



ORNITHOLOGICAL INVESTIGATIONS IN CROATIA AND THE IMPORTANCE OF THE ACROCEPHALUS JOURNAL FOR KNOWLEDGE ABOUT THE BIRDS IN CROATIA

Ornitološke raziskave na Hrvaškem in pomen revije *Acrocephalus* za boljše poznavanje ptic Hrvaške

When, a year ago, my colleague Borut Štumberger asked me to become a member of the Editorial Board of the journal *Acrocephalus*, I was delighted. Although certain obligations are involved, it is a great honour for me to cooperate with my colleagues from Slovenia and the bordering countries. After all, my first short notices were published in this very journal more than 20 years ago!

Ornithological investigations in Croatia are slow and carried out without any carefully planned strategy. Thus it may not be surprising that the results of mapping the breeders in Croatia from the 1980s still remain unpublished. Synchronised research over the whole territory of Croatia is lacking, in spite of efforts by the Institute of Ornithology (functioning within the Croatian Academy of Sciences and Arts), the Croatian Natural History Museum and some other museums in Croatia, as well as by the two ornithological societies, the Croatian Ornithological Society and the Croatian Society for Birds and Nature Protection. In general, the areas investigated just by one or two ornithologists are much better researched. Examples are northern Dalmatia (Mauricio Stipčević), Baranja and Kopački rit (Josef Mikuska, Tibor Mikuska), Lake Vrana, North Velebit, Draganići Ponds, Plitvice Lakes (Institute of Ornithology, CASA), Pisarovina Ponds (Krešimir Leskovar), central Dalmatia (Robert Crnković), Hrvatsko Zagorje (Zdravko Dolenc), Kvarner (Goran Sušić), and Istria (Dean Blažina, Robert Stelko). In these regions, some interesting species have been recorded (e.g. Eleonora's Falcon *Falco eleonora* on the island of Pag). Recently, a few papers have been published dealing with certain rare species, groups of species, and protected areas (e.g. STIPČEVIĆ *et al.* 1990, LUKAČ & STIPČEVIĆ 1997, LUKAČ *et al.* 1997, TUTIŠ 1998, STIPČEVIĆ & LUKAČ 2001). The overview of ornithological research carried out in the last 200 years in Croatia (KRALJ 1997) is also very important. The List of Croatian birds was prepared by LUKAČ (1998).

However, we still miss more accurate details about the numbers of individual species, the population dynamics, migration and overwintering of birds in many other parts of Croatia, particularly along the Adriatic coast. To some extent, *Acrocephalus* has filled the gaps in our knowledge of a few rare species, such as Slender-billed Gull *Larus genei* (RUBINIČ *et al.* 2002), rare nesting bird species such as Eleonora's Falcon (PAVLICEV & PROBST 2002A), Chukar *Alectoris chukar* (SMOLE 2002), Roller *Coracias garrulus* (PAVLICEV & PROBST 2002B), common species such as Eurasian Scops Owl *Otus scops* on the Pelješac Peninsula (VREZEC 2001), and expanding Spanish Sparrow *Passer hispaniolensis* in Istria (RUBINIČ 2001).

The great value of such papers is that, besides filling the gaps in our knowledge of poorly known or totally unknown birds of Croatia, they extend our knowledge of a number of bird species in a wider, global sense. Considering

that the Adriatic coast has only been investigated more professionally over two separate periods of time (MAŠTROVIĆ 1942, RUCNER 1998), any new data will be invaluable. For these reasons, *Acrocephalus* is becoming the most popular international ornithological journal for Southeastern Europe and the Eastern Mediterranean. And, due to the high quality and topicality of the published papers (e.g. BOŽIČ 2002, GOVEDIČ *et al.* 2002, NIKOLOV 2002), the journal is attracting the attention of an increasing number of ornithologists outside the Republic of Slovenia.

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WHITE STORK *Ciconia ciconia* SURVEY IN PELAGONIA INDICATES A DECREASE IN ITS BREEDING POPULATION AND COLONY DISINTEGRATION

Popis bele štoklje *Ciconia ciconia* v Pelagoniji kaže na nazadovanje gnezdeče populacije in razpad kolonij

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In May 2002, a survey of the White Stork *Ciconia ciconia* was carried out in Pelagonia in the south of the Republic of Macedonia. In an area covering 1,104 km², 223 breeding pairs (HPa), 7 unoccupied nests (H) and 5 breeding attempts (HB1 or HB2) were established. The largest colony (≥ 5 HPa) numbered 20 pairs. In Pelagonian villages, White Storks breed as follows: 56.1% on buildings, 29.6% on pylons of the overhead transmission lines, 12.1% in trees, and 2.2% on stacks and bales of hay. The ecological density (StDBiol) reached 20.2 pairs/100 km². In comparison to the last survey by JOVETIĆ (1959) in 1958, the 2002 survey shows a 52.4% HPa decrease, and a decrease in the number of colonies from 27 to 15, as well as of colony size from 16.7 to 9.7 pairs per colony. The proportion of colonial breeders in the Pelagonian population has decreased from 92.9% to 65.0%, while the proportion of solitary breeders (1HPa/village) has risen from 2.1% in 1958 to 18.8% in 2002. White Stork colonies have drastically declined from the land claimed areas in southern Pelagonia. In northern and central Pelagonia, where extensive grazing and mowing is still practised, the numbers of breeding pairs (HPa) and colonies were found to be the same in both surveys: the decline in colony size from 14.5 to 9.7 pairs per colony has been compensated by the increased number of solitary breeders. The population decrease and the disintegration of White Stork colonies in Pelagonia indicate a general negative trend in Macedonia. An extensive reconstruction of overhead transmission lines in Pelagonia that is utterly at variance with nature conservation will only hasten the process of colony disintegration and decline of the population.

Key words: colony, colonial breeding, White Stork, *Ciconia ciconia*, survey, population numbers, nest site selection, breeding density, Macedonia

Ključne besede: kolonija, kolonijsko gnezdenje, bela štoklja, *Ciconia ciconia*, popis, populacija, izbira gnezdišča, gnezditvena gostota, Makedonija

1. Introduction

During the last International White Stork Census (IWC) in 1994/95, the species was not surveyed in the Republic of Macedonia (SCHULZ 1999A). The last survey there of the White Stork *Ciconia ciconia* breeding population dates from 1958 (JOVETIĆ 1959). The results of a further survey in the Skopje basin in 1988 has shown a marked decline in the size of the

population since 1958 (MICEVSKI *et al.* 1992). The number of pairs occupying nests (HPa) has decreased by no less than 86.4%. Furthermore, colonies numbering more than 10 pairs have simply disappeared. It is not clear, however, whether this population decrease and colony disintegration has taken place in other parts of Macedonia too. The IWC has shown that population trends in White Stork are positive in many parts of its range for the

first time in several decades, with the exception of the large area of the states in the southern part of the Balkan Peninsula and Turkey (SCHULZ 1999B). The present paper presents the results of the survey of the White Stork's breeding population carried out in Pelagonia in 2002. We compare our results with the 1958 survey, and discuss the types of Stork's nests used in 2002 and the reconstruction of overhead transmission lines, which appears to be in conflict with nature conservation.

2. Study area and methods

Pelagonia is a tectonic depression (41°30' – 40°53' N, 21°15' – 21°37' E) running in a N-S direction, along which flows the Crna reka river, one of the longest Macedonian water courses. The plains of the depression's floor at the average of 600 m a.s.l. cover some 900 km². The Pelagonia Depression is 66 km long and, on average, 16 km wide. It is surrounded by mountains 1400 to 2600 m high. In the south, Pelagonia is virtually open towards Greece and is a rural landscape. Most of its northern and central parts are characterized by large, extensively farmed pastures and grasslands, while its southern part, from the village of Mogila to the Greek border, has been drained and is now covered by monocultures such as maize and tobacco. Forests cover less than 1% of the area. (KOLČAKOVSKI *pers. comm.*, own data)

Between May 10th and 17th 2002, all Pelagonian villages and hamlets were surveyed for White Stork nests. The study area covered 1,104 km². The surface area was obtained from a map on the scale of 1 : 50,000 on the basis of 2 x 2 km squares on the Gauss-Krüger grid. Prilep and Bitola, the two major towns of Pelagonia, were surveyed only along their main roads. We began the survey at dawn and finished at dusk. The survey methods and abbreviations used are those recommended by the International White Stork Census (SCHULZ & THOMSEN 1999). On the basis of the survey date, Storks sitting or standing on nests were considered as pairs occupying a nest (HPa). We also noted any white excrements on the nests' rims, and whether the nests had been repaired or not. Thus we reduced the possibility of visitors (HB1 and HB2) adding to the numbers of pairs that had occupied nests (HPa). Unoccupied nests (H) were noted as well. At the same time we recorded the type of nest site, whether they rested on platforms, whether they were in contact with electric wires or if original wooden pylons had been replaced with concrete posts. For nests on transmission lines we also examined the types of insulators and interviewed some of the locals.

If at least five pairs bred in a village within a distance of less than 200 m (GUZIAK & JAKUBIEC 1999, PETERSON *et al.* 1999), the Storks were arbitrarily considered a colony. Different proportions of Storks nesting colonially in the area during surveys in 1958 and 2002 were tested using the Mann-Whitney U-test. Differences with $p < 0.05$ are considered statistically significant.

3. Results

3.1. Population size, distribution and density

In the towns of Prilep and Bitola, no Storks were recorded. In the 124 Pelagonian villages surveyed, Stork pairs (HPa) occupied nests in 71. A total of 223 pairs (HPa), 7 unoccupied nests (H) and 5 new breeding attempts with up to half-completed nests in most cases (HB1 or HB2), were recorded. In Pelagonia White Storks bred in villages, the only exceptions were two nests on concrete posts outside the villages of Krivogaštani and N. Zmirnevo, and a nest on a dried up tree some 200 metres away from the village of Belo Pole. The distribution of breeding pairs in the study area is presented in Figure 1. The ecological density (StDBiol) in Pelagonia was 20.2 pairs/100 km².

In comparison to our survey in 1958 a total of 493 nests, 468 occupied (HPa) and 25 unoccupied (H), were counted in Pelagonia (JOVETIĆ 1959). Among them were 4 solitary pairs in the montane area around Kruševo, which was not surveyed in 2002. StDBiol was 42.0 pairs/100 km². Compared to the 1958 survey, the 2002 survey indicates a decrease of HPa by 52.4% and a decline in StDBiol by 48.1%.

3.2. Colonies

In 1958, 27 White Stork colonies were recorded in Pelagonia. 21 of these were larger than 10 pairs and contained no less than 85% (398 HPa) of the total breeding population in the area (JOVETIĆ 1960). During the 2002 survey only 6 colonies exceeded 10 pairs, i.e. 36.3% (81 HPa) of the population (Table 1). Thus, since 1958 the proportion of colonial breeders (≥ 5 HPa) has fallen from 92.9% to 65.0%. On the other hand there has been a great increase in the number of solitary breeders (= 1 HPa/village), from 2.1% (10 HPa) in 1958 to no less than 18.8% (42 HPa) in 2002 (Figure 2). White Stork colonies were found primarily in the northern part of Pelagonia. In the central part no colonies were recorded but only isolated pairs. In the southern part of the area two

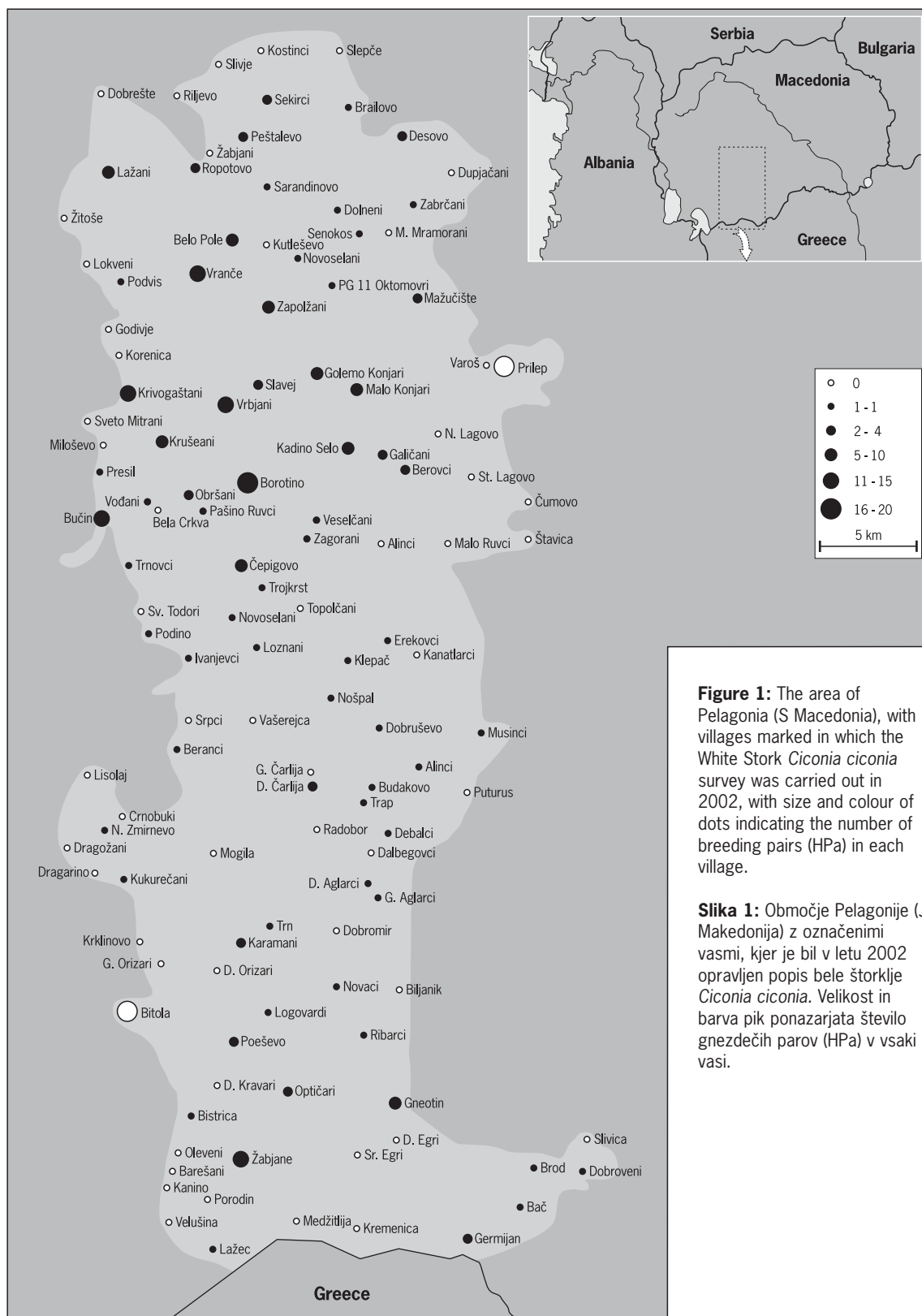


Figure 1: The area of Pelagonia (S Macedonia), with villages marked in which the White Stork *Ciconia ciconia* survey was carried out in 2002, with size and colour of dots indicating the number of breeding pairs (HPa) in each village.

Slika 1: Območje Pelagonije (J Makedonija) z označenimi vasi, kjer je bil v letu 2002 opravljen popis bele štorke *Ciconia ciconia*. Velikost in barva pik ponazarjata število gnezdečih parov (HPa) v vsaki vasi.

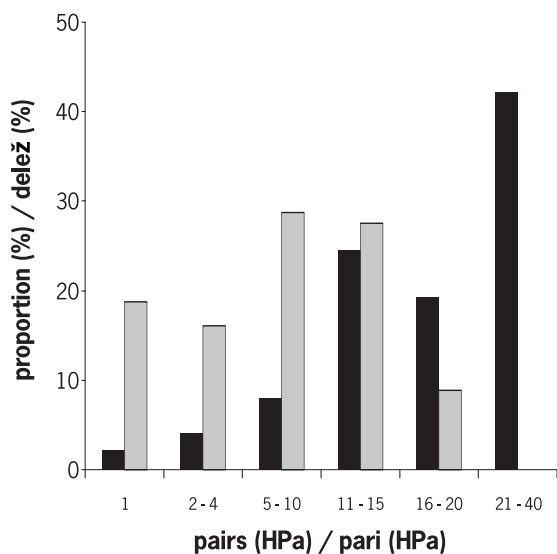


Figure 2: Proportion of colonial and solitary breeders (HPa) in the White Stork *Ciconia ciconia* population in Pelagonia during the surveys carried out in 1958 (black, JOVETIĆ 1959) and 2002 (grey, this work)

Slika 2: Delež kolonijskih in solitarnih gnezdkil (HPa) v populaciji belih štorkelej *Ciconia ciconia* v Pelagoniji med popisoma leta 1958 (črno, JOVETIĆ 1959) in 2002 (sivo, to delo)

colonies were established, while about a half of the villages had no Storks at all (Figure 1). Of the 15 colonies surveyed in Pelagonia, the largest numbered 20 pairs. A comparison between colony sizes observed in 1958 and 2002 shows that the average number of stork pairs per colony in Pelagonia has fallen from 16.7 to 9.7 ($U = 82$, $p < 0.001$, see Table 1), and from 14.5 to 9.7 ($U = 41$, $p < 0.05$) in its northern and central parts.

In the south of Pelagonia, between Mogila and the Greek border, 285 HPa or 61.4% of the population were registered in 1958 (JOVETIĆ 1959). After the first survey this area was drained and, in 2002, only 43

HPa, or 19.3% of the whole Pelagonian breeding population, were recorded here. In 1958 the area contained 14, in 2002 just a single colony of storks exceeding 10 pairs. In contrast, in northern and central parts of Pelagonia, numbers of breeding pairs remained virtually the same in the two surveys – 179 HPa in 1958 and 180 HPa in 2002. The reduction of Stork colony sizes in this area was compensated by a rise in the number of solitary breeders. The number of colonies remained the same in the two surveys (13 in 1958 and 13 in 2002).

3.3. Nest sites

125 (56.1%) pairs were registered on buildings, 66 (29.6%) pairs on pylons, 27 (12.1%) pairs on trees, and 5 (2.2%) pairs of White Storks on stacks and bales of hay (Table 2). Of the 7 unoccupied nests (H), three were built on pylons, two on transformer stations, one on a tree, and one on a stable. Of the 5 breeding attempts with half-completed nests, 4 rested on pylons and one on a chimney. Near the village of Belo Pole and in the village of Gneotin, White Storks bred in mixed colonies with Grey Herons *Ardea cinerea*. White Stork nest sites differed between as well as within colonies. 8 colonies were built on buildings and pylons, 4 on buildings, 4 on pylons and trees, one on buildings and trees, one on pylons, buildings and hay stacks, and one on buildings and hay stacks/bales.

3.4. Overhead lines

Of the 66 pairs of White Storks (HPa) nesting along power lines, 32% bred on concrete pylons. None of the nests built on pylons rested on a platform. All were in contact with electric conductors. In 32% of the villages the wooden pylons had recently (one to two years ago) been replaced by concrete pylons equipped with short upturned insulators. Wooden pylons were actually replaced during our survey, by

Table 1: Statistics of colonies of the White Stork *Ciconia ciconia* in Pelagonia

Tabela 1: Značilnosti kolonij belih štorkelej *Ciconia ciconia* v Pelagoniji

	Survey / Popis 1958	Survey / Popis 2002
no. of colonies / št. kolonij (≥ 5 HPa)	27	15
no. of colonies / št. kolonij (≥ 10 HPa)	21	6
aver. no. of pairs in colony / povpr. št. parov v koloniji	16.7	9.7
max. no. of pairs in colony / največje št. parov v koloniji	39	20

Table 2: Type of White Stork's *Ciconia ciconia* (HPa) nest base in Pelagonia in 2002**Tabela 2:** Tip podlage gnezd bele štokrlje *Ciconia ciconia* (HPa) v Pelagoniji leta 2002

Nests built on / Namestitev gnezd	No. / Število	Proportion / Delež (%)
house-roof / hiša-streha	104	46.6
house-chimney / hiša-dimnik	6	2.7
house-ruin / hiša-razvalina	4	1.8
stable / hlev	2	0.9
belfry-roof / cerkveni zvonik-streha	4	1.8
transf. station-roof / trafo postaja-streha	4	1.8
roofing / ostrešje	1	0.5
buildings / zgradbe	125	56.1
wooden A-pylon / leseni A-drog	41	18.4
wooden I-pylon / leseni I-drog	9	4.0
concrete I-pylon / betonski I-drog	14	6.3
concrete T-pylon / betonski T-drog	2	0.9
pylons / drogovi	66	29.6
trees / drevesa	27	12.1
bales and stacks of hay / bale in kopice sena	5	2.2
Total / Skupaj	223	100.0

concrete pylons and metal crossbeams in four villages. As a rule, concrete medium voltage pylons (as well as some low voltage pylons) have conductors running at several levels. In the entire Pelagonia only three overhead transmission lines with downturned insulators were registered.

4. Discussion

On the basis of geographically different population trends, the global White Stork population has been divided into subpopulations (SCHULZ 1999B). The Pelagonian population belongs to the south-eastern peripheral subpopulation, and exhibits negative population trends. In 1958 JOVETIĆ (1959) registered 1,424 breeding pairs of White Storks (HPa) in Macedonia, a third of them in Pelagonia. The results of our 2002 survey show that what was the strongest Macedonian population, has declined dramatically since then. Similar declines were noted in the Macedonian Skopje basin (MICEVSKI *et al.* 1992), neighbouring Greece (HÖLZINGER & KÜNKELE 1986, HECKENROTH 1999) and Albania (PEJA & BEGO 1999). It is evident that in the countries of the southern Balkans we are actually faced with one of the strongest negative population trends in the whole range of the species. This appears to be contrary to global trends

(e.g. SCHULZ 1999B) and has not yet been researched. A possible reason for this population decline is the combination of wetland drainage and low precipitation in these areas.

It has been known for a long time that White Storks may breed in colonies (DAMMEROW 1924, VACZIAN 1934, REISER 1939, ERN 1975). With the exception of populations with very low proportions of scattered colonies (e.g. DZIEWIATY 1994, EICHELMAN 1999), White Stork populations with high proportions of colonial breeders have been poorly studied. The first investigations were conducted in Croatia where, in a 1,540 km² area in the Sava floodplain, 86.9% were colonial breeders (SCHNEIDER-JACOBY 1988), and in Poland, where 50% were colonial breeders in the Ketrzyn district covering 1,225 km² (PETERSON *et al.* 1999). As a rule White Stork colonies are formed in the vicinity of larger wetlands (SCHNEIDER-JACOBY 1993, EICHELMAN 1999). The disintegration and disappearance of colonies clearly coincides with drainage of the latter (EL AGBANI & DAKKI 1999, SKOV 1999). On the basis of our 2002 survey this is true for Pelagonia as well. In Macedonia, a population decline with colony disintegration has been noted in the Skopje basin. In 1958, 219 breeding pairs (HPa), of which 94.5% were colonial

breeders, were registered here (JOVETIĆ 1959 & 1960). In this 1,814 km² large area 30 breeding pairs were recorded in a single colony in 1988. The main reason for the desertion of colonies and the decline of the species population in the Skopje basin can, presumably, be attributed mainly to draining Katalanovsko blato (MIČEVSKI *et al.* 1992).

Little is known about the reasons for the formation and/or disintegration of White Stork colonies, particularly for areas where entire populations breed colonially. Macedonia is among those countries with high proportions of colonially nesting White Storks. In 1958, 85% of the population bred there in colonies (JOVETIĆ 1960). The results of our 2002 survey in Pelagonia show that the reduction in colony size has taken place, not only in places where feeding habitats have been destroyed, but also in places where feeding habitats have been little affected by intensive agriculture and development. In areas where surviving habitats have been affected little, the decrease in colony size has evidently been compensated by increasing numbers of solitary breeders.

Of the most important benefits proposed for coloniality, including predator detection, group resistance, numerical swamping, limited nest-sites, cooperative foraging, minimal travel to foraging areas, and information centres (TINBERGEN *et al.* 1963, HORN 1968, ALEXANDER 1974, WARD & ZAHAVI 1979, CAMPBELL & LACK 1985, BAIRLEIN 1996), only the last two or three appear to be significant for White Storks. For birds that exploit resources that are variable in space and time, natural selection does not favour individual territories for resource control (EHLICH *et al.* 1994). Coloniality as a spatio-temporal clumping of nests (CAMPBELL & LACK 1985) is, as far as the Pelagonian White Stork is concerned, a theoretical answer to the diverse and more concentrated food availability in areas little affected by decline in population numbers. On the other hand, solitary (territorial?) breeding in White Storks may be more frequent in drained areas with presumably reduced total quantities and more constant and dispersed availability of food. From the theoretical point of view it is difficult to explain, on the basis of the 2002 survey, why the average size of colonies has been reduced and why population numbers have been compensated with solitary breeders in areas with little affected habitats in northern and central Pelagonia. The greater part of these areas is still traditionally grazed by sheep, horses and cattle (e.g. water buffaloes), while relatively smaller areas are dry to wet, extensively farmed grasslands.

In view of the impact of overhead lines on White

Stork in the countries of western and eastern Europe (FIEDLER & WIESSNER 1980, FIEDLER 1999), we estimate that the rapid reconstruction of Pelagonian overhead transmission lines, which is at complete variance with nature conservation, will have an impact on the development of this bird's population. White Storks have already begun to perish in some places due to high mortality caused by certain structural characteristics of concrete pylons and earth faults. Such is the case in Žabjane, where the reconstruction of the electric power network with concrete pylons equipped with upturned insulators is still in progress – with two dead Storks in a couple of days! Irrespective of the fact that there is no hard information on electrocution of White Storks in Macedonia we believe, that the reconstruction of overhead transmission lines, which are dangerous to birds, is at this moment the most important factor in the White Stork's negative population trend in Pelagonia, and in Macedonia in general. The great land claim overexploitations in Macedonia have ended, while the intensification of agricultural production is stagnating and even receding. But on the basis of the 2002 survey we infer, that the reconstruction of overhead transmission lines in Pelagonia, has and very probably is hastening the decline of the White Stork population.

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5. Povzetek

V maju 2002 je bil v Pelagoniji v južni Makedoniji opravljen popis bele štorke *Ciconia ciconia*. Na območju, velikem 1104 km², je bilo ugotovljenih 223 parov (HPa), 7 nezasedenih gnezd (H) in 5 poskusov gnezditve (HB1 ali HB2). Med popisanimi kolonijami (≥ 5 HPa) je največja štela 20 parov. Bele štorke v Pelagoniji gnezdiijo v vaseh: na stavbah 56,1%, na drogovich 29,6%, na drevesih 12,1% in na kopicah in balah sena 2,2% para. Ekološka gostota (StDBiol) je 20,2 para/100 km². V primerjavi s popisom v letu 1958 kaže popis v letu 2002 upad HPa za 52,4%, zmanjšanje števila kolonij z 27 na 15 in nazadovanje velikosti kolonij s 16,7 para na 9,7 para/kolonijo. Delež kolonijskih gnezdiilk v pelagonski populaciji se

je zmanjšal z 92,9% na 65,0%, delež solitarnih gnezdilk (1HPa / vas) pa povečal z 2,1% v letu 1958 na 18,8% v letu 2002. Kolonije štokeljev so praktično izginile na izsušenih območjih v južni Pelagoniji. V severni in osrednji Pelagoniji z ekstenzivno pašo in košnjo so števila gnezdečih parov in kolonij ob obeh popisih ostala enaka: nazadovanje velikosti kolonij s 14,5 na 9,7 para / kolonijo je kompenziralo naraščanje števila solitarnih gnezdilk. Nazadovanje populacije in razpad kolonij belih štokeljev v Pelagoniji kaže na splošni negativni proces v Makedoniji. Obsežna in naravovarstveno neskladna obnova zračnih vodov v Pelagoniji bo proces razpada kolonij in nazadovanja populacije pospešila.

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EFFECT OF FLOODS ON THE DISTRIBUTION OF MEADOW BIRDS ON LJUBLJANSKO BARJE

Vpliv poplav na gnezditveno razširjenost travniških ptic na Ljubljanskem barju

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I investigated the density of meadow birds breeding on Ljubljansko barje as a function of three different flooding regimes. The densities of Common Quail *Coturnix coturnix*, Corn Crake *Crex crex*, Northern Lapwing *Vanellus vanellus*, Sky Lark *Alauda arvensis*, Tree Pipit *Anthus trivialis*, Whinchat *Saxicola rubetra*, Marsh Warbler *Acrocephalus palustris*, Common Whitethroat *Sylvia communis* and Corn Bunting *Miliaria calandra* were significantly higher on regularly flooded than on non-flooded areas. A similar effect was not observed on a Common Stonechat *Saxicola torquata* population. I discuss some reasons for the positive effect of floods on breeding density. Preservation, or even expansion, of areas with extensive agriculture and regular floods is strongly recommend as an essential conservation measure for meadow birds on Ljubljansko barje.

Key words: meadow birds, breeding density, floods, Ljubljansko barje, Slovenia

Ključne besede: travniške ptice, gnezditvena gostota, poplave, Ljubljansko barje, Slovenija

1. Introduction

In Europe, agriculture is one of the most important factors affecting bird populations (TUCKER & EVANS 1997). According to British experience, of all birds, those from farmland suffered the greatest decline in term of population number and distribution (GIBBONS *et al.* 1993, FULLER *et al.* 1995). About 70% of 173 priority bird species from agricultural and grassland habitats in Europe have an unfavourable conservation status (TUCKER & DIXON in: TUCKER & EVANS 1997). A similar situation pertains in North America (HERKERT & KNOPF 1998). It is not easy to define the key causes for these declines, since there are many, but what they all have in common is, what we know as agricultural intensification. Some of the well known causes are increased use of pesticides and fertilisers, creation of large fields without set asides (hedges, etc.), changes in ploughing, harvesting, mowing regime and extensive land drainage (NEWTON 1998), which are often basic to all other causes considered.

In Slovenia there is no hard data on temporal changes in birds populations, but some reports indicate a decline of farmland birds and birds from

wet grasslands (BRAČKO 1986, TOME 1998). There are also some studies where spatial changes in breeding bird densities, caused by different types and levels of land practice, could be used to estimate the influence of agriculture on bird communities. One such is the breeding bird atlas of Ljubljansko barje (SOVINC *et al.* in prep.). The aim of this paper is to present differences in breeding densities of meadow birds on flooded and non-flooded areas of Ljubljansko barje and to evaluate them from the land management point of view.

2. Study area and methods

Ljubljansko barje is 5-10 km wide and about 20 km long, a flat depression south of the city of Ljubljana in central Slovenia. The study area is about 150 km², and lies 287-290 m above sea level. Before agriculture started to become intensified 150 years ago, this was a raised bog. Today, primarily due to drainage and exploitation of peat, only a few raised bog fragments remain (total area about 0.5%), all of which have reached full development in forests of *Pino sylvestris-Betuletum* and *Betulo-Quercetum roboris* type (MARTINČIČ 1987). The remaining areas are

predominantly corn fields (about 25%), semi-intensive grasslands (about 40%), traditional meadows (about 12%), built-up and industrial areas (about 7%). Other types of land (orchards, ditches area, reed beds, open water, etc.) do not account for more than 1% of the area. (KOTARAC 1999)

In spite of long term efforts at drainage, occasional floods still occur. They are confined roughly to the central part of Ljubljansko barje, on both sides of the Ljubljanica river (KOLBEZEN 1984). Floods are most frequent in the autumn and winter, less so in spring and least of all in summer. They usually last from 1 to 7 days.

Data on numbers of breeding bird populations were collected by several field workers between 1989 and 1996 during a systematic survey of the area for an atlas of breeding birds in a 1x1 km grid (detailed description of data collection methods see in SOVINČ *et al.* 1993). In the present work I took into consideration only squares with at least 75% non-forested, non built-up area. These squares were designated as "open squares". According to data from KOLBEZEN (1984), selected open squares were separated into three types: (1) regularly flooded squares - entirely flooded almost every year; (2)

occasionally flooded squares - flooded only partially and, in some years, not flooded at all; (3) non-flooded squares - normally not flooded.

Meadow birds were defined as all non-aquatic species nesting directly on the ground among herbaceous plants and as birds building nests low over the ground on annual plants. Densities of birds were compared between all three types of squares, using Kruskal-Wallis ANOVA test. Differences were significant to $p < 0.05$. The calculations were done only for birds found on at least 50 open squares, to minimise inaccuracy caused by small sample size.

In 1997, all squares were surveyed in summer and scored visually to the nearest 10% for the presence of forest, fields, meadows and, to the nearest 100 m length, of hedgerows ("mejice" in Slovene language).

3. Results

Of 111 squares considered in this research, 47 (42%) were regarded as non-flooded, 24 (22%) as occasionally-flooded and 40 (36%) as regularly flooded, indicating that a little over half the open area on Ljubljansko barje is, at least occasionally, exposed to high waters.

Table 1: Proportion of occupied squares and density of singing males on nonflooded (NF) areas, semiflooded (SF) areas and flooded (FL) areas

Tabela 1: Delež zasedenih kvadratov in gostota pojočih samcev v nepoplavljenih (NF), delno poplavljenih (SF) in poplavljenih (FL) območjih

	Occupied squares/ Zasedeni kvadrati			Density of singing males/km ² (avg, std), number of occupied squares (N) / Gostota pojočih samcev/km ² (avg, std), število zasednih kvadratov (N)									Kruskal-Wallis ANOVA	
	NF	SF	FL	NF			SF			FL			H	p
	%	%	%	avg	std	N	avg	std	N	avg	std	N		
<i>Coturnix coturnix</i>	53	63	78	1.6	2.56	25	2.9	3.42	15	4.2	4.87	31	9.9	0.00720
<i>Crex crex</i>	23	67	83	0.3	0.60	11	1.2	1.10	16	4.6	3.99	33	42.0	0.00000
<i>Vanellus vanellus</i>	28	50	60	2.0	4.45	13	4.4	5.72	12	3.5	4.21	24	11.2	0.00360
<i>Alauda arvensis</i>	77	100	100	8.4	8.49	36	16.3	11.57	24	16.4	13.09	40	17.2	0.00020
<i>Anthus trivialis</i>	79	100	100	9.9	7.64	37	14.8	6.15	24	22.8	10.52	40	32.7	0.00000
<i>Saxicola rubetra</i>	81	96	100	9.4	7.95	38	17.8	8.63	23	22.8	10.21	40	34.5	0.00000
<i>Saxicola torquata</i>	72	88	70	2.5	2.45	34	2.4	1.82	21	1.5	1.54	28	3.1	0.21050
<i>Acrocephalus palustris</i>	77	100	100	9.2	9.36	36	14.2	9.03	24	21.9	12.42	40	32.0	0.00000
<i>Sylvia communis</i>	87	100	100	4.9	4.12	41	8.2	5.64	24	12.3	6.73	40	34.1	0.00000
<i>Miliaria calandra</i>	30	63	50	0.4	0.69	14	1.3	1.71	15	1.7	2.53	20	8.3	0.01600
No. of squares/ Število kvadratov	47	24	40											

Among meadow birds, 10 species breed on Ljubljansko barje in a defined distribution threshold (over 50 occupied squares). They are as follows (with number of occupied squares and estimated mean population size in brackets; SOVINČ *et al.* in prep.): Common Quail *Coturnix coturnix* (79, 330), Corn Crake *Crex crex* (73, 260), Northern Lapwing *Vanellus vanellus* (52, 340), Sky Lark *Alauda arvensis* (113, 1480), Tree Pipit *Anthus trivialis* (127, 1970), Whinchat *Saxicola rubetra* (123, 1860), Common Stonechat *Saxicola torquata* (102, 290), Marsh Warbler *Acrocephalus palustris* (127, 2060), Common Whitethroat *Sylvia communis* (129, 1030) and Corn Bunting *Miliaria calandra* (53, 125). In all species except the Common Stonechat, there were significantly different densities between non, occasionally and regularly flooded squares (Table 1). Population sizes of Common Quail, Corn Crake, Tree Pipit, Whinchat, Marsh Warbler, Common Whitethroat and Corn Bunting increased more or less steadily from non, through occasionally, to regularly-flooded areas, while populations of Northern Lapwing and Sky Lark increased significantly from non to occasionally flooded areas, but remained unchanged on regularly flooded areas.

The proportion of fields and meadows correlated significantly with the flooding regime, with fields occupying almost twice as large an area in non-flooded as in flooded squares ($H=9.74$, $p=0.0077$), and a considerably higher proportion of meadows on flooded as opposed to non-flooded areas ($H=10.27$,

$p=0.006$; Figure 1). The proportion of forests ($H=0.18$, $p=NS$) and length of the tree lines ($H=3.77$, $p=NS$) did not differ between areas with different flooding regimes, probably due to eliminating squares with more than 1/4 of the area covered with trees.

4. Discussion

Common Stonechat was the only one of ten species with a lower density on flooded compare to non-flooded areas, which came as no surprise. In Europe, dry plains and hillsides are the most frequent type of breeding habitat of this species (CRAMP 1998). Apart from this, the results indicate the great importance of floods for meadow birds (Table 1) - nine out of ten species nested in greater densities on flooded than on non-flooded areas. More than 70% of their total population, and over 90% of all calling male Corn Crakes being present on regularly and occasionally flooded areas combined (57% of the open squares). If breeding success would be considered, the value of regularly flooded, traditional meadows for birds would probably be even greater.

Population sizes of the nine meadow species ranged from 10% (Tree Pipit) to about 50% (Corn Crake, and Marsh Warbler) of the total Slovenian population (TRONTELJ 2001, SOVINČ *et al.* in prep.). Considering that Ljubljansko barje is less than 1% of the total area of Slovenia, the importance for birds of floods must be considered on the national scale. Four of the species, Common Quail, Corn Crake, Sky Lark and

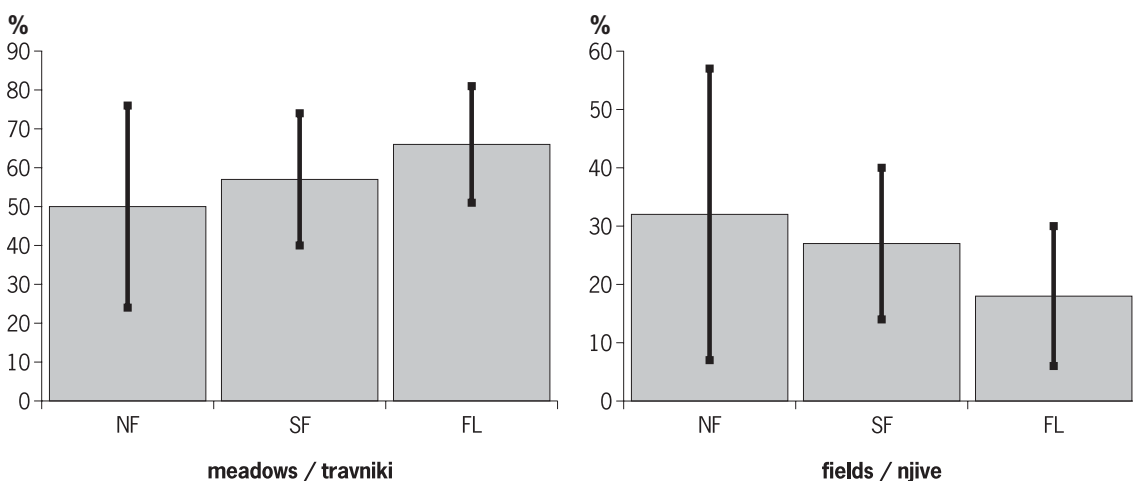


Figure 1: Proportion of meadows and fields according to flooding regime in 1 x 1 km squares on Ljubljansko barje (NF=non-flooded, SF=semi-flooded, FL=flooded, bars=average, lines = standard deviation)

Slika 1: Delež travnikov in njiv glede na poplavni režim v 1 x 1 km kvadratih na Ljubljanskem barju (NF=nepoplavni, SF=delno poplavni, FL=poplavni, bars=povprečje, črte=standardni odklon)

Corn Bunting are also listed as endangered breeding birds (BRAČKO *et al.* 1994), with Northern Lapwing, Whinchat and Common Whitethroat being on a new proposal of endangered breeding birds in Slovenia (DOPPS unpubl.).

The most striking change in density was in Corn Crake, a globally endangered species (TUCKER & HEATH 1994). On frequently flooded areas there was about 10 times greater density than on non-flooded ones. These results confirm findings (GROBELNIK 2000) that, on Ljubljansko barje, traditional meadows are by far the most important habitat type for this species, and agree with conclusions of WILLI (1985), that Corn Crake is among the most sensitive birds when drainage of the habitat is in question. Although the population size of this species is not significant on the international scale, representing less than 0.01%, it is one of the greatest in southern Europe (SCHÄFFER & GREEN 2000) – and, we should not forget, concentrated on a very small area!

Northern Lapwings and Sky Larks differ from other species whose populations increase more or less steadily from non, through occasionally, to regularly flooded areas, in having average densities that are similar on occasionally and regularly flooded squares. In spite of differences in ecology of these species, they both prefer to nest in short vegetation or, if not available, on fields (WILLI 1985, BEINTEMA & MUSKENS 1987, CHAMBERLAIN & GREGORY 1999). On Ljubljansko barje many regularly flooded areas stay unmown (personal observations). In spring they are covered with a dense, tall layer of dead annual vegetation stalks (predominantly *Filipendula ulmaria*), which makes them less appropriate for the two species, hence reducing their average density in flooded squares. Sky Larks also prefer dry to wet nesting places (WILLI 1985). My estimate is, that the importance of floods for these two species is to some degree lower (but not insignificant!) than for the other seven.

Since all the birds considered are terrestrial, water from floods could not have a direct influence on their distribution. What probably shapes their settling patterns are land management, vegetation structure and food. On Ljubljansko barje, frequently flooded areas are not as suitable for agricultural practice as others (personal communication with farmers) and traditional, seldom fertilised, late mowed meadows predominate. A late mowing date in particular is known to increase reproductive success in meadow birds (BEINTEMA & MUSKENS 1987), and consequently, the breeding density. Corn fields and semi-intensive meadows, which are less friendly to

birds, are more common in non-flooded areas (Figure 1), resulting in low breeding densities. On the other hand, high water table and frequent floods make a structure of vegetation more suitable for many of the meadow birds, and moist land also increases the quantity and/or quality of available food (BEINTEMA 1988). So floods on Ljubljansko barje have a direct impact on agriculture practice and on some important ecological features of the meadows, all in turn influencing the distribution and population size of the birds. If the nationally important breeding populations of meadow birds on Ljubljansko barje are to be conserved, it is of vital importance to preserve or even expand areas with traditional agriculture and regular floods.

5. Povzetek

Na Ljubljanskem barju sem raziskoval gostoto travniških gnezdilcev na treh območjih, ki se med seboj razlikujejo glede na režim poplavljanja. Ugotovil sem, da so gostote prepelice *Coturnix coturnix*, kosca *Crex crex*, pribe *Vanellus vanellus*, poljskega škrjanca *Alauda arvensis*, drevesne cipe *Anthus trivialis*, repaljščice *Saxicola rubetra*, močvirske trstnice *Acrocephalus palustris*, rjave penice *Sylvia communis* in velikega strnada *Miliaria calandra* značilno večje na vsakoletno poplavljenih površinah kot na površinah, kjer poplav ni ali pa so zelo redke. Gnezditvena gostota prosnika *Saxicola torquata* ni bila odvisna od poplavnega režima. Predstavljam nekaj vzrokov za tako ugoden vpliv poplav na ptice. Kot nujen naravovarstveni ukrep za ohranitev nacionalno pomembnih populacij travniških ptic na barju predlagam ohranitev ali celo razširitev poplavnih površin in ekstenzivnega kmetovanja.

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PREHRANA VELIKE UHARICE *Bubo bubo* V JUGOZAHODNI SLOVENIJIDiet of the Eagle Owl *Bubo bubo* in southwestern Slovenia

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The article presents the diet of the Eagle Owl *Bubo bubo* in three selected areas of southwestern Slovenia: Notranjska, Vipavska and Kras. Of the 2,392 prey units obtained from pellets, plucking posts and nest contents, 76% belonged to mammals and 23% to birds. In SW Slovenia, the Eagle Owl is a generalist as far as its diet is concerned. In this region, 19 different mammal and 47 bird taxa were recorded. The most common prey species were Fat Dormouse *Glis glis* (20.2%) and Water Vole *Arvicola terrestris* (16.7%). Other species covered less than 10% of the share as far as their numbers are concerned. The highest biomass share in the Eagle Owl's diet went to the Eastern European Hedgehog *Erinaceus concolor* (26.6%). Central part of the prey (between 1st and 3rd quartile) weighed between 80 and 320 g, median 150 g. The least diverse diet was recorded in the owls of the Notranjska region, where Voles were prevalent. In comparison with the other two areas, the smallest dietary overlap was also established in the Notranjska region.

Ključne besede: velika uharica, *Bubo bubo*, prehrana, JZ Slovenija

Key words: Eagle Owl, *Bubo bubo*, diet, SW Slovenia

1. Uvod

Velika uharica *Bubo bubo* je največja in najredkejša v Sloveniji gnezdeča vrsta sove. Njena številčnost je ocenjena na 50 do 100 parov, razširjenost pa omejena na jugozahodno in južno Slovenijo (GEISTER 1995).

Prehrana velike uharice je v Evropi dobro raziskana. Njen glavni plen so srednje veliki sesalci iz družin zajcev Leporidae, ježev Erinaceidae in miši Muridae, med ptiči pa lovi predvsem predstavnike iz družin orlov Accipitridae, poljskih kur Phasianidae in vranov Corvidae (CRAMP 1977, OLSON 1979, MARCHESI *et al.* 2002). Njena prehrana je zelo pestra in pogosto odvisna od gostote plena in letnega časa (HOJO *et al.* 1999). Lovi predvsem v večernem in jutranjem mraku, navadno s čakanjem na preglednih mestih, lahko pa tudi s sistematičnim preletavanjem območja. Pri lovu se izogiba gostih gozdov (WILLGOHS 1974, CRAMP 1977, HOJO *et al.* 1999). Raziskave o prehrani velike uharice v Sloveniji so bile omejene samo na Primorsko (LIPEJ 1988 & 1995).

V delu je prikazana prehrana velike uharice v jugozahodni Sloveniji, kjer živi večina slovenske

populacije. Prikazani sta tudi širina prehranjevalne niše na posameznih območjih in podobnost pri izbiri plena med notranjskim, vipavskim in kraškim območjem.

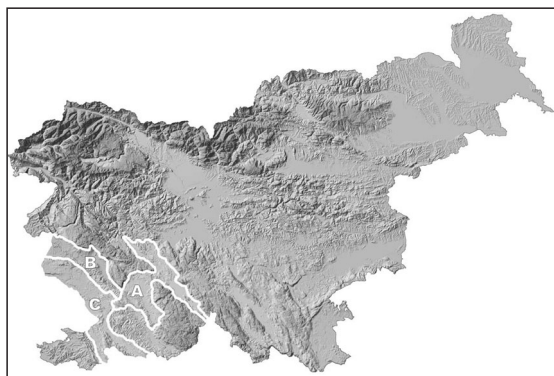
2. Opis obravnavanega območja in metode

2.1. Opis obravnavanega območja

Raziskovano območje sem glede na naravno geografsko regionalizacijo Slovenije (GABROVEC *et al.* 1998) razmejil na notranjsko (Notranjsko in Pivško podolje z Vremščico), vipavsko (Vipavska dolina) in kraško območje (Kras, Podgorski kras, Čičarija in Podgrajsko podolje; slika 1). V analizo prehrane sem vključil material, nabran v okolici devetih gnezdišč (treh iz posameznega območja).

Notranjsko območje obsega dinarska podolja in ravnike znotraj visokega dinarskega planotastega sveta. Gozda je malo, kljub temu da območje leži v dinarskem svetu. Najpomembnejši v rabi tal so travniki in njive. V gozdni vegetaciji prevladujejo bukovi gozdovi (FRIDL *et al.* 1998).

Vipavsko območje obsega gričevnat svet nizkih



Slika 1: Območja raziskave: A = notranjsko območje, B = vipavsko območje, C = kraško območje

Figure 1: Study areas: A = Notranjska, B = Vipavska, C = Kras

nadmorskih višin. Vegetacija je večinoma negozdna. Najpomembnejši v rabi tal so travniki in njive (FRIDL *et al.* 1998).

Na kraškem območju prevladuje planotast svet na nizki nadmorski višini. Pri rabi tal so najpomembnejši travniki in pašniki. Nekdaj skoraj v celoti negozdno območje se danes zarašča povečini s črnim borom *Pinus nigra*. Gozdovi so fragmentirani (FRIDL *et al.* 1998).

2.2. Metode

Prehrano velike uharice sem ugotavljal po ostankih uplenjenih živali v izbljuvkih, najdenih na skubiščih, počivališčih in v gnezdih. Material sem zbiral jeseni, saj je vrsta izredno občutljiva za motnje v predgnezditvenem in gnezditvenem času (MIKKOLA 1983).

V septembru med letoma 1997 in 2001 sem znotraj posameznega območja preiskal vsa znana gnezda, počivališča in skubišča ter pobral material, pomemben za določanje plena. Sistematično sem preiskal tudi bližino gnezda, gnezdilno steno, tla pod večjimi drevesi v bližini in topografsko izpostavljene točke na terenu. Da bi preprečil morebitne zamenjave skubišč velike uharice z drugimi vrstami, sem v analizo vključil samo material, nabran v krogu okoli 100 m od gnezda.

Za določitev števila plena iz izbljuvkov sem uporabil metodo minimuma (OLSON 1979). Do nivoja vrste sem določeval samo sesalce in ptice. Uporabljal sem določevalne ključe (YALDEN 1977, KRYŠTUFEK 1985 & 1991, YALDEN & MORRIS 1990, KRYŠTUFEK & JANŽEKOVIČ 1999). Žuželke sem vključil v analizo samo v primeru, če v izbljuvkih ni bilo ostankov žužkojedih živali (drozgi, jež), saj bi ostanki

žuželk lahko izvirali iz prebavil le-teh.

Za izračun biomase sem uporabil podatke iz literature (CRAMP 1977, KRYŠTUFEK 1991, KRYŠTUFEK & JANŽEKOVIČ 1999). Pri večjih vrstah plena (lisica *Vulpes vulpes* in poljski zajec *Lepus europaeus*) sem maso omejil na 2500 g, saj velika uharica težje živali pleni le izjemoma (HÖGLUND 1966, WILLGOHS 1974).

Širino prehranjevalne niše (ŠPN) sem ocenjeval po Simpsonu (v TARMAN 1992). Podobnost med območji (notranjskim, vipavskim in kraškim) sem ugotavljal s prekrivanjem prehranjevalne niše (O), ki sem ga izračunal po PIANKI (1973) z vrednostjo od 0 (ni prekrivanja) do 1 (popolno prekrivanje).

$$\text{ŠPN} = \frac{1}{\sum \left(\frac{N_i}{N} \right)^2}$$

$$O = \frac{\sum P_{ij} P_{ik}}{\left(\sum P_{ij}^2 \sum P_{ik}^2 \right)^{\frac{1}{2}}}$$

3. Rezultati

Skupno sem določil 2392 enot plena (1542 iz izbljuvkov). Najpogosteje plenjeni vrsti v jugozahodni Sloveniji v obdobju med letoma 1997 in 2001 sta bila polh *Glis glis* (20,2%) in veliki voluhar *Arvicola terrestris* (16,7%). Druge vrste so bile glede na številčnost v plenu velike uharice zastopane z manj kot 10% deležem. Skupen številčni delež sesalcev je bil 76%, ptic pa 23%. Preostali delež plena so sestavljale ribe Osteichthyes, dvoživke Amphibia in žuželke Insecta (tabela 1).

Največji utežni delež je imel beloprsi jež *Erinaceus concolor* (26,6%), sledila sta polh (9,4%) in siva podgana *Rattus norvegicus* (8,0%). Delež biomase ptic je bil večji kot njihov številčni delež; zastopane so bile s 37%. Med pticami so k skupni biomasi največ prispevale vrste iz družin orlov Accipitridae (8,4%), vranov Corvidae (6,4%) in plovcev Anatidae (6,3%; tabela 1). Osrednji del plena (med 1. in 3. kvartilom) je tehtal med 80 in 320 g, mediana 150 g.

Iz ostankov prehrane sem izločil 19 različnih taksonov sesalcev in 47 taksonov ptic, nedoločene vrste so bile združene v višje taksonomske kategorije (tabela 2). Velika uharica je lovila ptice od velikosti zelenca *Carduelis chloris* do sive čaplje *Ardea cinerea*.

Predvsem pri večjih vrstah so bili pogosto najdeni ostanki mladičev, kar sem ugotovil po njihovem

Tabela 1: Delež posameznih vrst po številu v prehrani velike uharice *Bubo bubo* v JZ Sloveniji (N – velikost vzorca; A – notranjsko območje; B – vipavsko območje; C – kraško območje; N% – skupni delež po številu; B% – skupni delež po biomasi; M – povprečna masa plena (g); ŠPN – širina prehranjevalne niše; + <0,1%)

Table 1: Share of species numbers in the diet of the Eagle Owl *Bubo bubo* in SW Slovenia (N – sample size; A – Notranjska area; B – Vipavska area; C – Kras area; N% – total share in species numbers; B% – total share in biomass; M – average mass of prey (g); ŠPN – breadth of diet niche; + <0.1%)

N	633	408	349	237	116	149	158	156	186	2392		
Vrsta / species	A1	A2	A3	B1	B2	B3	C1	C2	C3	N%	B%	M
<i>Erinaceus concolor</i>	3,3	2,7	1,4	10,1	26,7	18,1	13,3	17,9	16,7	8,3	26,6	1.030
<i>Crocodyra leucodon</i>	-	-	-	0,4	-	-	0,6	-	-	0,1	+	8
<i>Talpa europaea</i>	0,3	0,2	1,1	0,4	-	0,7	0,6	-	1,1	0,5	0,1	70
<i>Lepus europaeus</i>	-	-	0,9	0,8	0,9	2,0	2,5	1,3	0,5	0,7	5,2	2.500
<i>Sciurus vulgaris</i>	-	0,2	1,1	-	1,7	-	0,6	-	0,5	0,4	0,4	340
<i>Arvicola terrestris</i>	24,3	29,9	20,6	11,8	5,3	7,4	3,8	-	-	16,7	4,1	80
<i>Microtus arvalis</i>	12,3	5,9	1,1	9,3	3,4	-	3,2	-	-	5,7	0,8	45
<i>Microtus agrestis</i>	26,1	9,8	2,0	8,0	1,7	0,7	-	-	-	9,8	1,4	45
<i>Microtus nivalis</i>	-	-	-	1,3	-	-	-	0,6	1,1	0,3	+	50
<i>Microtus multiplex</i>	-	-	-	1,7	4,3	0,7	1,3	-	1,6	0,5	+	20
<i>Microtus</i> spp.	2,7	-	-	1,3	-	-	0,6	-	-	0,9	0,1	45
<i>Apodemus</i> spp.	1,5	0,5	3,2	1,3	1,7	-	1,9	1,3	1,1	1,4	0,1	25
<i>Glis glis</i>	12,3	20,1	46,1	3,4	19,0	11,4	21,5	23,7	24,2	20,2	9,4	150
<i>Rattus norvegicus</i>	0,6	1,0	-	21,5	4,3	28,2	5,1	24,4	22,0	8,1	8,0	320
<i>Rattus</i> spp.	-	-	0,4	4,2	-	2,7	0,6	1,3	-	0,8	0,5	200
<i>Mustela</i> spp.	0,5	0,5	-	-	1,7	-	1,3	-	-	0,4	0,1	110
<i>Martes</i> spp.	-	-	-	-	0,9	-	1,3	-	0,5	0,2	0,7	1.300
<i>Vulpes vulpes</i>	-	0,2	0,6	-	-	-	0,6	-	-	0,2	1,3	2.500
<i>Felis</i> spp.	0,5	-	0,6	1,3	-	0,7	0,6	1,3	1,1	0,5	3,6	2.000
Mammalia	84,4	71,0	79,1	76,8	71,6	72,6	59,4	71,8	70,4	75,9	62,4	
Ardeidae	0,3	0,2	-	-	-	-	-	-	0,5	0,2	0,8	1.500
Anatidae	2,8	3,4	1,4	0,4	-	-	3,8	-	-	1,8	6,3	1.100
Accipitridae	1,9	2,5	1,7	2,5	6,0	3,9	3,2	1,9	2,2	2,5	8,4	1.100
Falconidae	0,5	1,5	-	0,4	1,7	0,7	1,3	1,3	1,6	0,8	0,6	250
Phasianidae	0,3	1,0	1,4	-	1,7	5,4	1,3	3,2	1,6	1,3	5,0	1.250
Rallidae	1,3	1,0	-	-	-	-	-	-	-	0,5	1,3	850
Columbidae	0,9	2,7	1,4	4,2	2,6	3,4	4,4	5,1	5,9	2,8	3,4	400
Strigidae	2,2	2,7	2,7	3,0	2,6	2,0	2,5	1,9	0,5	2,3	2,1	300
Picidae	-	1,5	1,7	-	-	-	1,9	-	-	0,5	0,4	200
NonPasseriformes nedol.	0,6	1,2	1,4	0,4	1,0	-	1,3	1,3	-	0,8	0,6	250
Turdidae	0,6	3,7	3,4	5,9	3,4	2,7	7,6	7,1	4,3	3,5	1,0	90
Corvidae	2,5	3,4	4,0	2,5	6,0	2,7	5,1	3,2	6,5	3,6	6,4	570
Passeriformes nedol.	0,6	3,9	0,6	2,2	1,7	3,9	3,2	1,3	1,6	1,9	0,6	100
Aves	14,5	28,8	19,7	21,5	26,7	24,7	35,6	26,3	24,8	22,6	36,9	
Osteichthyes	0,6	0,2	-	-	-	-	1,9	-	-	0,3	0,5	500
Amphibia	-	-	0,6	-	-	-	0,6	-	0,5	0,2	0,1	100
Insecta	0,5	-	0,6	1,7	1,7	2,7	2,5	1,9	4,3	1,3	+	2
ŠPN	6,1	6,5	3,8	10,2	7,8	7,0	11,5	6,3	7,0			

Tabela 2: Število posameznih vrst ptic v prehrani velike uharice *Bubo bubo* v JZ Sloveniji

Table 2: Bird species in numbers in the diet of Eagle Owl *Bubo bubo* in SW Slovenia

Vrsta / Species	N	Vrsta / Species	N
<i>Podiceps cristatus</i>	1	<i>Asio otus</i>	31
<i>Ardea cinerea</i>	4	<i>Tyto alba</i>	3
<i>Anas platyrhynchos</i>	31	<i>Athene noctua</i>	1
<i>Anas querquedula</i>	3	<i>Otus scops</i>	1
<i>Anas penelope</i>	2	<i>Cuculus canorus</i>	3
<i>Anas</i> spp.	8	<i>Apus</i> spp.	4
<i>Pernis apivorus</i>	16	<i>Dryocopus martius</i>	6
<i>Buteo buteo</i>	37	<i>Dendrocopos</i> spp.	9
<i>Accipiter gentilis</i>	3	NonPasseriformes nedol. / undet.	8
<i>Accipiter nisus</i>	2	<i>Turdus merula</i>	49
<i>Accipiter</i> spp.	1	<i>Turdus philomelos</i>	21
<i>Falco tinnunculus</i>	16	<i>Turdus viscivorus</i>	8
<i>Falco vespertinus</i>	3	<i>Turdus</i> spp.	6
<i>Falco peregrinus</i>	1	<i>Lanius collurio</i>	1
<i>Phasianus colchicus</i>	24	<i>Oriolus oriolus</i>	2
<i>Coturnix coturnix</i>	7	<i>Sturnus vulgaris</i>	11
<i>Gallinula chloropus</i>	2	<i>Garrulus glandarius</i>	15
<i>Fulica atra</i>	9	<i>Pica pica</i>	7
Rallidae nedol. / undet.	1	<i>Corvus corone</i>	34
<i>Vanellus vanellus</i>	2	<i>Corvus corax</i>	21
<i>Scolopax rusticola</i>	1	Corvidae nedol. / undet.	9
<i>Larus ridibundus</i>	1	<i>Fringilla coelebs</i>	7
<i>Columba palumbus</i>	34	<i>Carduelis chloris</i>	1
<i>Columba livia</i>	28	<i>Pyrrhula pyrrhula</i>	1
<i>Columba</i> spp.	4	<i>Coccothraustes coccothraustes</i>	6
<i>Strix aluco</i>	13	Passeriformes nedol. / undet.	16
<i>Strix uralensis</i>	6		

Tabela 3: Delež posameznih vrst ali skupin plena v prehrani velike uharice *Bubo bubo* glede na število in biomaso po posameznih območjih (N - velikost vzorca, N% - delež po številu, B% - delež po biomasii)

Table 3: Share of separate species or prey groups in the Eagle Owl *Bubo bubo* diet in view of their numbers and biomass in separate areas (N - sample size, N% - share in number of species, B% - share in biomass)

Območje / Area	Notranjsko		Vipavsko		Kraško / Kras	
	N%	B%	N%	B%	N%	B%
<i>Erinaceus concolor</i>	2,7	11,9	16,3	38,8	16,0	35,2
<i>Glis glis</i>	23,1	15,1	9,4	3,2	23,2	7,4
<i>Lepus europaeus</i>	0,2	2,3	1,2	6,9	1,4	7,5
Arvicolidae	49,1	13,4	21,7	2,9	4,0	0,4
Muridae	2,2	1,1	23,3	15,8	19,4	12,2
Carnivora	0,9	5,7	1,4	4,4	2,2	7,1
NonPasseriformes	13,1	39,8	13,3	21,7	15,4	21,3
Passeriformes	7,0	9,4	10,4	6,0	13,2	7,7
ostalo / other	1,7	1,4	3,0	0,4	5,2	1,1
N	1.390	319.430 g	502	217.478 g	500	234.153 g

nedoraslem perju. Najdeni so bili mladiči sive čaplje, kanje *Buteo buteo*, sršenarja *Pernis apivorus*, kozače *Strix uralensis* in krokarja *Corvus corax*.

Najmanj raznovrstno prehrano so imele velike uharice v notranjskem območju, k čemer je največ prispevalo veliko število ulovljenih voluharic Arvicolidae in polhov v tem območju (tabela 1).

Podobnost prehrane oziroma prekrivanje prehranjevalnih niš je bilo največje med osebkami iz vipavskega in kraškega območja ($O = 0,86$). Notranjsko območje jima je bilo manj podobno (notranjsko : vipavsko območje, $O = 0,54$; notranjsko : kraško, $O = 0,51$). Glavna razlika je bila v številu voluharic, ki so bile daleč najbolj zastopana skupina plena na notranjskem območju. Beloprski jež, poljski zajec in miši Muridae pa so bili na notranjskem območju maloštevilni (tabela 3).

4. Diskusija

Velika uharica lovi predvsem številčen in laže dostopen plen, kar jo uvršča med prehranske oportuniste (BEZZEL *et al.* 1976, MYSTERUD & DUNKER 1982, MIKKOLA 1983). Posamezni avtorji opozarjajo tudi na primere specializacije. Tako MIKKOLA (1983) opisuje primer, ko je velika uharica plenila predvsem voluharice. V jugozahodni Sloveniji je bila najožja prehranjevalna niša ugotovljena na Notranjskem, k čemer so največ prispevale voluharice. HIRALDO *et al.* (1976) menijo, da so mali sesalci nadomestili plen, s katerim velika uharica nadomešča pomanjkanje večjega plena. Masa idealnega plena naj bi bila med 200 in 2000 g (HOJO *et al.* 1999). Primerjano z drugimi raziskavami v Evropi (CRAMP 1977, OLSON 1979, MIKKOLA 1983, GLUTZ VON BLOTZHEIM & BAUER 1994), so velike uharice v JZ Sloveniji lovile manjši plen. Največji odmik od primerjanih deležev je bil zabeležen v deležu polha, ki je v jugozahodni Sloveniji najštevilčnejši plen, in poljskega zajca, ki je eden izmed najredkejših plenov. Razlike v zastopanosti plena lahko nastanejo zaradi dostopnosti ali številčnosti posameznih vrst v okolju. Delež plena v odvisnosti od številčnosti se kaže na primeru poljskega zajca. Njegov delež v prehrani (v povprečju manj kot 1% številčnega deleža in 5,2% utežnega deleža) je bil petkrat manjši od ugotovljenega deleža v prehrani velikih uharic na Kraškem robu med letoma 1984 in 1989 (4,6% števila in 40% biomase plena; LIPEJ 1995). Po podatkih ZGS se je število zajcev samo v zadnjih desetih letih na obalnokraškem lovskogojitvenem območju zmanjšalo za skoraj trikrat (ZGS 2001). Ugotovljena majhna zastopanost zajca v prehrani

velike uharice je tako lahko odsev njegove redkosti, saj so njegovi deleži navadno bistveno večji na območjih, kjer je vrsta pogosta. V Španiji zajci in kunci dosegajo celo več kot 80% biomase plena (CRAMP 1977).

Zahvala: Pri zbiranju materiala so mi na terenu pomagali Andrej in Jernej Figelj ter Primož Bizjan. Vsem trem iskrena hvala.

5. Povzetek

V članku je prikazana prehrana velike uharice *Bubo bubo* v treh območjih jugozahodne Slovenije: notranjskem, vipavskem in kraškem. Od 2392 enot plena, dobljenega iz izbljuvkov, skubišč in vsebine gnezd, jih je 76% pripadalo sesalcem, 23% pa pticam. V jugozahodni Sloveniji je velika uharica glede plenjenja generalist. Registriranih je bilo 19 različnih taksonov sesalcev in 47 taksonov ptic. Najpogosteje plenjeni vrsti sta bili polh *Glis glis* (20,2%) in veliki voluhar *Arvicola terrestris* (16,7%). Druge vrste so zajemale manj kot 10% številčnega deleža. Največji delež biomase v prehrani je imel beloprski jež *Erinaceus concolor* (26,6%). Osrednji del plena (med 1. in 3. kvartilom) je tehtal med 80 in 320 g, mediana 150 g. Najmanj raznovrstno prehrano so imele velike uharice iz notranjskega območja, kjer so v prehrani prevladovali voluharice. V notranjskem območju je bilo v primerjavi z drugima dvema ugotovljeno tudi najmanjše prekrivanje prehranjevalne niše.

6. Literatura

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SOLITARY BREEDING OF GRIFFON VULTURE *Gyps fulvus* ON THE ISLAND OF PAG (CROATIA) IN 1997

Solitarno gnezdenje beloglavega jastreba *Gyps fulvus* na otoku Pagu v letu 1997

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1. Introduction

The present breeding range of Griffon Vulture *Gyps fulvus* in Croatia stretches along the rugged Mediterranean coast of the north-east Adriatic seaboard (Figure 1), from the islands of the Kvarner Archipelago (Kvarner Gulf) to the southern part of Velebit mountain (PERCO *et al.* 1983, KRALJ 1997, LUKAČ 1998). The Croatian breeding population has been estimated at 50-100 pairs (TUCKER & HEATH 1994) or 110-150 pairs (SUŠIĆ 1994). The population stronghold of 95-100 pairs, is on the group of four large islands in the Kvarner Archipelago, with about 50 pairs on Cres (SUŠIĆ 1994). Other permanent colonies in Kvarner are on the Krk and Prvić, while the number of breeding pairs on Lošinj, Plavnik, Goli, Sv. Grgur and perhaps Rab and Pag are smaller and probably less constant (PERCO *et al.* 1983). Breeding was mentioned on the islands Goli, Sv. Grgur, Rab and Pag but not confirmed, since nests with young or an egg have not been recorded on these islands. In fact, breeding has been claimed only by local inhabitants (PERCO *et al.* 1983) or by LOVRIĆ (1971) who stated breeding wherever Griffons appeared.

Excluding colonies on the Kvarner islands, a small colony existed on the mainland up to 1999 in Mediterranean canyons (gorges) of Paklenica National Park on the southern coastal slopes of Velebit mountain. This small colony traditionally had nesting ledges on the cliffs of two gorges (LUKAČ & STIPČEVIĆ 1997). Recent numbers of breeding pairs in Paklenica National Park ranged from estimates of 8-15 pairs in 1985, 7 pairs in 1996, 8 pairs in 1997, 1 pair in 1998, 3 pairs in 1999, to a complete lack of breeding from 2000 to 2002 (LUKAČ & STIPČEVIĆ 1997, LUKAČ 2000, LUKAČ *et al.* in press).

Historically, breeding sites have been reported from the mountainous Mediterranean region of Dalmatia (CVITANIĆ 1963, KRALJ 1997, RUCNER 1998). Today there is no confirmation of recent breeding, although Griffons certainly bred in the past in much wider areas (LUKAČ 1998), even in the lowland plains

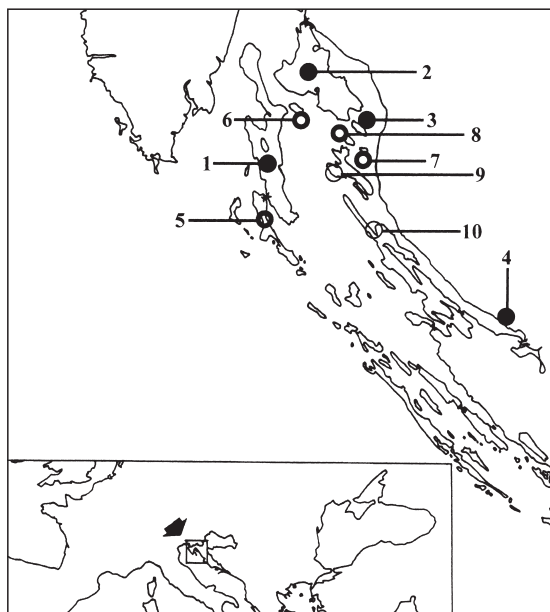


Figure 1: Distribution of breeding of Griffon Vulture *Gyps fulvus* in Croatia (PERCO *et al.* 1983, SUŠIĆ 1994, LUKAČ & STIPČEVIĆ 1997). Symbols (dots and circles) indicate only relative, not precise, breeding sites or colonies on islands in the Kvarner Gulf.
 - Main permanent colonies (dots ●): 1. Cres, 2. Krk, 3. Prvić, 4. Paklenica (southern Velebit);
 - Occasional breeding (claimed and reported) of small groups or single pairs (bold circles ●): 5. Lošinj, 6. Plavnik, 7. Goli, 8. Sv. Grgur;
 - Occasional breeding (presumed but not reported) of small groups or single pairs (thin circles ○): 9. Rab, 10. Pag (now confirmed)

Slika 1: Gnezditvena razširjenost beloglavega jastreba *Gyps fulvus* na Hrvaškem (PERCO *et al.* 1983, SUŠIĆ 1994, LUKAČ & STIPČEVIĆ 1997); Simboli (točke in krogi) prikazujejo le relativni položaj otokov v Kvarnerskem zalivu in ne natančnih lokacij gnezd ali kolonij.

- Glavne stalne kolonije (točke ●): 1. Cres, 2. Krk, 3. Prvić, 4. Paklenica (južni Velebit);
- Občasno gnezdenje (potrjeno in objavljeno) manjših skupin ali osamljenih parov (debeli krogi ●): 5. Lošinj, 6. Plavnik, 7. Goli, 8. Sv. Grgur;
- Občasno gnezdenje (verjetno ali neobjavljeno) manjših skupin ali osamljenih parov (tanki krogi ○): 9. Rab, 10. Pag (sedaj potrjeno)

of Slavonia (KRALJ 1997). Some other occasional breeding sites are presumed to exist today in the coastal region of Croatia, mainly in the area of the recent breeding distribution, from the Kvarner Archipelago to the southern part of Velebit mountain.

2. Material and methods

The search for a nesting site of Griffon Vulture on the island of Pag was based on information from local inhabitants. The specific location on the island Pag has been checked for ten years (Table 1). The precise nest site location is not stated. At a site of special interest we surveyed, on foot, all accessible cliffs suitable for breeding.

Table 1: Field-days and number of Griffon Vultures *Gyps fulvus* seen on cliffs on Pag (age of birds not specified)

Tabela 1: Terenski dnevni in število beloglavih jastrebcev *Gyps fulvus*, opazovanih na gnezdilnem klifu na otoku Pagu (starost ptic ni navedena)

Date	No. of individuals/ št. osebkov
9 th July 1991	10
9 th July 1991	10
16 th March 1993	4
7 th June 1997	4 (+1 pull.)
19 th February 1998	4
28 th April 1998	5
10 th June 1998	2
4 th May 1999	1
16 th April 2000	-
11 th May 2000	3
30 th May 2000	2
17 th January 2001	-
28 th April 2001	3

3. Results

A local hunter claimed that, in the eighties, fishermen found a young Griffon Vulture drowned in the sea beneath the sea cliffs on Pag. In 1991 we received similar information. After several years, we succeeded in 1997 in finding one pair of Griffon Vulture with completely fledged young in the nest.

On June 7th 1997, in the late afternoon, we were close to the steep limestone cliffs, about 120 m high, with a peak of more than 200 m above sea level. The southerly exposed base of the cliffs slopes towards the

sea coast at an angle of about 45°, so being very favourable for sun-developed thermal-lifts for soaring Griffon Vultures at any season. 4 to 10 Griffons use the cliffs regularly as a resting place, and we were not surprised, at 5.40 p.m., to see two adults flying high along the cliffs. Both Griffons alighted on a cliff ledge, when we noted two more Griffons already sitting on the cliffs nearby. A glimpse at the vertical cliff surface revealed a cup of twigs with grass and completely fledged young Griffon in the nest. The eyrie was placed above a great vertical fissure formed by two massive stone blocks, about 20 metres above the cliff base.

The pair of breeding adults were standing quietly some distance from the nest, while their offspring was lying in the eyrie. Obviously, the young vulture had been hatched and reared in the nest during this season. The cinnamon rufous-brown plumage, buff-brown ruff, leaden bill and behaviour of the young vulture in the nest is typical for completely grown Griffons prior to the first flight (PERCO *et al.* 1983). Many white droppings covered the edge of nest and surrounding ledges. The young Griffon in the nest looked healthy and it was clear that it did not fly yet. From 1998 to 2001 the same site was checked again, but the Griffons did not breed. After two years absence, white droppings around the nest were still evident. In May 1999, we took a few photographs, in which the nest cup is clearly seen (Figure 2). Four years later, in 2001, the characteristic nest of the Griffon Vulture was still well preserved and easily recognizable.

4. Discussion

Solitary breeding of Griffon Vulture on the island Pag is not an unexpected phenomenon. The spacing of colonies of cliff-nesting vultures is clearly set by the availability of cliffs, the size of the colonies by the number of suitable ledges, and the availability of food, which dictates a ceiling on bird numbers (NEWTON 1979). Solitary nesters occur especially in areas with numerous possible nesting sites (CRAMP & SIMMONS 1980, GÉNSBØL 1992), and this is certainly the case with the rugged island of Pag, which offers a number of scattered cliffs suitable for breeding Griffon Vultures. Breeding was presumed earlier on the island (PERCO *et al.* 1983), but until 1997 no evidence of nesting had been obtained or reported. Even the most laborious long-term project on the Griffon Vulture population in the Kvarner Gulf provided no confirmation of breeding on Pag (SUIĆ 1994 & 2000).

Pag, and the nearest gorges of Paklenica National

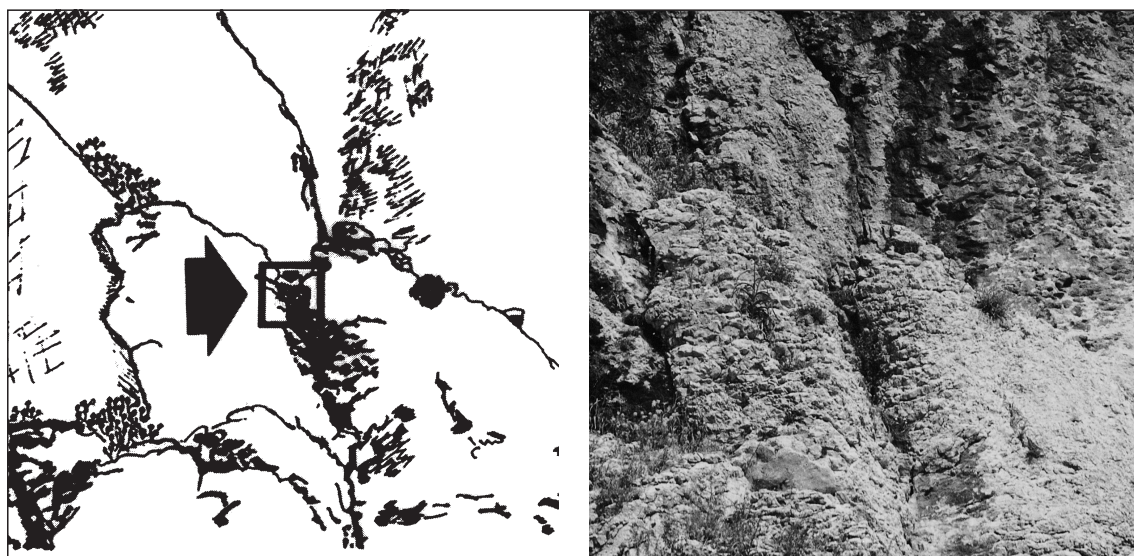


Figure 2: The breeding site of the Griffon Vulture *Gyps fulvus* on the cliffs of Pag on May 4th 1999, with the nest in which one pair reared a young vulture in 1997. The nest in the centre of the square is indicated by arrow. (Photo: M. Stipčević)

Slika 2: Gnezdišče beloglavega jastreba *Gyps fulvus* na klifu na otoku Pagu z gnezdom, v katerem je par leta 1997 vzgojil mladiča (fotografirano 4.5.1999). Glej skico, kjer je gnezdo v središču kvadrata označeno s puščico. (Foto M. Stipčević)

Park, constitute the southern border of the recent breeding area in the north-east Adriatic. In the Kvarner Gulf, occasional breeding of solitary pairs or smaller colonies are to be expected outside the main colony. Colonies fluctuate in size from year to year, sometimes through shifts in individual birds (NEWTON 1979). The occasional breeding at such sites outside great permanent colonies is influenced by population fluctuation. It can result from a displacement of pairs from other colonies, or simply the establishment of sites by new, young and inexperienced pairs at less favourable habitats, due to intraspecific competition for a hierarchical position at the best cliff ledges of the main colonies. The large colonial vultures, all the Griffons which feed together in numbers on a carcass, do not defend territory, except for about a metre round the nest site (BROWN 1976).

The frequency of temporary breeding on the islands of Pag, Lošinj, Plavnik, Goli, Sv. Grgur and Rab, probably depends on the breeding success and mortality rate of Griffon Vultures from the population stronghold in the Kvarner Gulf. There are three main requirements for establishing such isolated breeding sites (GÉNSBØL 1992). There must be cliffs to provide a nesting site, plenty of food, and a countryside where wind and thermals facilitate long gliding flight. All three requirements are well satisfied

on the Pag. The presence of cliffs is more important than the availability of food in determining nesting density (DONÁZAR *et al.* 1985). The presence of many scattered cliffs which hold only a few accessible nesting niches is likely to be the main factor responsible for the solitary and temporary nature of breeding on Pag.

The population stronghold on the islands in the Kvarner Gulf and the small colony in the gorges of Paklenica National Park at the southern Velebit Mountain were connected with the breeding discovered on Pag. All these breeding colonies should be considered as an isolated population of the north-east Adriatic (PERCO *et al.* 1983). The breeding range of Griffon Vulture in Croatia thus stretches continuously along the north-east Adriatic coast, through the link of the Kvarner islands, over the island Pag, to the canyons of Paklenica at the southern part of Velebit. Unfortunately, in 2000, breeding of Griffon Vultures in the gorges of Paklenica National Park ceased, and breeding pairs disappeared from this protected area. Since then, nesting or attempts of an adult pair to breed have not been found. The recent, local extinction of this endangered species in the Paklenica National Park is a serious sign of the further decline of the Croatian population. In this respect, the regular occurrence of small numbers of Griffon Vultures and occasional breeding on islands may be of

crucial importance for the possible recolonization of traditional breeding sites on the continent.

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Summary

In Croatia, Griffon Vultures *Gyps fulvus* breed on islands in the Kvarner Gulf and, until recently, on southern Velebit Mountain. The main permanent colonies in the Kvarner Gulf are on the islands of Cres, Krk and Prvić. Breeding on other islands in the Kvarner Gulf (Lošinj, Plavnik, Goli, Sv. Grgur) is irregular. Occasional nesting on Goli, Sv. Grgur, Rab and Pag had not been confirmed or reported until today with the recently discovered nests with young or egg. In July 1997, one pair of breeding adult Griffon Vulture was found with completely fledged nestling in a nest on cliffs on Pag. The nest is situated at the top of a vertical fissure between two upright stone blocks, about 20 meters above the cliff base. This is the first documented record of Griffon Vulture nesting on Pag. This breeding site is a link between the main population stronghold on islands in the Kvarner Gulf and a small group of Griffon Vultures on the mainland which, until recently, have nested on southern Velebit in gorges of Paklenica National Park.

Povzetek

Beloglavi jastrebi *Gyps fulvus* na Hrvaškem gnezdiyo na Kvarnerskih otokih in do pred kratkim tudi na južnem delu Velebita. Glavne stalne kolonije v Kvarnerju so na otokih Cres, Krk in Prvić. Gnezditvev beloglavih jastrebav na drugih Kvarnerskih otokih (Lošinj, Plavnik, Goli, Sv. Grgur) je neredno. Občasna gnezdenja na otokih Goli, Sv. Grgur, Rab in Pag do danes niso bila potrjena z najdenim gnezdom z jajci ali mladiči. V juliju 1997 je bil par odraslih beloglavih jastrebav najden s popolnoma operjenim mladičem v gnezdu na klifu otoka Paga. Gnezdo je bilo na strmem klifu, visokem okoli 120 m v srednjem delu otoka. Gnezdo je bilo 20 m visoko glede na vznožje klifa v vertikalnem razcepu med dvema vzporednima kamnitima blokoma. Opisana najdba je prvo dokumentirano gnezdenje beloglavih jastrebav na otoku Pagu. Paško gnezdišče je zveza med glavnim delom populacije na otokih Kvarnerskega zaliva z maloštevilno kolonijo, ki je do pred kratkim gnezdila na južnem Velebitu v kanjonu Nacionalnega parka Paklenica.

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SOVE V CERKVAH, GRADOVIH IN DRUGIH OBJEKTIH NA OBMOČJU VIPAVSKE DOLINE IN KRASA V JZ SLOVENIJI

Owls in churches, castles and other buildings in the Vipava valley and the Karst (SW Slovenia)

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1. Uvod

Cerkve, gradovi, gospodarska poslopja in drugi večji ter opuščeni objekti so počivališča in gnezdišča različnih vrst sov. Na takšnih mestih najpogosteje gnezdi pegasta sova *Tyto alba*, redkeje čuk *Athene noctua* in lesna sova *Strix aluco* (MIKKOLA 1983). V stavbah lahko priložnostno gnezditvi ali iščejo zavetje tudi velika uharica *Bubo bubo*, kozača *Strix uralensis*, koconogi čuk *Aegolius funereus* in veliki skovik *Otus scops* (MIKKOLA 1983). Na območju Slovenije so potrjeni primeri o gnezdenju ali zadrževanju na stavbah pegaste sove (JANŽEKOVIČ 1992, ŠERE 1992, ŠORGO 1992, VREZEC 1997, JANŽEKOVIČ & FICKO 2000, KATALINIČ 2000, KERČEK 2000), lesne sove (PERUŠEK 1990, ŠORGO 1992, MAJCNEN 2000, ŠEGULA 2000), čuka (POLAK 1989, SURINA 2000), koconogega čuka (GROŠELJ 1990) in kozače (MIHELIČ *et al.* 2000). V Sloveniji je pojavljanje sov v objektih na širšem območju Ljubljanskega barja raziskoval TOME (1986), v Posavskem hribovju vzhodno od Radeč pa LESKOVŠEK (1988). Oba sta se omejila zgolj na cerkve. Pojavljanje v gradovih V Štajerske je leta 1991 raziskoval ŠORGO (1992). S pegasto sovo v objektih na JV delu Prekmurja se je ukvarjal KATALINIČ (2000). Pegasta sova je redko razširjena (GEISTER 1995) in slabše raziskana vrsta v Sloveniji, za katero ni veliko podatkov o gnezditvi. S pregledovanjem cerkva, gradov in drugih objektov na območju Vipavske doline in Krasa smo želeli zbrati kar največ podatkov o sovah v teh krajih, zlasti o pegasti sovi.

2. Opis območja in metoda

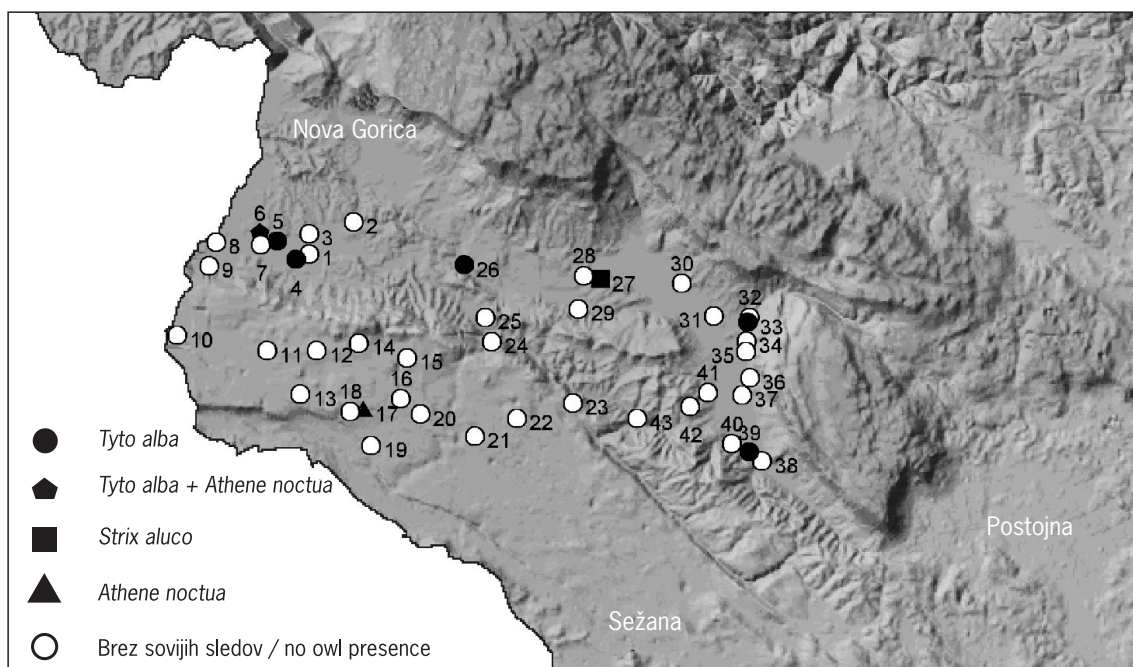
Pojavljanje sov v objektih smo raziskovali v Vipavski dolini in na zahodnem delu Krasa. Vipavska dolina leži med visokima planotama Trnovski gozd in Nanos na severu ter nizko planoto Kras na jugu. Povprečna

nadmorska višina Vipavske doline je 216 m, delež negozdnatih površin, kjer prevladujejo travniki, pa je 67%. Kras je obsežna planota, dvignjena nad Vipavsko dolino in sosednje pokrajine s povprečno nadmorsko višino 334 m. Delež negozdnih površin na Krasu je 69%, med njimi prevladujejo pašniki in travniki (PERKO & OROŽEN ADAMIČ 1998). Območji ležita v submediteranski zoogeografski regiji (MRŠIČ 1997).

Na območju Vipavske doline in Krasa, velikem približno 250 km², smo pregledali 53 objektov, za katere smo menili, da bi v njih utegnile bivati sove. Pregledali smo 34 cerkva, devet gradov, dve gospodarski poslopji, dve opuščeni vojašnici, pet hiš in eno železniško postajo. Na raziskanem območju smo pregledali vse gradove (JAKIČ 1995 & 1999) in 62% vseh cerkva. Druge objekte smo izbrali naključno. Pri tem smo izločili vse objekte, za katere smo domnevali, da dostop na podstrešje ali/in zvonik za ptice ni mogoč (odprtini ni bilo ali pa so bile popolnoma zamrežene oziroma zaprte z deskami). Pregled objektov smo opravili med 27.6. in 2.7.2002. Pri vsakem smo popisali notne parametre (možnost dostopa za ptice na podstrešje, pojavljanje sov in drugih živali na podstrešju). Merilo za potrjeno pojavljanje sov so bila najdena gnezda, osebki ali izbljuvki.

3. Rezultati in diskusija

Pregledali smo 53 stavb in ugotovili, da so se sove pojavljale v 8 izmed njih (15%; slika 1). V enem objektu smo odkrili znamenja tako pegaste sove kot čuka, v petih pegaste sove, v enem samo čuka in v enem lesno sovo. Pri 20 cerkvah (58%) je bil dostop v zvonik in na podstrešje za ptice zaprt (tabela 1). Sledove sov smo ugotovili le v cerkvah, kjer je bil dostop pticam omogočen na podstrešje in zvonik.



Slika 1: Pojavljanje sov v cerkvah, gradovih in drugih objektih na območju Vipavske doline in Krasa (Lokacije in število pregledanih objektov v oklepaju / Locations and no. of checked buildings in brackets: 1-Renče (1), 2-Vogrsko (2), 3-Bukovica (1), 4-Renče (1), 5-Bilje (2), 6-Biljenski grič (1), 7-Bilje (2), 8-Miren (1), 9-Mirenski grad (1), 10-Opatje selo (1), 11-Kostanjevica (1), 12-Temnica (1), 13-Vojščica (1), 14-Lipa (1), 15-Škrbina (1), 16-Sveto (1), 17-Ivanji Grad (1), 18-Zagrajec (1), 19-Gorjansko (1), 20-Komen (1), 21-Gabrovica (1), 22-Kobjeglava (1), 23-Štanjel (2), 24-Branik (1), 25-Branik - Britof (1), 26-Batuje (1), 27-Vipavski Križ (1), 28-Vipavski Križ (2), 29-Velike Žablje (3), 30-Žapuže (1), 31-Duplje - Log (1), 32-Vrhpolje (1), 33-Vrhpolje (1), 34-med Vrhpoljem in Vipavo (1), 35-Vipava (3), 36-Gradišče (1), 37-med Gradščem in Vipavo (1), 38-Podnanos (2), 39-med Podnanosom in Podrago (1), 40-Podraga (1), 41-Lože (1), 42-Goče (1), 43-Kodreti (1))

Figure 1: Owls' presence in churches, castles and other buildings in the Vipava valley and in the Karst

Sledove sov smo ugotovili v treh od petih takšnih cerkva (tabela 2).

Cerkve za sove na raziskanem območju niso ugodna gnezdišča in počivališča, saj so večinoma popolnoma zamrežene. Za edino pomembnejše počivališče pegaste sove se je izkazala cerkev Sv. Kozme in Damjana pri Podgradu, kjer je sova najverjetneje prezimovala. V preteklosti so sove verjetno pogosteje gnezdile v pregledanih cerkvah, saj večina pred 10 leti še ni bila zamrežena. Oskrbnik cerkve v Kobjeglavi je povedal, da so med zamreževanjem zvonika naleteli na mlado sovo. Po zamreženju zvonika sov v cerkvi ni bilo več. Na podobno problematiko je opozoril že PERUŠEK (1990), ki je zapisal, da je nadaljnje gnezdenje lesne sove v več cerkvah na ribniško-kočevskem območju vprašljivo, ker so jih obnovili in zaprli vse odprtine. Ta razlog navaja tudi TOME (1986) kot enega od možnih za majhno pojavljanje sov v cerkvah. Cerkve so zamrežene zaradi domnevno moteče navzočnosti domačih golobov *Columba livia f. domestica*. Tako

nastalo pomanjkanje gnezdišč bi lahko rešili z nameščanjem gnezdilnic (MARTIŠKO 1995) na podstrešja cerkva, ki jih golobi ne zasedejo. Zadrževanje ali gnezdenje pegaste sove v objektih je namreč odvisno bolj od primernih mest za gnezdenje kot od kakovosti okoliških lovnih habitatov (BAUDVIN & JOUAIRE 2001).

Pri pojasnjevanju rezultatov pojavljanja sov v objektih moramo upoštevati tudi tekmovalnost z drugimi vrstami. Pegasta sova se izogiba prostorov, kjer se pojavlja kuna belica *Martes foina* (MIKKOLA 1983). V nobenem od objektov (5), kjer smo našli sveže sledi sov, nismo naleteli na sledi kune *Martes* sp. Kjer smo našli sveže iztrebke kune (3), so bili najdeni izbljuvki sov stari več let. Sklepamo, da je kuna najverjetnejši razlog, da sov v opuščeni tovarniških halah Biljenskih in Goriških opekarn ter cerkvi v Ivanjem gradu ni več. V cerkvi smo našli več centimetrov debel sloj razpadlih izbljuvkov čuka po policah in luknjah v notranjosti zvonika. Čuk se je na tem mestu več let zadrževal, morda celo gnezdil.

Tabela 1: Možnost dostopa za ptice na podstrešja oziroma zvonike cerkva na območju Vipavske doline in Krasa (n = 34)**Table 1:** Access for birds to attics and church towers in the Vipava valley and the Karst (n = 34)

Tip cerkve / Church type	Število / Number	%
zvonik in podstrešje zaprta / closed church tower and attic	20	59
zvonik zaprt, podstrešje odprto / closed church tower, open attic	3	9
zvonik odprt, podstrešje zaprto / open church tower, closed attic	6	18
zvonik in podstrešje odprta / open church tower and attic	5	15
Skupaj / Total	34	100

V gradovih smo sledove sov odkrili mnogo redkeje (11%) kot ŠORGO (1992), ki je njihovo pojavljanje potrdil v 58% pregledanih gradov. Ti so bili večinoma obnovljeni (67%), z novo streho, in so imeli zaprte dostope na podstrešje, kar je verjetni razlog, da sov tam ni bilo.

V starejši hiši na Biljenskem griču smo naleteli na sočasno gnezdenje čuka in pegaste sove v istem objektu. Gnezdi sta bili med seboj oddaljeni le okoli dva metra. Čuk je gnezdil v zidni luknji, pegasta sova pa na podstrešju. Pegasta sova se je s podstrešja vselej sikajoče svarilno oglašala, ko je čuk prinesel hrano mladičem in so se ti začeli oglašati. Ta najdba

je izjemna, saj podobnega podatka v literaturi (MIKKOLA 1983, CRAMP 1985) nismo zasledili. MIKKOLA (1983) navaja primer sočasnega gnezdenja pri pegasti sovi in postovki *Falco tinnunculus*, ki sta uporabljali skupni vhod do gnezdišča. Verjetni razlog za sobivanje čuka in pegaste sove gre iskati predvsem v njihovih zelo različnih trofičnih nišah (SARÀ 1990). Čuk se hrani pretežno z žuželkami, pegasta sova pa z malimi sesalci (CONTOLI *et al.* 1988, SARÀ 1990).

Glede na razmeroma redko pojavljanje ali gnezdenje sov v cerkvah in gradovih predvidevamo, da so stare hiše in drugi objekti pomembnejša

Tabela 2: Podatki o sledovih sov v cerkvah, gradovih in drugih objektih na raziskanem območju Vipavske doline in Krasa**Table 2:** Data on owls' presence in churches, castles and other buildings in the Vipava valley and the Karst

Kraj / Place	Objekt / Building type	Opis najdbe / Find description
Ivanji Grad	cerkev Sv. Križ / church	več 100 razpadlih izbljuvkov čuka/ few 100 decayed Little Owl's pellets
Vrhpolje	cerkev Sv. Križ / church	1 svež izbljuvek pegaste sove / 1 fresh Barn Owl's pellet
Podnanos	cerkev Sv. Kozme in Damjana / church	40 letošnjih izbljuvkov pegaste sove/ 40 this year's Barn Owl's pellets
Vipavski Križ	grad (razvaline) Vipavski Križ / castle ruins	2 sveža izbljuvka lesne sove / 2 fresh Tawny Owl's pellets
Bilje	zapuščena opekarna / abandoned brickworks	10 več let starih izbljuvkov pegaste sove/ 10 few years old Barn Owl's pellets
Biljenski grič	stanovanjska hiša / residential house	gnezdo pegaste sove in čuka z mladiči / breeding Barn Owl and Little Owl together, both with young
Merljaki	zapuščena tovarniška hala/ abandoned factory hall	1 več kot leto dni star izbljuvek pegaste sove/ 1 more than a year old Barn Owl's pellet
Batuje	železniška postaja / railway station	več kot 20 svežih izbljuvkov pegaste sove, verjetno gnezdenje/ more than 20 fresh Barn Owl's pellets, possible breeding

gnezdišča pegaste sove in čuka v Vipavski dolini in na Krasu.

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Povzetek

Na območju Vipavske doline in Krasa smo pregledali 53 objektov (34 cerkva, devet gradov in dvorcev ter 10 drugih objektov) z namenom ugotoviti sledove sov. Našli smo jih v osmih (15%) objektih. V enem objektu smo odkrili gnezdenje pegaste sove *Tyto alba* in čuka *Athene noctua* skupaj, v petih pegasto sovo, v po enem pa čuka in lesno sovo *Strix aluco*. Kar 58% pregledanih cerkva je imelo zaprt dostop na podstrežje in v zvonik. Cerkve in gradovi na raziskanem območju niso ugodna gnezdišča sov. V cerkvah so sove svojčas gnezdile pogosteje, njihovo število se je verjetno zmanjšalo zaradi zamreževanja odprtih. Gradovi imajo večinoma prenovljena podstrežja z zaprtim dostopom za sove. Najverjetneje so stare hiše in drugi objekti na tem območju pomembna gnezdišča za pegasto sovo in čuka.

Summary

The authors of the article examined 53 buildings (34 churches, 9 castles and 10 other structures) in the Vipava valley and in the Karst in order to determine owl presence there. Their occurrence was determined in 8 (15%) buildings. Barn Owl *Tyto alba* and Little Owl *Athene noctua* were found to breed together in one building, solely Barn Owl in five buildings, Little Owl in one and Tawny Owl *Strix aluco* in one building. 58% of the examined churches had accesses for birds to the attics and church towers closed. Churches and castles do not seem to be suitable breeding places for owls in the investigated area. In the past, the owls probably used to breed more frequently in churches than nowadays, the main reason being the closing of the attics and church towers to birds. Namely, castles with renewed roofs have no openings for them. It is most likely that old houses and other buildings are more important Barn and Little Owls' breeding places than castles and churches in the area researched.

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A CASE OF LATE BREEDING OF THE BLACK STORK *Ciconia nigra* IN NORTHWESTERN VOIVODINA (SERBIA)

Primer poznega gnezdenja črne štokrlje *Ciconia nigra* v severozahodni Vojvodini

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The Black Stork *Ciconia nigra* is a regular member of the breeding bird fauna of Serbia (VASIĆ 1995). The present breeding distribution includes primarily the Pannonian plain, and only some breeding pairs are present south of the rivers Sava and Danube. In Serbia, 95-100 pairs have bred recently (PUZOVIĆ & RAŠAJSKI 1996).

The special nature reserve, "Gornje Podunavlje", is situated in the northwestern part of Voivodina province (Pannonian part of Serbia), along the left bank of the Danube. This is a large inundated area, with alluvial wetlands and extensive oak, willow, poplar and ash forests. The site also comprises numerous swamps, backwaters with reedbeds, and poplar plantations (PUZOVIĆ & GRUBAČ 2000). At the national level, the area has been protected as a nature reserve since 2001, and proposals for its designation as a Ramsar site and biosphere reserve are now prepared. This site is most important at the national level for the breeding of Black Storks, as it supports 35-45 pairs, which is 40% of the whole Serbian population (PUZOVIĆ & RAŠAJSKI 1996). Most pairs breed in old enclaves of oak and white poplar forests, on old trees in the southern and northern parts of the reserve (Apatinski rit floodplain and Karapandža forest).

During a visit to Karapandža (northernmost part of the reserve) on September 23rd 2000, a hitherto unknown nest of Black Storks was found by chance on an old oak tree in a mixed stand of hornbeam and red oak (ass. *Carpinus betulis-Quercetum roboris*). The nest was on the border of the stand close to a poplar plantation, near the state border between Yugoslavia and Hungary, more than two kilometres to the west of the village Bački Breg (UTM CR38). One individual of unknown age flew out of the nest, and three Black Storks in juvenile plumage were on a branch in front of the nest. These individuals did not fly away, even on my nearest approach. From that I assumed that they were hatched there. Under a tree there was a circle of fresh excrements.

Three questions are important in this case: 1) why breeding started so late, 2) whether this number of reared juveniles is usual for Black Storks in Serbia, and 3) where the adults found enough food for their

young, considering the unfavourable weather conditions in 2000?

This is the only known case of extremely late, but successful breeding of Black Stork in Serbia. There are other records of incubation starting at the end of June, but it is not known whether the breeding was successful or not (CRAMP & SIMMONS 1977). If the juveniles were about 70 days old, they hatched between July 16th and 24th, and incubation of eggs started between June 12th and 14th. Incubation usually starts in mid-April, and lasts 35-36 days. Young birds stay in the nest for 63-71 days after hatching (CRAMP & SIMMONS 1977). In Voivodina, egg laying takes place in the second half of April, hatching of young in early June, and the nest is vacated in late July or early August (PUZOVIĆ *et al.* 1989). It is possible that this breeding was started so late because the birds were disturbed by the presence of humans. In such cases, Black Storks could build a new nest (KALOCSA 1996). It is also possible that the breeding was repeated, but there is no evidence for that.

The number of juveniles (3 or maybe 4) in this case is higher than the average for Black Storks in Voivodina. In Apatinski rit floodplain during the 1970's breeding success was 2.6 juveniles per nest (LAKATOŠ 1979), the same as the breeding success at Obedska bara wetland in southern Voivodina during a five-year study (PUZOVIĆ *et al.* 1989). It is interesting that the average number of juveniles per nest in 2000 in the alluvial forests of Gemenc in Hungary (some 20 km north from reserve) were the largest in the last decade - 4,05 (KALOCSA & TAMAS 2001).

The whole of Serbia in 2000 was unusually warm, with minimal precipitation. According to information from the Weather Bureau of Serbia, at the nearest meteorological station in Sombor, the median temperature for the year was 12.8°C, and the total precipitation just 277.5 mm. By comparison, in the period between 1961 and 2000, at the same station, the median annual temperature was 10.6°C, and the total precipitation per year, 583.5 mm. Shallow depressions in the abandoned fishpond at Labudnjača, the most important feeding site of local Black Storks in Karapandža, were completely dry. Therefore, it is not

clear where the adults found enough food for raising three young.

For many other wetland birds with similar ecology, the whole breeding activity depends on feeding sites with enough food. Years with more precipitation are known to be more favourable for reproduction of White Storks *Ciconia ciconia*. Such conditions offer abundant food supply in eutrophic swamps and meadows, which are the main feeding places of this species in south-eastern Voivodina (RAŠAJSKI 1989). An optimal source of food makes it possible for White Storks to rear more juveniles (DELIĆ & MATIJEVIĆ 1989). In contrast, other authors have found a negative correlation between precipitation in the breeding season and the number of reared juveniles (BERT & LORENZI 1999). There is just one confirmed case of extremely late breeding of White Stork in Vojvodina. On September 12th 1980, two nestlings were observed in the village of Nikolinci, in southeastern Banat region, but the reasons were not determined (RAŠAJSKI 1989).

HAM (1977) concluded that the beginning of the breeding period in four heron species (Night Heron *Nycticorax nycticorax*, Squacco Heron *Ardeola ralloides*, Grey Heron *Ardea cinerea* and Little Egret *Egretta garzetta*) in a mixed colony at the mouth of the Begej in the Tisa (central Voivodina) correlated with suitable water regime.

Based on the available data, it is difficult to conclude what the main reason was for such late, but successful breeding of Black Stork.

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Summary

In Karapandža forest, in northwestern Voivodina, a nest of Black Stork *Ciconia nigra* was discovered on September 23th 2000. One individual of unknown age flew out and three juveniles were on branch in front of the nest. If the juveniles were about 70 days old, they hatched between July 16th and 24th, and incubation of eggs started between June 12th and 14th. This is the only documented case for such late breeding of Black Storks in Serbia, but the reasons for it are not clear.

Povzetek

V gozdu Karapandža (SZ Vojvodina) je bilo 23.9.2000 najdeno gnezdo črne štokrlje *Ciconia nigra*. Ob odkritju je osebek neznane starosti zletel iz gnezda, medtem ko

so bili ob gnezdu na vejah opazovani trije juvenilni osebeki. Avtor sklepa, da so se mladiči v primeru, da so bili ob odkritju stari okoli 70 dni, izvalili med 16. in 24. julijem, samica pa je začela valiti med 12. in 14. junijem. To je doslej edino dokumentirano pozno gnezdenje črne štokrlje v Srbiji, vzroki zanj pa še vedno niso znani.

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IZ ORNITOLOŠKE BELEŽNICE

From the ornithological notebook

SLOVENIJA / SLOVENIA

BOBNARICA *Botaurus stellaris*

Great Bittern – 1 (one) individual wintering at Cerknjiško jezero (UTM VL56, C Slovenia) on January 20th 2002; a rare winter record for the area, where it presumably breeds

Mrzlega (okoli -5°C) in jasnega popoldneva 20.1.2002 sem se odpravil na družinski sprehod ob Cerknjiškem jezeru. Ko sva po zamrznjenih, poplavljenih območjih s sinom Jackom kar po čevljih pridrsala do brega Stržena, južno od Gorice, je iz trstičja na drugem bregu zletela velika svetlo rjava ptica - bobnarica. Pograbila sva vsak svoj daljnogled in nekaj časa sledila njenemu mirnemu poletu nad trstičjem. Potem ko se je oddaljila za kakih 200 metrov, je ponovno pristala v trstičju. Na Cerknjiškem jezeru ima bobnarica status verjetne gnezdilke [POLAK, S. (1993): Ptice gnezdilke Cerknjiškega jezera in bližnje okolice. *Acrocephalus* 14 (56-57): 32-62], zimsko pojavljanje pa je redko [KMECL, P. & K. RIŽNER (1993): Pregled vodnih ptic in ujed Cerknjiškega jezera; spremljanje številčnosti s poudarkom na preletu in prezimovanju. *Acrocephalus* 14 (56-57): 4-31]. Tudi sicer so zimska opazovanja bobnarice v Sloveniji redek pojav [SOVINČ, A. (1994): Zimski ornitološki atlas Slovenije. Tehniška založba Slovenije, Ljubljana].

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RJAVA ČAPLJA *Ardea purpurea*

Purple Heron – observation of immature individual at Vrbje fishpond on July 17th 2001 (UTM WM12, NE Slovenia)

Dne 17.7.2001 sem se s prijateljem odpravil k ribniku Vrbje. Že ob prvem pogledu na ribnik sva zagledala tri velike bele čaplje *Egretta alba*, ki so posedale po drevju. Med opazovanjem je nad rogoz *Typha* sp. priletela rjava ptica. Sprva sva domnevala, da gre za čapljico. Kasneje se nama je približala na 30 metrov in se usedla na vejo nad vodo. Takrat sva ugotovila, da ne gre za čapljico, ampak za mladosten primerek rjave čaplje.

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MALA BELA ČAPLJA *Egretta garzetta*

Little Egret – Little Egret and Black-headed Gull *Larus ridibundus* are rare species at Vonarsko jezero near the Sotla river (UTM WM41, E Slovenia). They

occur irregularly after rains when the lake is filled with water. On April 25th 2002, 3 Little Egrets and 87 Black-headed Gulls were observed there.

Dne 25.4.2002 sem prešteval sive čaplje *Ardea cinerea* na območju Vonarskega jezera, kjer tudi gnezdi. Po končanem štetju sem pregledal še samo jezero, ki je bilo zaradi dežja tokrat poplavljeno. Na robu jezera sem med poplavljenimi grmi zagledal tri (3) bele čaplje in ko sem se jim nekoliko približal, sem ugotovil, da opazujem male bele čaplje. Predstavnike te vrste opazujem na tem območju večkrat letno, praviloma ob Sotli ali v plitvi, razliti vodi Sotle, kadar dežuje. Nekajkrat pa so se male bele čaplje usedle tudi na drevesa, kjer gnezdi sive čaplje, kar je vsekakor zanimivo, a žal tu ne gnezdi. Čaplje so brodirale po vodi in se prehranjevale. Med opazovanjem teh ptic, pa sem doživel še presenečenje. Iz smeri Podčetrka je priletela jata rečnih galebov *Larus ridibundus*. Niso se ustavili. Našel sem jih šele na veliki mlaki sredi poplavljenega travnika. Naštel sem jih nič manj kot 87.

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SRŠENAR *Pernis apivorus*

European Honey-buzzard – six individuals observed on June 28th 2002 at Mt. Golec (UTM VL07, SW Slovenia) circling above the meadows

Dne 28.6.2002 smo se z mladinsko ornitološko skupino, ki se je udeležila tabora "Dornberk 2002", odpravili na Golec nad Branikom. Po uri hoje smo prišli na planoto s prelepim razgled po okoliških dolinah in hribovih. Po kratkem postanku smo na višini 200 m zagledali ujedo, ki je bila po videzu podobna kanji. Po oglašanju smo sodili, da gre za sršenarja. Kmalu sta se mu pridružila še dva glasno oglašajoča se osebka. Čez čas so se izza hribovja začele dvigovati še tri ujede. Tako smo na koncu skupaj naštel kar šest osebkov sršenarja. Skupaj so nekaj časa krožili nad primorskimi travniki. Sršenar tukaj tudi gnezdi, toda še bolj kot to je bodlo v oči njihovo število, skupaj šest (6) osebkov. Zanimivo je namreč opazovanje kar treh parov te ujede v gnezditvenem obdobju na eni sami lokaliteti. V nekaj dneh naših opazovanj smo ugotovili, da sršenar v tem delu Slovenije niti ni tako redka ujeda. Od zanimivejših vrst smo opazili še dve smrdokavri *Upupa epops*, vrtnega strnada *Emberiza hortulana*, prepelico *Coturnix coturnix*, črno žolno *Dryocopus martius* ter škrjančarja *Falco subbuteo*.

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BELOGLAVI JASTREB *Gyps fulvus*

Griffon Vulture – observed on May 30th 2002 at 10.25 near Borovnica on Ljubljansko barje (UTM VL58, C Slovenia). The bird was attacked by a Common Buzzard *Buteo buteo* and two Northern Lapwings *Vanellus vanellus*.

Dne 30.5.2002, po obilnih nočnih padavinah, sem se peljal s prijatelji po stari cesti iz Ljubljane proti Vrhniki. Megla je še vedno obkrožala Ljubljansko kotlino, oblaki so bili nizko. Na trenutke so se pojavljale plohe. Ob 10.25 sem na križišču v Borovnici tako kot vedno pogledal v smeri Barja, kjer se je prav tedaj spreletavala kanja *Buteo buteo*. Ponavadi se trudim, da ne bi podcenjeval "banalnih kanj". Tokrat se je izkazalo, da ni bilo treba pogledati proti Barju, ampak na cesto pred avtomobilom. Tam je namreč pozornost mojega prijatelja privabila velika ptica. Zelo sem se začudil, ko sem ugotovil, da je slabih 50 m nad tlemi našo pot presekal beloglavi jastreb, ki je mirno letel proti Barju. Očitno pa je prestopil mejo zračnega prostora para prib *Vanellus vanellus*, ker sta ptici takoj vzleteli in poskušali otežiti prelet neznanca po tem zračnem koridorju. Tudi kanja ni ostala ravnodušna in se je pridružila paru prib. Toda trojica je bila videti prav zanikrno ob tistem ogromnem prišleku. Jastreb ni spremenil ne smeri ne višine leta in je počasi veslajoč s perutmi odletel proti Vnanjim Goricam (J, JV) ter se tako osvobodil nadležne družbe. Opisano opazovanje je po podatkih Lokalnega ornitološkega atlasa Ljubljanskega barja tretje za beloglavega jastreba na Ljubljanskem barju (TOME pisno).

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SOKOL SELEC *Falco peregrinus*

Peregrine Falcon – unsuccessfully attacking a Merlin *Falco columbarius* at Medvedce reservoir (UTM WM53, NE Slovenia) on January 26th 2002

Ob jutranjem hladu zime sem se 26.1.2002 odpravil na zadrževalnik Medvedce JV od Pragerskega. Tam me je že kmalu po prihodu presenetila majhna ujeda, saj me je preletela naravnost nad glavo. Medtem ko sem razmišljal, kaj razen malega sokola *Falco columbarius* bi to lahko bilo, se je ta usedel na bližnji daljnovid. Od neznano kod je nenadoma priletel odrasel sokol selec in se zapodil v malega sokola. Oba sem po nekaj vratolomnih letalnih mojstrovinah izgubil spred oči. Sokol selec se je kmalu vrnil, a brez plena.

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SOKOL PLENILEC *Falco cherrug*

Saker Falcon – 5th and 6th records for Slovenia: on October 5th 2000, 1 (one) individual seen preying on

Fieldfares *Turdus pilaris* between Bevke and Blatna Brezovica. On the same day, a Peregrine Falcon was observed at the same place, catching Wood Pigeons *Columba palumbus*. On December 8th 2000, a Saker Falcon captured a male Eurasian Sparrowhawk *Accipiter nisus* near river Iščica between Ig and Grmez (UTM VL69, Ljubljansko barje, C Slovenia).

Dne 5.11.2000 sva na poplavljenih travnikih, ki jih med Bevkami in Blatno Brezovico na Ljubljanskem barju ločujejo drevesne mejice, opazovala sokola med lovom brinovke *Turdus pilaris*. Ptica je bila velikosti sokola selca. Ko mu je brinovka pobegnila v grmovje pod jelšami, je sokol v hipu zavil skoraj navpično navzgor in nama pri tem pokazal ves hrbtni del telesa. Hrbet, ramena, trtica in osrednja repna peresa so bila svetlo rjave, oker barve. Peruti in robna repna peresa so bila temnejše rjava. Peruti so bile razmeroma široke, na koncih bolj zaokrožene in ne priostrene. Za ogled sokolove glave ni bilo časa, saj je ptica po tem manevru hitro odletela v smeri proti Vrhniki. Čez nekaj minut sva na istem mestu opazovala sokola selca *Falco peregrinus*, ki je lovil golobe grivarje *Columba palumbus*, in se prepričala, da je bil prej opazovani sokol vsekakor druga vrsta. Na podlagi opisanih značilnosti sklepava, da sva opazovala sokola plenilca. Na Ljubljanskem barju sva opazovala ptice tudi 8.12.2000 in sicer ob Iščici med Igom in Grmezom. Tukaj sva približno ob 14. uri na jasnem nebu opazovala, kako večja ujeda preganja manjšo. Prva je vztrajno zasledovala drugo, ki se ji je skušala izmuzniti z vrtoglavim letom. Za manjšo ujedo sva takoj vedela, da je samec skobca *Accipiter nisus*. Večja ujeda je imela značilno obliko sokola, po velikosti pa je bila nekje med sokolom selcem in kanjo. Ramena, hrbet in glavo je imela svetlo rjave, peščene barve. Na glavi ni bilo opaziti brka. Rep in peruti je imela malce temnejše rjave barve. Spodnja stran telesa je bila zelo svetla. Na podlagi teh značilnosti sklepava, da sva tudi tokrat opazovala sokola plenilca. Obe opazovanji je kot peto in šesto opazovanje potrdila Nacionalna komisija za redkosti [Božič, L. (2001): Poročilo Nacionalne komisije za redkosti o opazovanjih redkih vrst ptic za obdobje 1997-2000. *Acrocephalus* 22 (106-107): 109-113].

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KOSEC *Crex crex*

Corn Crake – new breeding site for Corn Crake in Slovenia at Vonarsko jezero (UTM WM41, E Slovenia). Altogether, three singing males were recorded in the year 2002 (May 31st to June 17th) in the meadow with *Solidago canadensis*, *Lythrum salicaria* and rare bushes *Salix* sp.

Dne 31.5.2002 sem v popoldanskem času "varoval" kolonijo sivih čapelj *Ardea cinerea* ob Vonarskem jezeru. Sive čaplje so bili namreč vzeli na muho nekateri ribiči –

lovci. Ker tokrat ni bilo opaziti nič sumljivega, sem se sprehodil naprej ob jezeru in nenadoma obstal, skrajno presenečen. Zaslíšal sem namreč značilno petje kosca *Crex crex*. Zapel je kakšnih 10 metrov stran, ura je bila 17.14, jaz pa sem samo nepremično stal in poslušal. Pel je na travniku, ki ni bil pokosen vsaj 10 let, velikem približno 0,5 x 1 km. Na tem travniku zdaj rastejo kanadska zlata rozga *Solidago canadensis*, navadna krvenka *Lythrum salicaria* in druge vlagoljubne rastline. Vse skupaj je posejano s posameznimi redkimi grmi vrbe *Salix* sp. Prvo nočno iskanje kosca (1.6.2002) je prineslo novo radost: tokrat sem poslušal kar tri kosce. Nazadnje sem jih obiskal 17.6.2002, ko sta pela samo dva. Zadnji datum bi naj tudi pomenil, da kosca tu verjetno gnezdit. Po raziskavah, opravljenih leta 1999 v Kozjanskem regijskem parku, je populacija kosca v parku ocenjena na 7 – 10 parov. [JANČAR T. & M. TREBUŠAK (2000): Ptice Kozjanskega regijskega parka. *Acrocephalus* 21 (100): 107 – 134]. Vonarsko jezero je tik nad vzhodno mejo Kozjanskega regijskega parka, zanimivo pa je, da kosca v prejšnjih letih nisem slišal. Edini podatek o gnezdenju te redke ptice na tem območju je spod peresa T. Ferlan s sod. [FERLAN T., M. VRANETIČ, A. SOVINČ & A. HUDOKLIN (1998): Popis kosca v Jovsih. *Acrocephalus* 19 (90 – 91): 147 – 151]. Kaže, da bo celotno Posotelje postalo kar zanimivo, če že ne pomembno območje za marsikatero ptičjo vrsto v Sloveniji. Posotelje in Kozjansko sta resda nerazviti območji, toda le v smislu industrije, ki je tu ni veliko. Z naravovarstvenega vidika pa je to izjemna prednost, saj je narava še vedno dokaj dobro ohranjena. Takšna območja bi bilo smiselno temeljito zavarovati.

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SLOKA *Scolopax rusticola*

Woodcock - another observation of displaying male in the breeding season near Osankarica 1200 m a.s.l. on June 22nd 2002 (UTM WM34, Pohorje Mts., NE Slovenia)

Dne 22.6.2002 sem se odpravil s sinom Jackom na Osankarico, da bi se ohladila v svežini pohorskih gozdov in obiskala svoja dobra znanca - triprstega detla in koonogega čuka. Temperatura na 1200 metrih nad morjem se ni veliko razlikovala od ljubljanske pripeke, saj je dosegla kar 31°C. Ko sva dočkala odhod sicer številnih turistov, sva prisluhnila večernemu ptičjemu oglašanju. Namesto prvih svojih glasov sva nad seboj zaslíšala oster žvižg sloke. Ker je bilo še vedno svetlo, sva brez težav opazila grobi obris s komično dolgim kljunom. Sloka je letela nad gozdno cesto, vodečo od Osankarice proti Šumikovemu vrhu. Še nekajkrat sva jo zaslíšala ob naslednjih preletih. Žal se niti enkrat ni oglašila s svojim zabavnim "smrčanjem". Tako so bila še enkrat potrjena opazovanja in domneve, da so visoka barja verjetno glavni gnezditveni habitat sloke v slovenskem predalpskem in alpskem prostoru [VREZEC, A. (2000): Sloka

Scolopax rusticola. *Acrocephalus* 21 (102-103): 278-279].

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REČNI GALEB *Larus ridibundus*

Black-headed Gull – breeding at Perniško jezero (UTM WM56, NE Slovenia) in 1993. This is the only known case of breeding Black-headed Gulls in the area of Slovenske gorice. Gulls bred on tree stumps jutting out of the water.

Pred skoraj desetimi leti, 17.6.1993, je na Perniškem jezeru v Pesniški dolini gnezdilo 5 parov rečnih galebov. Velika gnezda so si splekli na štorih, ki so moleli iz vode v začetnem delu jezera. Po mojih podatkih je bilo to edino gnezdenje rečnega galeba na tem območju dotlej, zanimivo pa je zaradi sicer maloštevilnih gnezdišč rečnega galeba pri nas. Dne 27. 4.1993 sem na Perniškem jezeru opazoval tudi parjenje navdanih čiger *Sterna hirundo*, njihovega gnezdenja pa kasneje nisem mogel potrditi.

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PEGASTA SOVA *Tyto alba* IN ČUK *Athene noctua*

Barn Owl & Little Owl – unique case of breeding Barn and Little Owls in the same building surrounded by large vineyards at Bilje hills (UTM UL98, SW Slovenia). Little Owl and Barn Owl were observed and heard on July 1st 2002. Near the building, 2 chicks of the Long-eared Owl *Asio otus* were also heard.

Dne 1.7.2002 se je naša skupina z ornitološkega tabora v Dornberku odpravila na Biljenske griče. Tam stoji stara hiša, ki jo z vseh strani obdajajo vinogradi na hribčkih. Hiša je že nekoliko razpadla in ponuja življenjski prostor mnogim živalim, tudi sovam. Okna so zakrta le s polkni, ki ponekod že razpadajo. Med opeko je veliko lukenj, ki so svojčas, ko so na podstrešju skladiščili seno, omogočale zračenje. Zelo prijazna gospa, ki živi v tej hiši, je zaupala kolegu Eriku, da v njeni hiši gnezdi velika sova. Med hojo po makadamski cesti, ki vodi k hiši, je Andrej na bližnjem kolu opazil silhueto, ki je spominjala na čuka. Kasneje smo slišali še njegovo oglašanje, tako da o tem, da imamo opraviti s čukom, ni bilo več dvoma. Usedli smo se na trato pred hišo, kjer stoji velik oreh, zraven oreha pa se razteza nekaj let star sadovnjak. Čuk je na naše presenečenje priletel prav kmalu, takoj zatem pa se je začela razburjeno oglašati pegasta sova. Na podstrešju hiše so se oglašali tudi mladiči, ki pa jih žal nismo znali določiti. Ker je čuk prinašal hrano (ko smo ga opazovali na približno 20 m razdalje, je imel hrano v kljunu), sklepam, da v isti stavbi gnezdi s pegasto sovo, kar je izjemna redkost, ki je nisem zasledil še nikjer. Ko smo odhajali, sta se okoli 200 m daleč oglašala še dva (2) mladiča

male uharice *Asio otus*. Ob odhodu je iz zidne luknje v hiši zletela še zelena žolna *Picus viridis*.

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VELIKI SKOVIK *Otus scops*

Eurasian Scops Owl – seven individuals responding to playback in the village of Lokvica near Opatje selo (UTM UL98, SW Slovenia) on June 26th 2002; some other night active birds also recorded in the vicinity: Nightjar *Caprimulgus europaeus* (13 ind.), Tawny Owl *Strix aluco* (1 ind.), and Little Owl *Athene noctua* (2 ind.)

Dne 29.6.2002 smo se pod vodstvom Andreja Figlja v večernih urah odpravili izzivat podhujke in sove v okolico Opatjega Sela. Ko smo se ustavili v Lokvici, smo poslušali, ali se že oglašata kak veliki skovik, a slišali nismo nič. Prižgali smo kasetofon s posnetkom oglašanja velikega skovika. Odzvalo se je kar sedem (7) osebkov. Očitno veliki skoviki tudi v JZ Sloveniji oblikujejo klicalne skupine, kar je bilo ugotovljeno tudi v SV Sloveniji, na Goričkem [STUMBERGER, B. (2000): Veliki skovik *Otus scops* na Goričkem. *Acrocephalus* 21 (98-99): 23-26]. Oglašali so se še približno 10 minut. Slišali smo tudi 13 podhujk *Caprimulgus europaeus*, eno (1) lesno sovo *Strix aluco* in dva (2) čuka *Athene noctua*.

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ZELENA ŽOLNA *Picus viridis*

Green Woodpecker – roost hole found in Mejerovo castle at Bilje (UTM UL98, SW Slovenia) on June 27th 2002. The bird made a hole in wooden shutters. This is rare and for Slovenia the first known case of a roost hole made by Green Woodpecker in the material of this kind.

Na ornitološkem taboru v Dornberku 2002 je naša skupina dobila nalogo popisati sove v cerkvenih zvonikih, starih gradovih in zapuščenih hišah. Dne 27.6.2002 smo se odpravili na stari dvorec Majerovo v Biljah. V primerjavi s prejšnjimi pregledanimi stavbami se nam je zdel dvorec veliko primernejši za te ptice. Ob 21.20 smo stopili na dvorišče in takoj opazili zeleno žolno, ki je zletela iz luknje v leseni žaluziji pred oknom v drugem nadstropju. V bližini smo jo opazili že jutraj. Luknjo je naredila žolna sama in v njej je najverjetneje tudi prenočevala. Do zdaj še nisem zasledil podatka, da bi si v Sloveniji zelena žolna naredila spalno duplo kar med leseno žaluzijo (polknom) in steklenim oknom. Sicer pa je znano, da žolne in še posebej detli občasno povzročajo materialno škodo na stanovanjskih objektih, ko med drugim luknjanjo fasade, hišna vrata in druge lesene dele hiš [RICHARZ, K., E. BEZZER & M. HORMANN (2001): Taschenbuch für Vogelschutz. AULA-

Verlag, Wiebelsheim]. Znani so le redki primeri, ki pričajo o prenočevanju žoln in detlov v takšnih luknjah. To seveda pomeni, da naš podatek ni pomemben in zanimiv le zaradi mesta, ki si ga je žolna izbrala za obdelavo, marveč tudi zato, ker v oknu tudi prenočuje.

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HRIBSKI ŠKRJANEC *Lullula arborea*

Wood Lark – three singing males observed at 0.30 hrs in the windy night of June 29th 2002 near Lokavec (UTM VL18, SW Slovenia)

Dne 29.6.2002 smo se v okviru ornitološkega tabora v Dornberku odpravili na Kucelj nad Ajdovščino. Naš namen je bil popisati kosce, ki smo jih jutraj slišali na travnikih bližnje Male gore. Zaradi močne burje je bilo popisovanje zelo oteženo. Prav zato tudi koscev nismo slišali. Na poti domov smo se ustavili v Lokavcu, da bi prisluhnili, ali se oglašata kaka sova. Namesto tega smo slišali tri (3) hribske škrjance, ki so peli po okoliški kulturni krajini. Ura je bila že pol enih ponoči in pihala je burja.

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MESTNA LASTOVKA *Delichon urbica*

House Martin – 94 nests found under the Solkan bridge (UTM UL99, SW Slovenia) on July 1st 2002; 13 nests were disintegrated. Martins were preyed on by Eurasian Sparrowhawk *Accipiter nisus*. In the nearby quarry, 3 nests belonging to Crag Martins *Hirundo rupestris* were also found.

Dne 1.7.2002 se je naša skupina pod vodstvom Jerneja Figlja v okviru mladinskega ornitološkega tabora "Dornberk 2002" ter projekta Ptica leta odpravila štet gnezda mestnih lastovk na solkanski most, ki povezuje Goriška Brda s Solkanom. Našteli smo jih 94, od tega 13 razpadlih. Med preštevanjem sem opazil, da so bili v nekaterih gnezdh žele veliki mladiči, v drugih pa še majhni, verjetno iz drugega legla. Vsa gnezda so bila na južni strani mosta, nameščena na vodovodnih ceveh pod mostom. Na njih so se zadrževali tudi domači golobi *Columba livia f. domestica*, ki prav tako gnezdijo na mostu (opazili smo mladiče). Očitno lastovke redno pleni skobec *Accipiter nisus*, kot smo se lahko prepričali nekaj dni prej. Ob tem naj še dodam, da smo uživali tudi v opazovanju skalnih lastovk *Hirundo rupestris*, ki gnezdijo v bližnjem kamnolomu. Našli smo 3 gnezda, pritrjena na stavbo.

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REPALJŠČICA *Saxicola rubetra*

Whinchat – five individuals observed on June 29th 2002 on the hill of Sv. Hieronim near Mt. Nanos

(UTM VL27, SW Slovenia), where these birds probably bred.

Dne 29.6.2002 smo se mladi ornitologi z ornitološkega tabora v Dornberku že zelo zgodaj zjutraj pod vodstvom Dominika Bombeka odpravili na Nanos. Kljub močnemu vetru, ki je pihal kar s hitrostjo 70 km/h, smo se peš odpravili na hrib Sv. Hieronim. Med potjo do vrha smo večkrat naleteli na repaljščice, po čemer smo sklepali, da tam tudi gnezdi. Tega dne smo opazili pet (5) repaljščic obeh spolov. Še posebej zanimiva je bila velika sinica *Parus major*, ki je jadrala v močnem vetru. Od omembe vrednih drugih vrst smo opazovali še skalnega strnada *Emberiza cia*, repnika *Carduelis cannabina* in rjavo cipo *Anthus campestris*, ki smo jo prepoznali s pomočjo priročnika.

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KRATKOPERUTI VRTNIK *Hippolais polyglotta*
Melodious Warbler – several observations of singing males in Vipavska dolina (UTM UL98, VL08, VL17, SW Slovenia): on June 29th 2002, 1 heard at Mlake near Vipava, 1 near Vogršček reservoir, 2 near Bukovica, and 2 on June 30th 2002 near Gradišče

Kratkoperuti vrtnik je v Vipavski dolini po navedbah Ornitološkega atlasa Slovenije dokaj pogosta vrsta [GEISTER, I. (1995): Ornitološki atlas Slovenije. DZS, Ljubljana]. S to ptico smo se večkrat srečali na ornitološkem taboru Dornberk 2002. Večan je predvsem na zaraščajoča se območja, gosto grmičevje in sestoje robinije *Robinia pseudacacia*. Dne 29.6.2002 smo slišali enega v Mlakah pri Vipavi, enega ob vzhodnem delu vodnega zadrževalnika Vogršček pri Črničah ter dva v vzhodnem delu Biljenskih gričev pri Bukovici. Dne 30.6.2002 sta dva osebka pela v Gradišču pri Vipavi. Naša opazovanja kažejo, da ta vrsta le ni tako pogosta, ampak da je v Vipavski dolini razširjena le posamič.

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DOLGOPRSTI PLEZALČEK *Certhia familiaris*
Eurasian Treecreeper – observation of some individuals in a mixed flock of Tits *Parus* spp. and Nuthatches *Sitta europaea* in small woodland near Črna vas at Ljubljansko barje (UTM VL69, C Slovenia) on December 29th 1998. 1 male was also singing. According to the Local ornithological atlas of Ljubljansko barje, this record happens to be the first for the area.

V zimskem času se mnoge ptice združujejo v jate, za sinice in brgleze pa je značilno, da se združujejo v manjše ali večje skupine in se potem družno klatijo naokoli ter stikajo za

hrano [SOVINC, A. (1994): Zimski ornitološki atlas Slovenije. Tehniška založba Slovenije, Ljubljana]. Včasih pa se v te skupine primešajo tudi druge vrste, kot naprimer dolgoprsti plezalček, ki ga zaradi velike podobnosti s kratkoprstim sorodnikom pozimi ločimo le s težavo, razen če se nas ptiček usmili in zapoje nekaj taktov svoje značilne pesmi. Dne 29.12.1998 sem se odpravil stikaj po goščah Ljubljanskega barja za morebitnimi prezimujočimi kozačami. Kozač sicer ni bilo, zato pa je bilo veliko drugih ptic. Barje je bilo takrat še precej zasneženo, kljub temu pa sem imel možnost opazovati prenekatero ptico, ki se na Barju večinoma pojavlja le v zimskem času: čopasto sinico *Parus cristatus* (1 os. v Kozlerjevi gošči), velikega srakoperja *Lanius excubitor* (1 os.), pinože *Fringilla montifringilla* (50 os.) in čizke *Carduelis spinus* (50 os.). Najbolj pa se mi je tistega dne v spomin vtisnilo opazovanje v gozdičku pri Črni vasi, kjer je pred nekaj leti prezimovala tudi kozača, ko sem opazoval manjšo klateško jatco brglezov *Sitta europaea*, dolgoprstih plezalčkov in velikih sinic *Parus major*. Plezalčki so bili precej svetli, kar je nekako namigovalo, da so dolgoprsti, vsakršen dvom o pravilni determinaciji pa se je razblinil ob poslušanju osebka, ki se je na mojo srečo potrudil zapeti. Za drevesne plezalčke je sicer znano, da lahko pojejo že pozimi (SOVINC 1994). Dolgoprsti plezalčki so sicer dokaj pogosti tudi na bližnjem Krimu, kratkoprsti pa le v nižjih legah. Po podatkih Lokalnega ornitološkega atlasa naj bi bilo opisano opazovanje prvi podatek o pojavljanju dolgoprstega plezalčka na Ljubljanskem barju (TOME pisno). Tej pisani družini so na vejah smrek družbo delali še rumenoglavci kraljički *Regulus regulus*.

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CROATIA / HRVAŠKA

ČAPLJICA *Ixobrychus minutus*
Little Bittern – remains of single individual, victim of Marsh Harrier *Circus aeruginosus*, found on April 29th 1999 by a small sinkhole pond near Gradina by Vela Luka (UTM XH45, Korčula, S Dalmatia)

V zaselku Gradina pri Veli Luki sva naletela na približno 10 × 10 m velik sladkovodni kal, pretežno prerasel z belo cvetočo vodno zlatico *Ranunculus* sp., subg. *Batrachium*. Sredi sicer zelo suhega območja je bil velikega pomena za ptice, saj so tja prihajale pit. Tistega dne, 29.4.1999, se je ob bregu sprehajal pikasti martinec *Tringa ochropus*, ob robu pa je čepel tudi rjavi lunj *Circus aeruginosus* s plenom v kljunu. Slednji je kmalu odletel s plenom vred, kateri ptici so pripadala peresa, ki so še ostala na tleh, pa sva lahko ugotovila šele po primerjavi s peresi iz študijske zbirke Ala Vrežca in Boruta Rubiniča. Šlo je za čapljico, na Korčuli zagotovo redko ptico zaradi habitata, ki je neprimeren zanjo.

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SOKOL SELEC *Falco peregrinus*

Peregrine Falcon – pair observed on May 8th 2001 on the islet of Sv. Andrija near Dubrovnik (UTM YH42, S Dalmatia). The presence of Peregrine Falcon had already been confirmed some 60 years ago by TUTMAN (1960), although he believed that these were only passing birds. Observation of the pair in the breeding season could be a sign of possible breeding on this small island with a very high cliff.

Dne 8.5.2001 sva z Alom Vrezcem s čolnom sredi razburkanega morja priplula do Sv. Andrije, na samem ležečega otočka dubrovniškega arhipelaga. Med preštevanjem gnezdil in selivcev ob počasnem kroženju okoli otoka sva z visoke navpične stene, ki se nad morje dviga na jugozahodnem delu, uzrla najprej enega, takoj za tem pa še drugega sokola. Kmalu sva ugotovila, da sta sokola selca. Po vedenju sodeč sta na Sv. Andriji tudi gnezdila. Dubrovniški ornitolog Ivan Tutman [TUTMAN, I. (1960): Nekoliko ornitoloških podatka s otočja Sv. Andrija kod Dubrovnika. Larus 14: 154-157], ki je otok obiskal dvakrat, prvič 19.9.1940 in drugič 1.10.1954, je na približno istem mestu ravno tako videl dva selca, a je sklepal, da tu ne gnezdita, saj sta odletela proti obali. Glede na visoko obmorsko pečino sklepam, da selca na otoku gnezdita.

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SREDOZEMSKI SOKOL *Falco eleonorae*

Eleonora's Falcon – one observed on April 28th 2002 at Kolan (UTM WJ08, Pag Island, N Dalmatia) flying over rocky walls suitable for its breeding. As the bird was later observed at the same place, the authors suspect that the bird possibly bred there later in the year.

Dne 28.4.2002 sva se peljala po stari cesti od mesta Pag proti Kolanu ob vznožju masiva z najvišjim vrhom Sv. Vid. Približno 5 km od mesta Pag sva se ustavila in pregledala skale. Kmalu je izza roba ene izmed pečin priletel vitek sokol z dolgimi zašiljenimi perutmi in dolgim repom. V letu ga ni bilo težavno prepoznati kot sredozemskega sokola. Pri enem kasnejših povsem naključnih postankov sva že s prostim očesom na vrhu skal zagledala silhueto čepečega sokola. Tudi ta je bil sredozemski, a tokrat sva si ga s teleskopom lahko ogledala na šolski način. Sredozemski sokol gnezdi zelo pozno, med avgustom in septembrom, na gnezdišča pa se vrne v aprilu! Zaradi primerne habitata za to vrsto možnosti gnezdenja na Pagu ne izključujeva.

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KOSEC *Crex crex*

Corn Crake – two singing males found on June 12th 2002 in small sinkhole overgrown with thick grass near the village of Dane in Čičarija (UTM VL34, Istra, SW Croatia)

Dne 12.6.2002 zvečer sem se lotil nočnega popisa ptic na Žbevnici v hrvaškem delu Čičarije. Žbevnica je ozka planota na kakih 1000 m nadmorske višine in del obsežnega travišča, ki sega tudi na slovensko stran z vrhovi Golič, Kavčič in Lipnik. Planota je med največjimi območji, poraslimi s travo v Istri, in kar nekako pričakoval sem, da bom tam slišal klepanje pričakovane vrste – kosca. Prehodil sem celotno planoto, skoraj do slovenske meje, a slišal sem le opolnoči pojočega hribskega škranca *Lullula arborea*. Nekoliko razočarano sem se vračal proti avtu, ko se mi je zazdelo, da slišim značilno klepanje. Razločno sem zaslišal ponavljajoči se "kreks-kreks", vendar nekje od daleč spodaj, kot da bi prihajal iz temnega čičarijskega borovega gozda. Pela sta najmanj dva osebka. Lokacijo sem si dobro zapomnil in si jo naslednji dan po spustu iz planote tudi ogledal. Našel sem kakih četr kvadratnega kilometra veliko vrtačo, na dnu poraslo z gosto travo. Vrtača ima lokalno ime Duboki dolac in je v neposredni bližini vasi Dane. Okoliške njive so ekstenzivno obdelane. Prav šokantna se mi je zdela razlika v razkošnih travnatih površinah na planoti in miniaturnem biotopu ob vasi – najbolj logičen odgovor je, da je planotno travišče za kosca prereditko.

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RUMENONOGI GALEB

Larus cachinnans michachellis

Yellow-legged Gull – aggressive behaviour by an adult female Yellow-legged Gull attacking a 3rd year individual of the same species at Lake Palud near Rovinj (UTM UK99) on May 13th 2001. The attacking gull was seen squeezing the victim's neck by its bill and pecking its eyes out. After some time of repetitive strangling movements and subsequent long-calls, the aggressor moved a few inches away. After moments of most aggressive behaviour, the attacker started to pull feathers out of the victim's head, and apparently a remorse-like behaviour followed. During my observation, the victim offered hardly any resistance at all and remained in a dead-like posture after aggression. The island is heavily frequented by local fishermen and tourist activities are very intensive in its vicinity.

Dne 13.5.2001 me je ob jezercu Palud pri Rovinju spremljal zelo lep in miren spomladanski dan, ki so ga tu in tam

prekinili le kratki, melodični napevi svilnic *Cettia cetti* iz obrežnega goščavja in dvozložno petje virginijskega kolina *Colinus virginianus*. Ne da bi vedel, kam vodi slabo prehojena stezica, sem po petih minutah dosegel morsko obrežje in z radostjo uzrl ne preveč oddaljen otoček, na videz kar gosto posejan z gnezdečimi rumenonogimi galebi. Ko sem skozi teleskop začel oprezati za morebitnimi zanimivostmi in samodejno prešteti zdaj odrasle galebe, zdaj še puhaste mladiče, mi je pogled nehote zastal ob grozljivem prizoru: odrasel rumenonogi galeb, po velikosti sodeč samica, je stal na drugem, 3.letnem galebu (3rdS) in ga izmenično daveče s kljunom stiskal za vrat ter kljuval v očesni jamici, iz katerih je že stekla vsa tekoča vsebina. Perje okoli izkljuvanih odprtin je bilo od krvi, ki je lila iz oči, na obeh straneh v širokem krogu obarvano svetlo rdeče. To početje je z očitnim srdom napadalni galeb nadaljeval še nekaj minut, nato pa stopil z zdaj že popolnoma izčrpane žrtve, začel objestno puliti travo okoli sebe, postavljajoče se korakati okoli napadenega galeba in se s posebno izraženo zavzetostjo oglašati z dolgimi klici. Napadeni galeb, vidno dotolčen in ležeč na trebuhu, je začel v presledkih šibkega sopenja spuščati glavo, ki se je zdela vse težja, in na koncu nepremično obstal. Po nekaj teatralnih ponovitvah klicanja in krožnega korakanja z vmesnim puljenjem trave so napadalčevi klici postajali vse skromnejši. Napadenega galeba je zdaj začel nalahno vleči za letalna peresa in perje na glavi, toda v njegovem vedenju je bilo opaziti nekaj, kar je spominjalo na človeško kesanje. Napadalec je še nekajkrat povlekel svojo žrtev za perje, nato pa odkorakal nekaj metrov v stran in se na videz popolnoma sprizadeto usedel na tla. Žrtev, že nekaj časa popolnoma sprizajnena s svojo neizogibno usodo, je ostala v poprej omenjeni pozi. Mnogi avtorji [npr. ŠTROMAR, L. (1967): Četiri godine prstenovanja galebova klaukavaca (*Larus argentatus* Pontopp.) na otočičima Mrkanu i Bobari. *Larus* 19: 133-144] namreč navajajo vzroke za agresivno vedenje v gnezdečih kolonijah galebov kot posledico nenehno ponavljajočih se motenj na gnezdiščih, ki jih razvijajoči turizem, tako kot tudi v bližini opazovanega dogodka, le še močno potencira ali pa sploh izzove.

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VELIKI SKOVIK *Otus scops*

Eurasian Scops Owl – one calling on a still, warm night of April 24th 2002 on Dugi otok (UTM VJ98, N Dalmatia) from the top of the slope of Stivanjska gora

Moja nočna naloga na študentskem taboru na Dugem otoku je bila pogledati za sovami, med drugim tudi za velikega skovika. Tako sem se 24.4.2002 odpravil na lov, in po kar dolgi poti sem zaslišal petje prvega in, kot se je izkazalo, tudi zadnjega velikega skovika. Pel je z vrha pobočja Stivanjske gore, ki se je končala s strmo steno proti morju. Poraslo je bilo z borovim gozdom in nizko makijo.

Skovika sem poskušal izzvati še drugje, a brez uspeha, kar je vsekakor zanimivo glede na visoke gostote, zabeležene na drugih območjih obmorske Hrvaške [VREZEC, A. (2001): The breeding density of Eurasian Scops Owl *Otus scops* in urban areas of Pelješac Peninsula in southern Dalmatia. *Acrocephalus* 22 (108): 149-154].

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KROKAR *Corvus corax*

Raven – one observed on April 25th 2002 near Pasjak Cove on Dugi otok (UTM VJ98, N Dalmatia) feeding on captured Glass Snake *Ophiosaurus apodus*

Na študentskem taboru na Dugem otoku v severni Dalmaciji sva se dne 25.4.2002 z Evo Vukelič na kolesih vračala s terena. Na enem izmed vzponov pri uvali Pasjak sva se nekoliko ustavila in se razgledala. Opazila sva krokarja, ki je kakšnih 70 metrov od naju pristal s plenom v kljunu. Krokarja pri obedu nisva motila ne midva ne rumenonoga galeba *Larus cachinnans* nedaleč proč. Odločila sva se, da se mu približava, a tudi ko sva bila le še 30 metrov oddaljena od njega, nisva mogla ugotoviti, za kakšen plen gre. Končno nas je imel krokar dovolj in je odletel. V tem trenutku sva jasno razločila ujetega blavorja *Ophiosaurus apodus*. Pozneje naju je krokar preletel še enkrat, tokrat z blavorjem, zavitim okrog kljuna.

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TRAVNIŠKI VRABEC *Passer hispaniolensis*

Spanish Sparrow – breeding on the island of Pag (N Dalmatia): on April 29th 2002, at least 30 pairs observed at Gajac (UTM VK92), where birds were building their nests under roof tiles. Another 5 nests found in the park of the town Pag, where nests were built in *Populus nigra* trees.

Prispevek o širjenju severozahodne meje gnezditvenega areala travniškega vrabca vzdolž jadranske obale [RUBINIČ, B. (2001): Širjenje severozahodne meje gnezditvenega areala travniškega vrabca *Passer hispaniolensis* vzdolž jadranske obale: kako se vede nova populacija v hrvaški Istri. *Acrocephalus* 22 (109): 207-211] naju je spodbudil, da objaviva podatka o gnezdenju travniškega vrabca na otoku Pagu. V počitniškem naselju Gajac so bili 29.4.2002 vsi opazovani vrabci travniški. Opazovala sva jih pri znašanju gnezd pod strešniki. Po grobi oceni gnezdi v naselju najmanj 30 parov. V mestu Pag pa sva v majhnem parku tik ob obali našla 5 visečih gnezd travniških vrabcev, in sicer v času, ko so jih ravno dokončevali. Vsa so zgradili na črnem topolu *Populus nigra*.

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BOSNIA & HERZEGOVINA/ BOSNA IN HERCEGOVINA

GREAT CRESTED GREBE *Podiceps cristatus*

Čopasti ponirek – na treh četrтинah vodne površine Buškega jezera (UTM XY63, Hercegovina) je bilo dne 9.6.2002 prešteti 523 osebkov. Glede na enakomerno razporeditev ptic se je na jezeru tega dne verjetno zadrževalo okoli 700 osebkov. Glede na habitat zaradi velikega nihanja vodne gladine vrsta verjetno tu ne gnezdi.

While taking a quick look through field glasses at Buško jezero (Hercegovina) on June 9th 2002, I noticed a large number of Great Crested Grebes in display plumage swimming either in pairs or in small groups on the lake's surface. From the spot near the village of Miši, I eventually surveyed, with a telescope, about three quarters of the lake. I counted no less than 532 individuals. Considering the fairly regular distribution of the grebes on the surface, I presumed that some 700 individuals frequented the lake on that particular day. In spite of the fact that they were mostly adults and that many swam in pairs, they did not breed there, presumably due to the lack of suitable breeding sites. Namely, the lake's shore is bare, and in view of this as well as of some visible signs of rapidly changing water surfaces it could be presumed that the water-level was being regulated at the nearby dam at short intervals. Great Crested Grebe stay quite late at their nest-sites and appear on their wintering grounds only in October or November [IL'ICHEV, V.D., ed. (1985): Handbuch der Vögel der Sowjetunion, Bd. 1. Gaviiformes, Podicipediformes, Procellariiformes, 1. Aufl. Wittenberg, Lutherstandt]. Considering this fact as well as my own observations at suitable places in Hercegovina (Svitavsko jezero, June 12th 2002, 110 pairs of Great Crested Grebes), it could be expected that the grebes would breed there at that time of the year. On Lake Constance in Germany, up to 2,500 pairs of Great Crested Grebes gather in summer flocks, but the breeding population still reaches 1,400 pairs on the very same lake [GÖNNER, C. (1999): Haubentacher – *Podiceps cristatus*. In: HEINE, G., H. JACOBY, H. LEUZINGER & H. STARK, (eds.): Die Vögel des Bodenseegebietes. Orn. Jh. Bad.-Württ. 14-15: 190-194]. The question of why such great number of sexually mature individuals gathered here - but did not breed on the lake owing to the unsuitable habitat as a result of the oscillating water-levels - thus remains unsolved.

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KOTORNA *Alectoris graeca*

Rock Partridge – a number of Rock Partridges calling at the foot of Mt. Sniježnica (1804 m a.s.l.) on the NW edge of the Sutjeska canyon (UTM CP10, SE

Bosnia) on April 15th 2002. The author observed a Peregrine Falcon *Falco peregrinus* attempting to capture one of the partridges.

Severozahodni rob kanjona Sutjeske straži Sniježnica (1804 m n.v.), slikovita gora, ki se strmo in v skalnatih kaskadah pne nad Sutjesko ter obenem povezuje gori Vučevo (1512 m n.v.) na severovzhodu ter Maglič (2386 m n.v.) na jugovzhodu. Dne 15.4.2002 sem stikal pod zahodnim ostenjem gore in ves čas je bilo slišati oglašanje velikega števila kotorn, ki so ostenja tudi pogosto preletele. Toda ob vrnitvi iz pragozda Peručica sem opazil, kako se je samica sokola selca *Falco peregrinus* zaganjala za kotorno, ki pa si je srečno našla zavetje v ozki skalni razpoki v stenah Sniježnice. Oglašanje sokoljega para sem zasledil nedaleč od omenjenega dogodka, in sicer s sten Vidikovca, kjer po vsej verjetnosti tudi gnezdi, saj se je svarilno oglašal v obeh dneh, ko sem se zadrževal ob vzhodu stene. Ob robu pragozda se je ravno tako iz smeri Vidikovca oglašal še planinski orel *Aquila chrysaetos*, ki je kasneje tudi zajadril proti Volujku (2396 m n.v.). Velja zabeležiti še omembo Miloša, lovskega čuvaja v Nacionalnem parku Sutjeska, da je kamenjarica, kot tu imenujejo kotorno, precej pogosta vrsta ptice v širšem območju kanjona Sutjeske.

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COMMON CRANE *Grus grus*

Žerjav – več opazovanj v Hercegovini med 6. in 9.3.2002: (1) 5 osebkov v bližini vasi Sajkovići (severni del Livanjskega polja, UTM XJ37), (2) 23 osebkov v Mostarskem blatu (UTM YJ10), (3) 10 osebkov blizu Karaotoka (Hutovo blato, UTM HY26), (4) 14 osebkov na vzhodnem obrežju Buškega jezera (UTM XJ63) in (5) okoli 50 osebkov v letu prek Biokova

During our three-day stay in Hercegovina between March 6th and 9th 2002, the three of us, i.e. B. Štumberger, M. Schneider-Jacoby and the author, were constantly accompanied by most capricious spring weather. The rare moments of spare time and the short stops on the way to our destination in Mostar were dedicated in full to the observation of migrants in this ornithological poorly known region. We were particularly surprised by a large number of Common Cranes observed in various wetlands on our way. For the first time we noticed them on March 6th in the northern part of Livanjsko polje near the village of Sajkovići, when five (5) individuals flew towards the northern and almost entirely inundated part of the field. On the following morning of rainy March 7th, we counted 23 individuals during a short survey of Mostarsko blato. The cranes were not in a closely-knit group but in four (4) groups with two (2) adults and one (1) second-year bird each (4 x 2 ad. +1 juv.), and in groups of three adults (3 ad.), two adults (2 ad.) and six (6) individuals whose age,

however, could not be determined. On March 9th, we observed Common Cranes at Hutovo blato: in the fields near Karaotok, ten (10) cranes, including two (2) second-year birds, were seen searching for food. Later on that day, two (2) more adults were observed in the meadows along the eastern shore of Buško jezero as well as separate groups of cranes (2 ad. + 1 juv., 2 ad. + 1 juv., 2 ad., 2 ind., 4 ind.), total 14 birds on the SE part of Livanjsko polje. A few days earlier, on March 3rd 2002, two flocks were seen flying over the Biokovo Mts. towards Sinjsko polje, Croatia (I. GABRIĆ pers. comm.). Reiser [REISER, O. (1939): Materialien zu einer Ornithologie der Balkanica, I. Bosnien und Herzegowina nebst Teilen von Serbien und Dalmatien, Wien] recorded several pairs of breeding Common Cranes at Livanjsko polje in 1896, 1899 and 1904. In the northern part of the field (which is owing to the clearly constant presence of these birds called Ždralovac blato, i.e. Crane Mire) he even found nests with eggs and chicks. They were in pairs as early as on March 23rd 1899, and he estimated the population at 8 pairs. In view of the fact that this largest karst polje in Europe, where large areas of bog have survived, is relatively well preserved, at least sporadic breeding of Common Cranes cannot be totally excluded.

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RED-RUMPED SWALLOW *Hirundo daurica*

Rdeča lastovka – več opazovanj gnezdečih parov v letu 2002 med obalnim in osrednjim delom Bosne in Hercegovine: en par v bližini mostu pri Neumu na jadranski obali (UTM YH15) 12.6. in 12.7.; dva para v bližini hidrocentrale Grabovica pri Jablanici (UTM YJ22); trije pari v bližini Ostrožca (UTM YJ24); in štiri pari ob Neretvi v vasi Bradina pri Konjicu (UTM YJ44)

The Red-rumped Swallow is Eumediterranean species breeding in dry and warm habitats, particularly in river valleys and canyons [CRAMP, S., ed. (1988): The Birds of the Western Palearctic, Vol. 5, Oxford]. Similar as the Cetti's Warbler *Cettia cetti*, Syrian Woodpecker *Dendrocopos syriacus* and Spanish Sparrow *Passer hispaniolensis*, it spreads from Asia Minor along the Balkan Peninsula and the Adriatic coast towards the north and northwest (CRAMP 1988). As far as Croatia is concerned, the bird had been until 1980 known to occur only in Southern Dalmatia, while more recently it has also colonised central and northern Dalmatia, the Kvarner and Istra [STIPČEVIĆ, M. (1988): Daurška lastavica, *Hirundo daurica rufula* Temminck 1835; novi podaci o gniježdenju u Hrvatskoj (Jugoslavija). Ornitologija u Hrvatskoj, JAZU, Zagreb] and as a breeder occurs even in Slovenia [MIHelič, T. (2000): Prva potrjena gnezditve rdeče lastovke *Hirundo daurica* v Sloveniji (Kraški rob, JZ Slovenija). Acrocephalus 21 (102-103): 261-263]. In Herzegovina, it was for the first time recorded as late as in 1976 at Hutovo blato. Later on, its nest-sites were discovered at Popovo polje (1978), in the

Neretva canyon up to Jablanica (1979), and in the Bregava valley (1980) [OBRATIL (1976 & 1980) In: STIPČEVIĆ, M. & G. LUKAČ (1991): Survey of spreading and breeding range changes of the Red-rumped Swallow (*Hirundo daurica*) in Yugoslav territory. Larus 43: 37-49]. In Herzegovina, I observed it for the first time on June 12th 2002. A pair was seen flying under and around the bridge on the Adriatic thoroughfare just before the centre of Neum. Here the pair clearly bred, for I observed, in the very same place, few more swallows – most probably a family with fledged young – a month later, i.e. on July 12th 2002. Pairs of Red-rumped Swallows were also seen along the Mostar-Sarajevo road running through the narrow Neretva canyon. I observed pairs and families deeper in the interior of the country as well, i.e. at the bridges crossing the river: 2 pairs near the Grabovica hydroelectric power plant in the vicinity of Jablanica, 1 family near Ostrožac, and 1 family near the bridge over the right tributary of the Neretva river some 3 km south of the village of Bradina near Konjic. The place of the last observation lies in the heart of Bosnia, where the impact of the Mediterranean climate along the Neretva valley is almost entirely lost.

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WALLCREEPER *Tichodroma muraria*

Skalni plezalček – trije osebkii v ostenjih doline Sutjeske v predelu kanjona Vrtar (650 m n.v.; UTM CP10, JV Bosna) 16.4.2002 v primernem gnezditvenem okolišju. Avtor je tu opazoval še jato 20 planinskih hudournikov *Tachymarpis melba* in par planinskih orlov *Aquila chrysaetos*.

While searching for the endemic plant species *Daphne malyana* in the crevasses of the Sutjeska rock walls (in the part of the canyon called Vrtar at approx. 650 m a.s.l.) on April 16th 2002, I was attracted by the characteristic fluttering of the Wallcreeper looking for food in the warm afternoon just a couple of metres above my head. While having a more thorough look at the rest of the walls above the right bank of the Sutjeska river, I saw two more Wallcreepers. On the same day, a flock of some 20 Alpine Swifts *Tachymarpis melba* flew over the canyon towards the north where the Sutjeska joins the Drina. Above the rocky slopes over the Sutjeska left bank – the slopes are situated in the Zelengora mountain chain and are overgrown with the stands of Scots pine – a pair of Golden Eagles *Aquila chrysaetos* was seen gliding virtually all day. The data on the Wallcreeper's breeding in Bosnia are scarce and, as far as NE Bosnia is concerned, completely unknown [HERNÁNDEZ, A., R. HAURI & M. SANIGA (1997): Wallcreeper *Tichodroma muraria*. p. 651 In: HAGEMAJER, W.J. & M.J. BLAIR, eds.: The EBCC Atlas of European Breeding Birds. T & AD Poyser, London].

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NORTHERN WHEATEAR *Oenanthe oenanthe*
& BLACK-EARED WHEATEAR *Oe. hispanica*

Kupčar & sredozemski kupčar – skupna gnezdišča obeh vrst odkrita 9. 6. 2002 na lokacijah v Hercegovini: eno v bližini vasi Petrovići (Duvanjsko polje, UTM XY83; 860 m n.v.), kjer sta obe vrsti najbrž gnezdili v naselju samem, in dve v bližini vasi Prolog (Livanjsko polje, UTM XY45; 700 m n.v.), kjer sta bili vrsti, ki sta kazali gnezditveno vedenje, opaženi na kupu izkopanin.

The Black-eared Wheatear also inhabits places in the interior of the Balkans exposed to the Mediterranean climate. The species is thus no rarity in thermophilous and with rocks strewn dry grassland in Dalmatian hinterland and Herzegovina. At Duvanjsko polje near Tomislavgrad in Herzegovina, I observed two males; they were also common around the nearby Posušje, where I saw them even around houses in the very centre of this small town. I had a chance to see a male in the SW part of Livanjsko polje as well. Apart from Black-eared Wheatears, Northern Wheatears were also observed; both species displayed breeding behaviour, either with agitated warning calls or food in their bills, while the date of these observations, i.e. June 9th 2002, can only speak in favour of this fact. The first "pair" of males of both species was observed in dry, rocky meadows rising above Duvanjsko polje, in the hamlet of Petrovići on the extreme southern edge of Duvanjsko polje. The more or less untimorous wheatears, which were obviously used to human presence, bred virtually in the middle of somewhat desolate hamlet. More unusual seemed the nest-site of the other wheatear community at Livanjsko polje. Along the road near the village of Prolog I chanced upon a kind of a mine and caught sight, on some 10 metres high heap of dark excavated material, of an agitated Black-eared Wheatear male. As soon as I stopped, a Northern Wheatear male with food in its bill appeared on the ground near a large excavation hole. I also saw fledged young of the Black-eared Wheatear species. The observation spot neighbours on grassy and in some places rocky karst polje surrounded by thermophilous sub-Mediterranean forests of White Oak and Manna Ash. In the vicinity of Prolog, the Northern Wheatear had also been observed by Reiser [REISER, O. (1939): Materialien zu einer Ornithologie der Balkanica, I. Bosnien und Herzegovina, Wien] where, however, he made no record of the Black-eared Wheatear, in contrast to a number of places in Herzegovina (in the vicinity of Orašac near Knjaževac and in different places around Trebinje), where he registered both species breeding side by side, the same as Rucner [RUCNER, D. (1998): Ptice hrvatske obale Jadrana. Hrvatski prirodoslovni muzej, Ministarstvo razvitka i obnove, Zagreb] who saw them breeding together near Tulove grede, on Biokovo Mts. and at Kamešnica in Dalmatia (all these nest-sites lie at altitudes between 400 and 1500 m a.s.l.). As he recorded breeding wheatears also at Sinjsko polje (300 m a.s.l.) and Vrličko polje (360 m a.s.l.), we may say that the

breeding at the more or less neighbouring Duvanjsko polje (860 m a.s.l.) and Livanjsko polje (700 m a.s.l.) has been expected, especially owing to their somewhat higher altitude.

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YELLOW-BILLED CHOUGH

Pyrhocorax graculus

Planinska kavka – jata več kot 50 osebkov v središču Mostarja dne 7.3.2002: posamezni pari in slobodni obiskujejo, pregledujejo in izginjajo v luknjah granatnih izstrelkov in nišah vrh nenaseljenih blokov (UTM YJ20, Hercegovina)

On March 7th 2002 I observed, together with the participants of the international workshop on the lower Neretva valley, a group of at least 50 Yellow-billed Choughs in the centre of Mostar. The birds were flying from one building to another, looking for food. Some of them kept visiting, inspecting and disappearing in holes made by a number of projectiles and in niches at the top of the abandoned blocks of flats. After 14.30 hrs, the Choughs disappeared and were not noticed again that day, probably due to the vertical migration to their roost sites. The Yellow-billed Choughs regularly wintering in Mostar had already been described by Reiser [REISER, O. (1939): Ornithologie der Balkanica, I. Bosnien und Herzegovina. Annalen des naturhistorischen Museums, Wien]. The tradition of these birds wintering in Mostar at an altitude of no more than 59 metres has thus been known since at least 1893. Although the Yellow-billed Choughs have not been known to breed in Mostar, I suspect that the behaviour of separate individuals and pairs visiting the town's buildings is reminiscent of the birds' inspection of potential breeding sites [GLUTZ VON BLOTZHEIM, U.N. (1993): Handbuch der Vögel Mitteleuropas. Bd. 13, Passeriformes – Teil 4. Aula-Verlag, Wiesbaden].

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ČRNOGLAVI STRNAD *Emberiza melanocephala*

Black-headed Bunting – 56 singing males counted from the car at low speed (30 km/h) along 21 km long road stretch in some 200 metres wide belt between Hutovo and Ravne (UTM YH35, Popovo polje, S Herzegovina) on June 12th 2002, when the following species were also observed: 5 pairs of Black-eared Wheatears *Oenanthe hispanica*, 3 pairs of Corn Buntings *Miliaria calandra*, 20 Rock Doves *Columba livia*, 20 Alpine Swifts *Tachymarptis melba*, 2 singing Blue Rock Thrush *Monticola solitarius* males, 1 Western Rock Nuthatch *Sitta neumayer*, and 1 singing Olivaceous Warbler *Hippolais pallida* male.

Čeprav sem vedel, da Popovo polje v južni Hercegovini bolj kot po svoji dolžini in velikosti (146 km²) slovi po eni največjih nepremišljenosti pri posegih v naravo, sem se 12.6.2002 vendarle odpravil na znamenito polje. Že prej pa sem si ogledal v betonski kanal ujeta strugo Trebišnjice - zdaj teče skozi mnoga minska polja - grozečo ostalino nedavne vojne. Najbolj opazne ptice, ki so vsepovsod prepevale svojo melodično pesem, so bili brezštevlni črnoglavci strnadi. Z avtomobilom sem jo pri približno 30 km/h ubiral po cesti od Hutova proti Ravnemu. Na teh 21 kilometrih sem naštel 56 črnoglavih strnadov, in to le v približno 200-metrskem obcestnem pasu. To dejstvo je črnoglavega strnada postavilo krepko na prvo mesto najštevilnejših vrst ptic, ki sem jih v svojem slabo uro trajajočem štetju iz avtomobila zasledil na Popovem polju. Vzdolž 21 kilometrov dolge poti sem naštel še pet (5) parov sredozemskih kupčarjev *Oenanthe hispanica*, tri (3) pare velikih strnadov *Miliaria calandria*, jato dvajsetih (20) skalnih golobov *Columba livia*, dvajset (20) planinskih hudournikov *Tachymarpis melba* in enega (1) bledega vrtnika *Hippolais pallida*. V razvalinah Ravnega sta pela skalni brglez *Sitta neumayer* in puščavec *Monticola solitarius*.

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CORN BUNTING *Miliaria calandria*

Veliki strnad – dne 9.3.2002 so se na kraških poljih Hercegovine (Duvanjsko, UTM XJ63, 864 m n.v., in Livanjsko, UTM XJ55, 710 m n.v.) spreletavali številni pojoči samci. Zvečer so na Livanjskem polju jate od 200 do 300 strnadov letele na prenočišču. Število opazovanih ptic v kombinaciji z visoko nadmorsko višino in zgodnjim datumom kaže na močne lokalne populacije. Na Livanjskem polju je v okviru pilotskih popisov dne 9.6.2002 prvo štetje velikih strnadov opravil Borut Rubinič, ko je na relaciji Livno – Prolog – Sajković v dolžini 39,7 km in v stometerskem pasu vzdolž cestišča naštel 126 pojočih samcev.

On March 9th 2002, I and my colleagues Martin Schneider-Jacoby and Borut Rubinič were travelling by car across the karst fields (poljes) of Hercegovina. In view of the altitude, date and behaviour of the Corn Buntings observed during the ride we wrote down the following details: (1) Duvanjsko polje (864 m a.s.l., Petrovići – Kolo section, three stops between 14.30 and 15.00 hrs) 1 male singing in the meadows opposite the village of Bukovica, (2) at Buško jezero (716 m a.s.l., Prisoje – Misi section, three stops between 15.30 and 16.10 hrs) 1 male singing in the pastures near the village of Misi, (3) at Livanjsko polje (710 m, Livno – D. Kazanci section, seven stops between 16.15 and 18.00 hrs) about 25 males singing. Here we noticed, just after the turning for Glamočko, a few groups of up to 20 buntings and a flock of some 200-300 birds flying in the direction of

Livno to their night quarters. Corn Bunting's large roost sites are known from the colder part of the year from the coastal part of Croatia [RUCNER, D. (1998): Ptice hrvatske obale Jadrana. Ministarstvo razvitka i obnove, Zagreb], while in spring the numbers of territorial buntings in Dalmatia hinterland begin to rise from mid-March onwards [e.g. MAŠTROVIĆ, A. (1942): Die Vögel des Küstenlandes Kroatiens. Band 1. Institut für angewandte Zoologie, Zagreb]. The earliest date about their spring migration from Sarajevo polje (central Bosnia) was March 22nd 1906 [REISER, O. (1939): Ornis balcanica. I., Bosnien und Herzegowina. Annalen des naturhistorischen Museums, Wien]. In spite of the fact that no research has been carried out in the karst poljes of Hercegovina, I believe that our observation of territorial Corn Buntings is early. In combination with the relatively high altitude, the number of territorial individuals and flocks of these birds flying to their roost site, indicates strong local populations, particularly at Livanjsko polje with 400 km² extensively farmed dry to wet grasslands. Namely, on the basis of the research carried out in the NE of Brandenburg in Germany, the greatest distances from which the buntings fly to their night quarters are max. 10 km, the median 2-5 km [FISHER & WATZKE (1996) In: GLUTZ VON BLOTZHEIM, U.N. (1997): Handbuch der Vögel Mitteleuropas. Bd. 14, Passeriformes – Teil 5. Aula-Verlag, Wiesbaden]. At Livanjsko polje, Corn Buntings were counted for the first time, within the framework of pilot surveys, by Borut Rubinič on June 9th 2002, who along the Livno – Prolog – Sajković route, at a length of 39.7 km and in some 100 m wide belt, registered 126 singing males. He carried out the survey in cloudy weather between 10.00 and 17.00 hrs.

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NOVE KNJIGE

New books

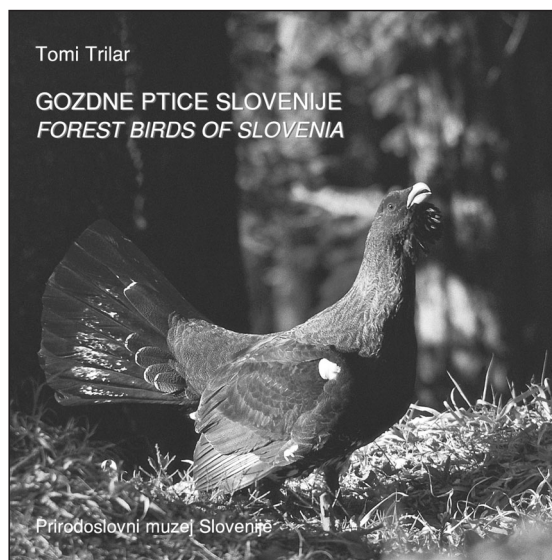
Trilar, T. (2002): Forest Birds of Slovenia. 2 CDs, Slovenian Museum of Natural History, Ljubljana. Recordings of 93 forest bird species and booklet with comments (in English and Slovenian languages). ISBN 961-6367-04-8. Buying: www2.pms-lj.si/cdgozd/english.html, Price: 30 EUR.

In 2002, a new CD by Trilar, his second now, was published by the Slovenian Museum of Natural History. This double CD is dedicated to Slovenia's forest birds, since forest is the most widespread habitat of birds in the country. All the recordings were made in Slovenia, with the exception of the Subalpine Warbler *Sylvia cantillans*, which was made in neighbouring Croatia.

The author has collected as many different vocalisations of birds as possible, e.g. territorial male song, contact calls, fledgling calls, etc. As every sound is well explained in the accompanied booklet, the recordings are easy to follow. The male song, which is usually used in territorial defence and as part of courtship behaviour, can vary markedly in some species of Passeriformes song birds, with a number of different song types, which can be very confusing for identification in the field. Tits are the best example in this respect. On the CD, the Great Tit *Parus major* is presented with four different song types, Blue Tit *P. caeruleus* with five, and Coal Tit *P. ater* with seven. These, however, are not the only song types used by these species but after careful listening to these recordings, the listener should also be able to identify other song types during a forest birdwatching trip. The most attractive recordings presented on the CD for me are those of Black Kite *Milvus migrans*, Capercaillie *Tetrao urogallus*, Woodcock *Scolopax rusticola*, and Three-toed Woodpecker *Picoides tridactylus*. The most valuable comparisons are those between the male songs of Stock Dove *Columba oenas* and Woodpigeon *C. palumbus*. With attentive listening, even less experienced birdwatchers will be able to distinguish between the songs of these two typical forest pigeon species.

The major problem in observing forest birds is the fact that we are better able to hear them than to see them. In most cases we can see them only for a short period of time, when they are flying through the canopies. But there is a group of birds for which even

these short sightings are rare, and which can be identified only on the basis of their voices - owls. Males of forest owl species call very loudly in the springtime, when defending their territories. The loudest among them are males of Tawny Owls *Strix aluco*. Individual birds can be distinguished, just as humans, in the way they vocalise. On the CD, there



are several different hootings of male Tawny Owls and, by listening carefully to them, even amateurs should be able to distinguish between them. But it is not only males who sing. The CD presents an excellent recording of a female song by Ural Owl *S. uralensis*, together with rare twittering calls by Ural Owls while copulating. The CD also provides the key to the problem in identifying fledgling calls of the two most widespread owls in Slovenia, the Tawny Owl and the Long-eared Owl *Asio otus*, which are common species around human settlements.

Finally, I would like to point out an important feature cited in the accompanying booklet. Under natural conditions, birds sing in a particular sound environment. So, the author has presented the background sounds as well, and described them in the booklet. Furthermore, the recordings of some birds that vocalise less frequently, such as Northern Goshawk *Accipiter gentilis*, Eurasian Sparrowhawk *A. nisus*, Hazel Grouse *Bonasa bonasia* and Ural Owl, were not shortened in order to cut out the breaks between calls. They were left unchanged with the aim of presenting them in the most authentic manner.

Al Vrezec

POPRAVEK

Corrigendum

V prejšnji številki *Acrocephalus* 23 (110-111): 27-33 je pri članku Luke Božiča **Zimsko štetje mokožev *Rallus aquaticus* v Sloveniji** prišlo pri postavitvi do napake v tabeli 1 (stran 29), kjer je izpadla zadnja kolona. Tabela 1 zato objavljamo še enkrat v popolni obliki.

In the previous issue of *Acrocephalus* 23 (110-111): 27-33, an error was made in the article **Winter census of the Water Rail *Rallus aquaticus* in Slovenia** by Luka Božič in Table 1 (page 29), where the last column was omitted. Below, Table 1 is again presented in full.

ZIMSKO ŠTETJE MOKOŽEV *Rallus aquaticus* V SLOVENIJIWinter census of the Water Rail *Rallus aquaticus* in Slovenia

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Tabela 1: Število popisanih mokožev *Rallus aquaticus* in izračunane linearne gostote (v oklepaju; osebk / km) na studenčnicah pri Ptujju na posameznih popisnih odsekih v treh zimah. V zbirni vrstici je povprečna linerana gostota (\pm SD) v vsaki zimi.

Table 1: Numbers of the surveyed Water Rails *Rallus aquaticus* and their estimated linear densities (in brackets; individuals per km) at Hajdinska and Turniška studenčnica (spring waters) at separate count sections in the three winters, with average linear density (\pm SD) in each winter at the bottom.

	Hajdinska studenčnica			Turniška studenčnica		
	1998/99 28.12.	1999/2000 27.12.	2000/01 7., 9. in 11.1.	1998/99 29.12. / 15.1.	1999/2000 29.12.	2000/01 7.1.
odsek 1 / segment 1	0 (0)	-	-	3/3 (6/6)	2 (4)	2 (4)
odsek 2 / segment 2	4 (2,7)	4 (2,7)	2 (1,3)	8/2 (4/1)	3 (1,5)	5 (2,5)
odsek 3 / segment 3	14 (10)	14 (10)	10 (7,1)	9/0 (4,7/0)	0 (0)	0 (0)
odsek 4 / segment 4	14 (5,6)	13 (5,2)	17 (6,8)	5/4 (5,6/4,4)	4 (4,4)	3 (3,3)
odsek 5 / segment 5	12 (12)	5 (5)	9 (9)	-	3 (2,3)	2 (1,5)
odsek 6 / segment 6	11 (11)	11 (11)	8 (8)	0/0 (0/0)	0 (0)	0 (0)
Skupaj / Total	55 (6,9 \pm 4,9)	47 (6,8 \pm 3,6)	46 (6,4 \pm 3,0)	25 (4,1 \pm 2,4)/ 9 (2,3 \pm 1,7)	12 (2,0 \pm 1,9)	12 (1,9 \pm 1,7)



Svoboden kot ptica.

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