretta garzetta, Egretta alba, Ardeola ralloides, Ardea cinerea, Ardea purpurea, Nycticorax nycticorax, Plegadis falcinellus* and *Platalea leucorodia*).

During the 2006' summer, in Mața – Rădeanu fishery area, there have been breeding 35 pairs of *Plegadis falcinellus.*

For the nest's building, the Glossy Ibis prefers the zones with plenty of reed and with water aperture. After nest's construction's ending, it begins the clutch's laying. The period clutch's laying varies, from April till the first third of June.

Cârja – Mața – Rădeanu ponds represent the only place from the Prut River basin in which *Plegadis falcinellus* species breeds certainly.

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