

THE WINTERING POPULATION OF HEN HARRIER *Circus cyaneus* IN GLAMOČKO, DUVANJSKO AND KUPREŠKO POLJE (BOSNIA-HERZEGOVINA)

Ena Šimić-Hatibović

Ornithological Society „Our Birds“, Semira Frašte 6, BA - 71000 Sarajevo, Bosnia and Herzegovina; E-mail: ena_simic@yahoo.co.uk

Summary

The karst poljes of Bosnia constitute hotspots of biodiversity. But the karst wetland habitats of Bosnia and Herzegovina are under threat. Except the largest, i. e. Livanjsko polje, all karst poljes are unprotected. Livanjsko polje has been recognized as a Ramsar site and since 2011 it is designated as an Important Bird Area (IBA). In 2013 it was ranked as a medium threatened IBA site by BirdLife International (2013).

Because habitat types and land use practices are similar to that in Livanjsko polje, Duvanjsko, Glamočko and Kupreško polje may, in the same way, harbor a high biodiversity. In particular, the bird fauna appears to be as rich and diverse as in Livanjsko polje. So far the avifauna of the karst poljes was never systematically investigated and no historic data are available for comparison with recent, systematically collected data.

The presence and population numbers of Hen Harriers *Circus cyaneus* were investigated across a one year period, between May 2011 and June 2012. Because all karst poljes in western Bosnia seem to fulfill IBA criteria, the three poljes investigated have the potential for harbouring high biodiversity and need to be protected urgently. The aim of the present study was to make a preliminary assessment of the wintering population of Hen Harrier in three karst poljes - Kupreško, Glamočko and Duvanjsko polje.

The Hen Harrier is an important indicator species of open, extensively used grassland habitats. The species is listed in Annex I of the European Union's Bird Directive. During one year of field research Hen Harriers were studied by using the point count method in all three karst poljes. The species was present in poljes between November and March. During the winter 2011/12, due to heavy snow, field conditions were unusually bad in January and February and some of the constant observation points were not

accessible. In the present paper results of the one year study are presented.

Sažetak

Kraška polja Bosne i Hercegovine predstavljaju žarišta biodiverziteta, ali močvarnim kraškim staništima u Bosni i Hercegovini prijete nestanak. Osim najvećeg, Livanjskog polja, sva ostala kraška polja su nezaštićena. Livanjsko polje je prepoznato kao Ramsarsko područje, i od 2011. godine ima oznaku područja važnog za ptice (Important Bird Area - IBA). U 2013. godini organizacija BirdLife International je rangirala Livanjsko polje kao srednje ugroženo IBA područje. S obzirom na činjenicu da Duvanjsko, Glamočko i Kupreško polje imaju slične tipove staništa i praksu korištenja zemljišta kao i Livanjsko polje, i ova polja bi mogla imati visok stepen biodiverziteta. Konkretnije, ornitofauna ovih polja izgleda isto tako bogata i raznolika kao što je to slučaj u Livanjskom polju. Do sada ornitofauna ovih polja nije sistematično istraživana i ne postoje historijski podaci za upoređivanje sa nedavno prikupljenim sistematskim podacima. Prisustvo i brojnost populacije eje strnjarice *Circus cyaneus* praćeni su tokom jedne godine (maj 2011. – juni 2012.). Sva kraška polja zapadne Bosne okvirno ispunjavaju IBA kriterije, tri navedena polja imaju veliki potencijal za očuvanje biološke raznolikosti i potrebno ih je hitno zaštititi. Cilj ovog rada bio je da se napravi preliminarna procjena zimske populacije eje strnjarice u tri kraška polja: Kupreškom, Glamočkom i Duvanjskom. Eja strnjarica je važna indikatorska vrsta na otvorenim, ekstenzivno korištenim travnatim staništima. Ova vrsta je navedena u Aneksu I Direktive o pticama Evropske Unije. Tokom jedne godine istraživanja, eja strnjarice proučavana su metodom brojanja iz tačke na sva tri kraška polja. Tokom zimskog perioda 2011./2012. zbog velikog snijega uslovi su bili neuobičajeno loši u januaru i februaru, pa neke tačke na

kojima ja vršeno brojanje nisu bile dostupne. U ovom radu prikazani su rezultati jednogodišnjeg istraživanja.

Keywords: Bosnia-Herzegovina, karst poljes, Hen Harrier, *Circus cyaneus*, wintering population, population numbers

Introduction

The karst areas in Bosnia-Herzegovina constitute biodiversity hotspots. Nevertheless, only the largest karst polje, i. e. Livanjsko polje, was recognized as a Ramsar site 2008 (cf. Ramsar Secretariat website) and in 2011 it was designated as an Important Bird Area (IBA). In 2013 it was ranked as a medium threatened Important Bird Area (IBA) by BirdLife International (2013).

Because habitats and land use practices are similar in Bosnian karst poljes, Duvanjsko, Glamočko and Kupreško polje may, in the same way, harbour a high biodiversity. In most poljes, in particular, the bird fauna appears to be as rich and diverse as in Livanjsko polje. So far, the avifauna of the karst poljes of Bosnia was never systematically investigated and no historic data are available for comparison with recent, systematically collected data. Because the three poljes may, like many other, fulfill IBA criteria, a first assessment of the wintering population of Hen Harrier *Circus cyaneus* was launched in 2011.

So far, the avifauna of the karst poljes of Bosnia was never systematically investigated

The aim of this paper is to present a short review of the current knowledge on the distribution and seasonal occurrence of the Hen Harrier in the karst poljes of Bosnia, according to existing literature, and to present first data on the presence and population numbers of the species in western Bosnia. Although, the results of the present study are in some way preliminary, this is the first study of the species and one of the few bird studies for which, so far, quantitative methods were used in Bosnia.

Study area

Between May 2011 and June 2012 the seasonal occurrence, i. e. presence, and numbers of Hen Harrier were investigated in Glamočko, Duvanjsko and Kupreško polje (Fig. 1).

Glamočko polje is a 130 km² large, almost closed karst plain. The maximum length of the karst polje which is elongated in the NW-SE direction, amounts to 45 km. The polje is widest in its central part, i. e. 12 km between Glamoč and Podgreda. While the narrowest section of the area, between Vidimlije and Osoje, measures only 700 m. Duvanjsko polje covers a total area of 121.6 km²; it is situated between 860 and 890 meters a.s.l. The karst polje is surrounded by five mountains: Ljubuša (1797 m) and Vran (1961 m) in the E, Lika (1391 m) to the SE and Tušnica (1700 m) as well as Jelovača (1572 m) in the NW. Like Duvanjsko polje, the 93 km² large Kupreško polje represents a rather large and open karst plain, situated on the east side of Livanjsko and Glamočko polje, and Duvanjsko polje in the N. Like Glamočko polje, the shape of the polje is elongated in the NW-SE direction. The maximal length and width of the polje amount to 24 km and 10 km, respectively (Kanaet 1954).



Fig. 1: Location of the study area; A - Glamočko, B - Duvanjsko, C - Kupreško polje.

Methods

Over the study period the three karst poljes studied were visited during 12 field trips or 33 field days, i. e. one field day per month and polje (see below). All individual birds which could be seen or heard were counted during 10 – 20 minutes long point counts. Ahead of the study all poljes



Glamočko polje



Duvanjsko polje



Kupreško polje

Fig. 2: Location of observation points used for bird counting (point counts), May 2011 – June 2012, in the three study areas

and areas of interest were visited, adequate observation points selected and locations of count points measured with GPS. In all, 60 observation points were selected: 25 in Glamočko, 23 in Duvanjsko and 12 in Kupreško polje (Fig. 2). For bird counts binoculars and a telescope were used.

The winter 2011/12 was extremely harsh with a lot of snow. With snow heights over more than a metre, some observation points were not accessible during February 2012 (FHMZBIH 2012). But, following to the extreme weather conditions and unusually high snow cover which covered all potential hunting surfaces, very few or even no Hen Harriers may have been present during this period. Dates of point counts in Glamočko, Duvanjsko and Kupreško polje, respectively, are given below as:

21st, 22nd and 20th November 2011

26th, 27th and 25th December 2011

25th, 26th, 24th January 2012

08th, 09th and 7th March 2012

Results and discussion

Currently, few and largely scattered data on the migration and wintering of Hen Harriers in Bosnia-Herzegovina exist. Following to Reiser (1939) the species is a regular migrant and winter visitor in Herzegovina, particularly in Hutovo blato. In Bosnia he has seen the species annually in the surroundings of Sarajevo between late October and April. Additionally, Zaplata (1933) spotted the species on two occasions, i. e. on 11 January and 7 February 1891, in Sarajevsko polje. In the second half of the last century Hen Harriers were recorded during autumn migration in Gatačko polje (Obratil 1986), in winter as well as during spring and autumn migration in Hutovo blato (Obratil



Hen Harrier *Circus cyaneus* (Photo: Heinz Kolland)

Tab. 1: Numbers of Hen Harriers *Circus cyaneus* recorded during point counts, November 2011 – March 2012, in three karst poljes in western Bosnia.

Period/karst polje	Glamočko polje	Duvanjsko polje	Kupreško polje	Seasonal movement	
2011	November	3	8	3	autumn migration
	December	1	9	1	wintering
2012	January	4	9	5	wintering
	February	-	-	-	wintering
	March	1	-	2	spring migration

1985), in spring in Gatačko and during autumn migration, only, in Nevesinjsko, Gatačko and Dabarsko polje (Obratli 1984). However, because the species has been recorded in similar habitats in Slovenia during both, migrations and winter periods, in Dravsko polje and at Medvedce reservoir (Bordjan & Božić 2009), and Hen Harriers are present in Serbia in the meadows surrounding Mali pesak (Deliblato sands) between October and April (Vučanović *et al.* 2010), the few sightings, reported for the Bosnian karst poljes, most probably result from low observation effort. The latter is substantiated by observations of Stumberger *et al.* (2010) in Livanjsko polje, who note that “In winter the migrating Montagu’s Harriers are replaced by Hen Harriers from more northern parts of Europe...” and that “Livanjsko polje is the most important wintering site...” in the western Balkans.

Because habitat conditions in other karst poljes are similar... Bosnia-Herzegovina may harbour a significant portion of the European winter population.

During the present study a total of 21 target bird species have been noted. Hen Harriers were seen between November 2011 and March 2012 in all karst poljes investigated. In all, 46 individuals (ind.) were recorded: 9 in Glamočko, 26 in Duvanjsko and 11 ind. in Kupreško polje (see Tab. 1).

Hen Harriers were noted in a total of 24 counts between November – March, i. e. during 7 counts in Glamočko (78%), 11 in Duvanjsko (42%), and 6 point counts in Kupreško polje (55% of all counts). Unfortunately, due to extremely bad weather and the inaccessibility of the poljes, no data for February are available. Although, there was a lot of snow in January in Duvanjsko polje all count points were accessible, however in Glamočko polje we could not reach observations points no. 2 - 14, and in Kupreško polje no. 7 - 12. Presumably, the birds which were present in January, stayed during February or have left the study area and went further to the south.

The present study indicates that Hen Harriers, most probably, are regular winter visitors which were seen in substantial numbers in all karst poljes studied. Because habitat conditions in other karst poljes are similar to those in Livanjsko polje (cf. Stumberger *et al.* 2010) and in the poljes which were investigated for the present study, Bosnia-Herzegovina may harbour a significant portion of the European winter population. But for substantiating this, like for many other species of European and international conservation concern, further surveys and more systematic research will be needed.

References

- BirdLife International:** <http://www.birdlife.org/datazone/sitefactsheet.php?id=29790> (access date: 5 September 2013).
- Bordjan D., Božić L. (2009):** Waterbirds and raptors occurring in the area of Medvedce reservoir (Dravsko polje, NE Slovenia) during the 2002 - 2008 period. *Acrocephalus* 30 (141-143): 55 - 163.
- Federalni hidrometeorološki zavod BiH (FHMZBIH):** <http://www.fhmzbih.gov.ba/bilten/2012-bilten.pdf> (access date: 5 September 2013).
- Kanaet T. (1954):** Polja zapadne Bosne i Hercegovine. Prilog poznavanju prirodnih osobina i ekonomskog značenja. Zbornik radova III kongresa geografa Jugoslavije. Narodna štamparija, Sarajevo; pp. 45 - 58.

Obratil S. (1984): Naselje ptica (Aves) u kopnenim biocenozama kraških polja Hercegovine. Glasnik Zemaljskog muzeja Bosne i Hercegovine Sarajevo, Prirodne nauke 23: 147 - 184.

Obratil S. (1985): Ornitofauna Hutova blata do izgradnje akumulacionog jezera phe "Capljina". Glasnik Zemaljskog muzeja Bosne i Hercegovine, Sarajevo Prirodne nauke 24: 175 - 209.

Obratil S. (1986/87): Naselja ptica (Aves) u ekosistemima Gatačkog polja i okoline prije izgradnje termoelektrane Gacko. Glasnik Zemaljskog muzeja Bosne i Hercegovine Sarajevo, Prirodne nauke 25/26: 211 - 237.

Ramsar Secretariat: http://www.ramsar.org/cda/en/ramsar-news-archives-2008-ramsar-bulletin-22665/main/ramsar/1-26-45-85%5E22665_4000_0 (access date: 5 September 2013).

Reiser O. (1939): Materialien zu einer Ornis Balcanica. I. Bosnien und Herzegowina, nebst Teilen von Serbien und Dalmatien. Naturhistorisches Museum, Wien.

Stumberger B., Schneider-Jacoby M., Schwarz U., Sackl P. (2010): Zonation concept for the Livanjsko polje Ramsar site. In: Denac D., Schneider-Jacoby M., Stumberger B. (eds.), Adriatic Flyway - Closing the Gap in Bird Conservation. Euronatur, Radolfzell (Germany); pp. 125 - 134.

Vučanović M., Đorđević I., Stojnić N. (2010): Raptors of Mali Pesak. Ciconia 19: 74 - 88.

Zaplata R. (1933): Ptice Sarajeva i okoline. Glasnik Zemaljskog muzeja u Bosni i Hercegovini Sarajevo 45: 1 - 34.