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New nesting site for Dalmatian Pelican (*Pelecanus crispus*) in a polyspecific colony of aquatic birds on Taşaul Lake (Romania)

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Abstract: In the Natura 2000 site, ROSPA 0060 Taşaul - Corbu Lakes, the nesting of Dalmatian Pelican (*Pelecanus crispus* Bruch 1832) have been confirmed in 2016. The presence of the species in the breeding season was regularly recorded in this location since 2008. The novelty is that it is the first proved nesting of the species in Romania, except the Danube Delta Biosphere Reserve perimeter, in the last 100 years. The colony is located on the La Ostrov island on Taşaul Lake (Constanţa county). The island hosts a polyspecific colony of aquatic birds, 5 species being recorded during our investigations. In the first phase several counts have been performed from the lake shore using adequate optical equipment and on 24th of June 2016 a direct count on the island have been done. The colony comprises 3 orders *Pelecaniformes*, *Ciconiiformes* and *Charadriiformes*: Dalmatian Pelican (*Pelecanus crispus*) - 12 pairs, 800-900 pairs of Great Cormorant (*Phalacrocorax carbo*), 100-200 pairs of Little Egret (*Egretta garzetta*), 30-50 pairs of Night Heron (*Nycticorax nycticorax*) and about 1,000 pairs of Caspian Gull (*Larus cachinnans*).

Monitoring of the colony should continue in the following years. Access to the island should be allowed only outside the breeding season of the Dalmatian Pelicans. The colony should be treated as a core area in Natura 2000 site.

Keywords: Dalmatian Pelican, colony, Natura 2000, aquatic birds, Taşaul Lake, SPA, , Danube Delta Biosphere Reserve, population, pairs

INTRODUCTION

The Dalmatian Pelican (*Pelecanus crispus* Bruch 1832) is the aquatic bird with the largest size from Romania which nestles in a small number of colonies mono- and polyspecific within the Danube Delta Biosphere Reserve. In Romania are estimated 240-330 nesting pairs of Dalmatian Pelican (****, 2015) and in 2016, 290 pairs in 4 colonies were estimated within the Danube Delta Biosphere Reserve (Marinov et al., 2016). Taşaul and Corbu Lakes were declared SPA site (ROSPA0060 Taşaul-Corbu Lakes) in 2007 by a government decision (****, 2007) subsequently updated in 2011 (****, 2011). Lakes were declared a Natura 2000 site mainly by the crucial role in feeding and resting of aquatic birds (including several endangered species) during the passage. There are few bibliographic resources regarding the bird population on Taşaul Lake, mainly estimations of synchronous type from the winter waterbird censuses in the publications of the Romanian Ornithological Society from the 90s. Among the published material in which are specified data during the nesting, we mention the Important Bird Areas in Romania (Papp & Fântână – editors, 2008).

MATERIALS AND METHODS

Counts have been performed several times during 2016 breeding season from the lake shore using adequate optical equipment: Swarovski Spotting Scope ATS 80-30x telescope, Zeiss 10x40, Swarovski 10x50 and Nikon 10x40 binoculars. Photos have been taken by Nikon Coolpix P100 Photo camera.

Distance, vegetation and the island's conformation limited the count and evaluation possibilities by the lakeshore. To evaluate the breeding site, investigation of the island has been considered as necessary only after Dalmatian Pelican has finished nesting, in order to reduce the disturbance especially for this endangered species (Catsadorakis et al., 2016; ****, 2016). In late June nesting was already in the final stage for the most part of species, for some of them even completed - Caspian Gull and Dalmatian Pelican. In order to access and perform direct counts on the island, the Natura 2000 site ROSPA0060 Taşaul - Corbu Lakes custodian and the manager of the company that licensed the fishing activity on the lake have been informed and consulted.

On 24th of June 2016 a direct count on the island have been done. To access the island a canoe was used. One visit to the island has been performed by a team of two researchers. The number of nests, adults and juveniles (fledged and unfledged) from the island and around it have been counted.

RESULTS AND DISCUSSIONS

The importance of the island La Ostrov from ROSPA0060 site Taşaul - Corbu Lakes (**Fig. 1**) as a breeding site for aquatic birds is known for at least 10 years. The presence of the Dalmatian Pelican on this island (including the breeding season) was regularly recorded in this location since 2008 but clear evidence of nesting wasn't provided until recently.

Ornithological investigations performed in 2016 by our team shows that the size and the specific composition indicate a regional and national significant colony comparable to some of the colonies from Danube Delta and Razim - Sinoie Lagoon Complex (Platteeuw et al., 2002, 2004, 2006). The island hosts a polyspecific colony of aquatic birds, 5 species being recorded during our investigations.

There is information that the Great Cormorant (*Phalacrocorax carbo*) is nesting on this island for at least 10 years. Through the telescope could be observed the colonial behavior of several species of aquatic birds such as the Dalmatian Pelican (*Pelecanus crispus*), Great Cormorant (*Phalacrocorax carbo*) and Caspian Gull (*Larus cachinnas*), but it is not possible to count the pairs because of the distance, vegetation and exposition.

On the island we have identified 12 nesting structures of Dalmatian Pelican (*Pelecanus crispus*) (**Fig. 2**) that corresponds with our onshore adults counting. On the lake in the immediate vicinity of the island 24 juveniles have been counted. Some of the juveniles were not yet able to fly (**Fig. 3**). The nesting population of Dalmatian Pelican from Taşaul represents 4.2% of total breeding population estimated in Romania (****, 2015). This colony is the only one in Romania outside the Danube Delta Biosphere Reserve perimeter where the Dalmatian Pelicans are currently nesting. The last nesting of the species outside the Danube Delta Biosphere Reserve was recorded for more than 100 years ago (Cătuneanu, 1958). Furthermore this is the first record ever of nesting along the Romanian coastal zone south of the Razim - Sinoie Lagoon Complex. Unpublished data reveal that nesting of Dalmatian Pelican was considered since 2013 when at least four unfledged juveniles were observed on the island (Sebastian Bugariu, *in letter*). The Dalmatian Pelican status in 2016 shows that 290 pairs have been nested in the Danube Delta Biosphere Reserve (in 4 colonies - Marinov et al., 2016) and 12 pairs on Taşaul Lake, sums up the total breeding population to 302 pairs in Romania. Considering the significant mortality caused by the avian flu virus in the previous year (at least 118 adult Dalmatian Pelicans were found dead (Kiss et al., 2016) the discovery of a new breeding colony gives new hope for long-term conservation of this species.

Little Egret (*Egretta garzetta*) is one of the species whose nesting has been documented on La Ostrov island from Taşaul Lake. We estimate the breeding population on the island to 100-120 pairs, most of them with almost fledged juveniles, some others with eggs, both situations recorded as nesting on grassy ground - **Fig. 4** - and in reed. This represents 1.83% of total breeding population estimated in Romania (****, 2015). We estimate to 30-50 pairs the nesting population of Night Heron (*Nycticorax nycticorax*) on the island. This represents 0.66% of total breeding population estimated in Romania (****, 2015). Investigations on the island revealed a distinct situation regarding the nesting preferences of the Night Heron compared to DDBR. On this island the Night Herons were nesting on the ground surrounded by tall

vegetation (**Fig. 5**), this type of nesting was not recorded yet in Danube Delta (but registered at the species range level (Del Hoyo et al., 1992).

Great Cormorant (*Phalacrocorax carbo*) nesting population on the island has been estimated at 800-900 pairs (5.3% of the national breeding population). They were present in various stages of development, from eggs (**Fig. 6**) to fledged juveniles. The Great Cormorant were nesting both on the ground (**Fig. 6**) and in the elm trees from the island (**Fig. 7**). This year, the Caspian Gull (*Larus cachinnas*) was nesting in large number - considering the number of abandoned nests and adult birds flying around island, more than 1,000 pairs (one third of the entire breeding population estimated for Romania), at the time of the counting we found only approx. 200 unfledged juveniles.

Taking into account the living condition from the Danube Delta Biosphere Reserve we appreciated (personal field observations; Platteeuw et al., 2004) the feeding midrange during the nesting period at Dalmatian Pelican and Caspian Gull to aprox. 40 kilometers in range, at Great Cormorant - 30 km and for Little Egret and Night Heron - 20 km. Thus, taking into consideration the feeding midrange, respectively the vicinity of this colony with Danube Delta Biosphere Reserve, the monitoring and the estimation of nesting colonial species' effectives in a regional context is required.

Currently, in the Standard Data Form of Natura 2000 site ROSPA0060 Taşaul - Corbu Lakes, only the Caspian Gull is included with nesting effectives (60 pairs plus 1,200 individuals to passage, respectively wintering) (****, Baza de date *online* Natura 2000). The other four species are presented only as non-breeding, 60-70 individuals of Dalmatian Pelican, Little Egret, Night Heron and 300 individuals of Great Cormorant in passage; 8-20 individuals of Dalmatian Pelican and 100 individuals of Great Cormorant as wintering (****, Baza de date *online* Natura 2000).

Monitoring of the colony is needed in the next years to be able to state if the species are regularly nesting on the island and the multiannual numerical range. Following this procedure the Standard Data Form of ROSPA0060 Taşaul - Corbu Lakes may be updated in the next period 2020 - 2021. This is particularly important in order to take the necessary conservation measures.



Figure 1 General view of La Ostrov Island – Taşaul Lake (the emplacement of a polyspecific aquatic birds colony) – 24th of June 2016



Figure 2 Nests' structures of Dalmatian Pelican (*Pelecanus crispus*)
- La Ostrov Island on Taşaul Lake– 24th of June 2016



Figure 3 Dalmatian Pelican (*Pelecanus crispus*) juveniles which is not
flying – to the left – Taşaul Lake– 24th of June 2016



Figure 4 Little Egret (*Egretta garzetta*) juvenile which is not flying –
La Ostrov Island on Taşaul Lake– 24th of June 2016



Figure 5 Night Heron (*Nycticorax nycticorax*) juveniles – nest on ground –
La Ostrov Island on Taşaul Lake– 24th of June 2016



Figure 6 Great Cormorant (*Phalacrocorax carbo*) juvenile and eggs– nest on ground
– La Ostrov Island on Taşaul Lake– 24th of June 2016



Figure 7 Great Cormorant (*Phalacrocorax carbo*) juveniles– nest in tree
– La Ostrov Island on Taşaul Lake– 24th of June 2016

CONCLUSIONS

Natura 2000 site, ROSPA 0060 Taşaul - Corbu Lakes, hosts a polyspecific colony of aquatic birds, 5 species being recorded during our investigations in 2016. The colony is located on the La Ostrov island on Taşaul Lake (Constanța county).

Ornithological investigations performed in 2016 by our team shows that the size and the specific composition indicate a regional and national significant colony comparable to some of the colonies from Danube Delta and Razim - Sinoie Lagoon Complex.

The Dalmatian Pelican (*Pelecanus crispus*) nesting population on Taşaul Lake in 2016 has been represented by 12 pairs that successfully produced 24 juveniles. The nesting population of Dalmatian Pelican from Taşaul represents 4.2% of total breeding population estimated in Romania

This is the only Dalmatian Pelican colony in Romania outside the Danube Delta Biosphere Reserve perimeter. The last nesting recorded for this species outside the Danube Delta Biosphere Reserve perimeter was more than 100 years ago. Furthermore this is the first record ever of nesting along the Romanian coastal zone south of the Razim - Sinoie Lagoon Complex.

The colony comprises 3 orders *Pelecaniformes*, *Ciconiiformes* and *Charadriiformes*: Dalmatian Pelican (*Pelecanus crispus*) - 12 pairs, 800-900 pairs of Great Cormorant (*Phalacrocorax carbo*), 100-200 pairs of Little Egret (*Egretta garzetta*), 30-50 pairs of Night Heron (*Nycticorax nycticorax*) and about 1,000 pairs of Caspian Gull (*Larus cachinnans*).

Investigations on the island revealed a distinct situation regarding the nesting preferences of the Night Heron compared to DDBR. The Night Herons were nesting on the ground surrounded by tall vegetation, this type of nesting was not recorded yet in DDBR but registered at the species range level.

In order to take the necessary conservation measures the monitoring of the colony is needed in the next years to be able to state the regularity of nesting on the island and the multiannual numerical range. Following this procedure the Standard Data Form of ROSPA0060 Taşaul - Corbu Lakes may be updated in the next period 2020- 2021.

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