

Great Cormorant (*Phalacrocorax carbo*) population status in Bosnia and Herzegovina – report for the period 2005 - 2011

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The Great Cormorant *Phalacrocorax carbo* in Bosnia and Herzegovina in the last 50 years had different status. The first confirmed nesting cases were recorded in the 1970s (Obratil, 1978, 1984) but due to anthropogenic impacts these nesting sites disappeared quickly. Conversely, during this period the species was recorded regularly wintering in Bosnia and Herzegovina, but unfortunately quantitative data are scarce. Since 2005 surveys have also been completed during regular ornithological research undertaken by the members of the Ornithological Society “Naše ptice” (“Our birds”). In this paper data are presented collected in the period 2005 – 2011.

Methodology

The paper incorporates all data collected in the period 2005 – 2011 during the authors’ research and also data acquired from the members of the “Birdwatchers’ network in Bosnia and Herzegovina”. Part of the data relates to previously published reports from the International Waterbird Census (IWC) in Bosnia and Herzegovina (Dervović, 2005, 2006, 2007; Kotrošan & Dervović, 2010).

Results

Nesting

After nesting colonies on Hutovo blato and Bardača disappeared at the end of the 20th century there were no data about the nesting of this species in Bosnia and Herzegovina for a long time. Obratil and Matvejev (1989) indicated this species to be nationally extinct as a nesting species (Ex).

In the Hutovo blato area in 2008 nesting by five breeding pairs was recorded (pers. comm. Borut Stumberger). After 2008 the birds were scared off by motor boats and the nesting was no longer recorded. In 2011, the largest Great Cormorant colony is on the Lake Modrac in the area of Prokosovići (N 44°30'30.63", E 18°30'29.53"). Great Cormorants were found breeding together with Grey Herons (*Ardea cinerea*) in 2010. The first estimate of the size of the colony in 2010 was 80 breeding pairs (Kotrošan *et al.*, 2011). In 2011, 108 Great Cormorant and 88 Grey heron nests were counted. The latest case of nesting of the Great Cormorant in Bosnia and Herzegovina was recorded in Livanjsko polje in 2010 (pers. comm. Mato Gotovac). In 2011, the nesting of four breeding pairs was confirmed (Fig. 1).

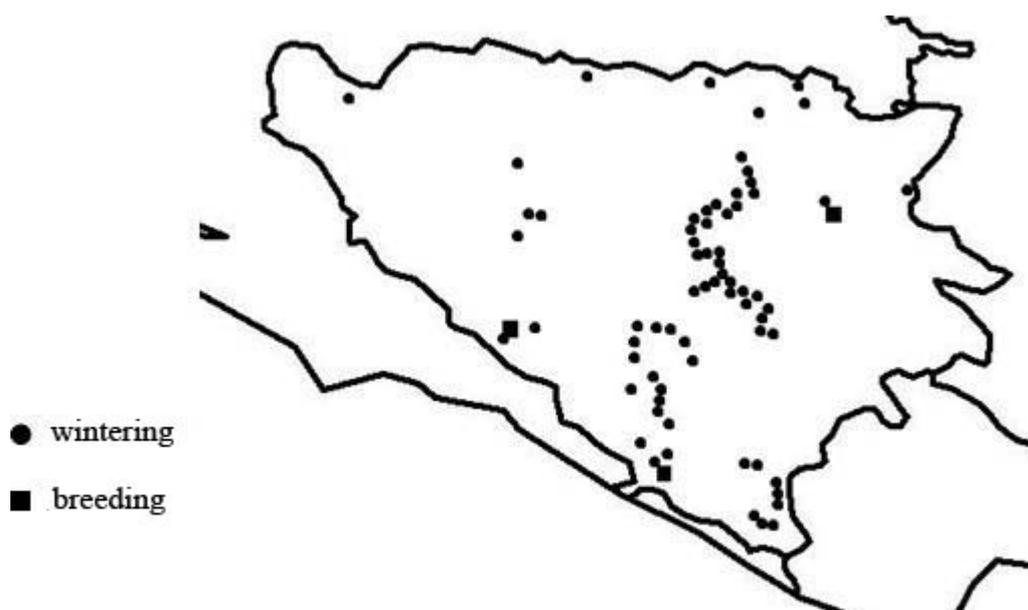


Figure 1. Geographical distribution of the recorded breeding and wintering sites of the Great Cormorant in Bosnia and Herzegovina (period 2005-2011).

Wintering

Wintering of Great Cormorants in Bosnia and Herzegovina was monitored during the annual International Waterbird Census (IWC). Taking into consideration a series of logistical constraints, the annual completion of the IWC varied in effort and quality from year to year. This resulted in incomplete coverage in different years, so the data presented in the Table 1 are intended to be taken as indicative only. Overall, there was a noticeable increase in the number of individual Great Cormorants observed during the winter. Consistently across all counts, the largest number of birds was observed wintering along the Bosna River, e.g. 2,317 in 2011 (see Fig. 1). River Neretva is also important for the species in winter. A considerable number of Great Cormorants winters on reservoirs. The areas where breeding colonies exist, like Modrac Lake and Livanjsko polje, receive a large number of birds in winter too. Important wintering areas are furthermore Buško Lake, Bardača with Sava River and Svitavsko Lake (Mikuska 2005, Stumberger & Sackl 2008/2009, Stumberger *et al.* 2008/2009).

Table 1. Count results for Great Cormorant in Bosnia and Herzegovina (IWC, January 2005-2011).

Year	Number of counted birds	Counting sites
2005	185	Bosna River from Semizovac to TE Kakanj, Fojnica River from Kiseljak to the mouth to the Bosna River
2006	616	Bosna River (from the spring to Zenica), River Miljacka, Željeznica, Fojnica, Vrbas (Banja Luka), Drina (Zvornik)
2007	1,043	Bosna River (from Reljevo to Doboj), River Fojnica, Lašva (from Vitez to the mouth), River Željeznica (Ilidža), River Neretva (from Konjic to Čapljina), River Drežanka (from Drežnica to the mouth), Svitava Lake, Plivsko Lake
2008	790	Bosna River (from Butila to Doboj), Sava River (Bosanski Brod, Šamac), Plivsko Lake, Neretva River (Čelebići, Ostrožac, Grabovica), Hutovo blato (Svitava), Buna River (hotel Ada), Bilečko Lake, Trebinjsko Lake
2009	2,206	Bosna River (including Željeznica river, from Sarajevo to Šamac), Fojnica River (Podtušnjići, Lopata, Visoko), Neretva River (Čelebići, Ostrožac, mouth of Buna River), Hutovo blato (Deransko and Svitavsko Lake), Trebinjsko and Bilečko and Buško Lake
2010	2,707	Hutovo blato (Svitava and Deransko Lake), Trebišnjica River, Bilečko Lake, Neretva river (from Orahovica to Počitelj), Una River (Otoka), Bosna River (from Vogošća to Doboja), Fojnica River (Tušnjići, Luka), Buško blato
2011	3,030	Mostarsko blato, Hutovo blato (Svitava, Deransko lake), Neretva River (from Konjic to Ortiješ), Buško Lake, Bosna River (including Miljacka River, to Modriča), Sava River (Šamac), Velika Tišina, Bardača, Modrac Lake, Pliva River and Plivsko Lake, Buna River, Fojnica River (from Visoko to Kiseljak)

Illegal killing of Great Cormorants

In Bosnia and Herzegovina, the Great Cormorant is protected from shooting by entity hunting laws adopted in the period 2002-2009 (hunting law [4/06, 04/02, 118/08, 60/09] of Federation of Bosnia and Herzegovina, articles 15, 16 and hunting law of

Republic of Srpska, articles 11, 12.). The species is permanently banned from hunting (Federal Ministry of Agriculture, Water management and Forestry: 2006, Ministry of Agriculture, Water management and Forestry: 2002, 2008, 2009). Legal protection of the species excludes deliberate killing, disturbance and habitat destruction. However, due to engrained attitudes that Great Cormorants are a threat to fish they are killed indiscriminately, primarily by fishermen and hunters across the entire territory of Bosnia and Herzegovina, but especially in fish pond areas. Great Cormorants are also killed on other water bodies, in unprotected areas and even witnessed being shot in special natural reserves. Great Cormorants are killed on the feeding sites, ambushed on resting sites, shot in flight and from motor vehicles or boats. In some extreme cases dead birds were found hanging on trees and birds were witnessed or we even witnessed killing by poachers in protected areas (pictures 1-4).



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Pictures 1-4: Examples of Great Cormorant killing in Bosnia and Herzegovina.

1. Modriča 10. 01. 2011. (Photo: Jovica Sjeničić); 2. Šipovo – Pliva River 26. 12. 2008. (Photo: Goran Topić); 3. Ornithological reserve “Hutovo blato” 29. 01. 2011. (Photo: Ena Šimić) and 4. Visoko 21. 01. 2011. (Photo: Ilhan Dervović)

Discussion and conclusions

Based on the data collected in the period 2005 – 2011 it is evident that despite considerable negative pressures, the population of the Great Cormorant in Bosnia and Herzegovina is increasing in terms of both the breeding and wintering populations. It is interesting that the breeding population still did recolonise the historic nesting sites of Bardača and Hutovo blato even when conditions appear to have improved. Instead the birds colonised previously unknown nesting sites (Livanjsko Polje and Lake

Modrac). In contrast with the European population the Bosnian-Herzegovinian population is very small; therefore it is important nationally to protect the handful of nesting sites. Conversely, the wintering population is growing annually probably as a consequence of the artificially dense fish populations found in the rivers and fish ponds that form the major concentration of the species during winter.

The main reason for killing Great Cormorants is that they are perceived to be the primary perpetrator of damage on fish found in fishponds. Fishpond owners and fishermen illegally kill Great Cormorants using predation as the excuse, and despite the fact that the Great Cormorant is protected by hunting laws these laws are not respected or enforced.

The only organisation that is trying to reduce these illegal activities is the Ornithological Society "Naše ptice" ("Our Birds"). Reports have been sent to all relevant ministries giving evidence of all recorded illegal activities, and these are also published on the "Our Birds" web page, but to date, unfortunately there have not yet been any formal reactions to apprehend offenders. To protect the Great Cormorant effectively in Bosnia and Herzegovina and prevent its extinction as a national breeding species, it will be essential in future to educate hunters, fishermen and local environment enforcement agencies across all the territory of the country.

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