Indeksirana resnica

The Indexed Truth

Biotska raznovrstnost (ali biodiverziteta) je ključna za življenje na Zemlji. To je preprosta in očitna resnica. Vsi dokazi kažejo na to, da smo priča tako imenovanemu šestemu izumiranju vrst na Zemlji. Že leta 1993 je E.O. Wilson, biolog z univerze Harvard, ocenil, da na leto izumre približno 30,000 vrst, ali natančneje, če želite, tri vrste na uro. Tokratno izumiranje je nekoliko drugačno od prejšnjih petih. Peto ob koncu krede je, denimo, najverjetneje povzročil trk Zemlje z enim ali več bolidi iz vesolja. Šesto povzročajo pametne gole opice, z drugo besedo, mi. To izumiranje ima nekatere značilnosti. Spremlja ga preobrazba pokrajine, pretirano izkoriščanje drugih vrst, onesnaževanje in naseljevanje tujerodnih vrst. (Eldredge 1998)

Nekoliko težje kot ugotoviti, da je biotska raznovrstnost pomembna, je definirati, kaj biodiverziteta sploh je. Razmislek nam da precej presenetljiv rezultat: je vsa biotska spremenljivost od genov do ekosistemov. Sklep, ki iz tega nemudoma izhaja, je, da jo je v celoti zelo težko izmeriti. Primerjajte denimo genom neke bakterije in ekosisteme na ravni celine ali oceana. (Purvis & Hector 2000)

Politika je na tem mestu začela nekoliko prehitevati znanost. V letu 2001 so članice Evropske unije sprejele, na tako imenovanem Gothenburškem vrhu, strategijo trajnostnega razvoja Evropske unije. Eden izmed ciljev te strategije je eksplicitен: »Ustavitev zmanjševanja biotske raznovrstnosti v EU do leta 2010 in učinkovito prispevanje k znatnemu znižanju svetovne ravni zmanjševanja biodiverzitete do leta 2010« (Komisija evropskih skupnosti 2005). Politika se na tej stopnji ni spraševala, kako bomo ta upad izmerili. Tukaj je sicer možnih kar nekaj stranpoti. Logično je, da obstaja zadosti podatkov o velikih, redkih in markantnih živalih, vprašanje pa je, kako dobro predstavljajo cel ekosistem oziroma celotno biotsko raznovrstnost. Nasploh je težko poiskati posamezno krovno vrsto (angl. umbrella species), s katero bi merili ugodno ali neugodno stanje vrst v širšem smislu. Prav tako le malokatere raziskave sežejo prek meja ene države.

Logično je tudi, da ima pri merjenju upada biotske raznovrstnosti spremljanje populacije ptic osrednji pomen, tako iz znanstvenih kot praktičnih in političnih razlogov. Politiku je laže zagovarjati ukrepe za ohranitev slavca ali orla belorepca kot pa nekega neznatnega hrošča, ki ga poznajo le znanstveniki. Seveda pa ni vedno nujno, da so ptice najprimernejši znanilci stiske drugih taksonov na nekem območju. Primer: Če upada populacija vrtnega strnada, ali je morda problem na njegovem prezimovališču v Afriki, morebiti kje na poti ali pa resnično na gnezdiščih? Še en razlog je pomemben pri izboru ptic kot indikatorjev biodiverzitete: pozna jih na tisoče ljudi, ki so pripravljeni žrtvovati svoj prosti čas za njihovo spremljanje in zaščito.

»Ptičji« indikatorji morajo tako v grobem izpolnjevati dva kriterija: odsevati morajo spremembe v naravi in dati osnovo za logično razlago teh sprememb, prav tako pa morajo biti praktično izvedljivi na transnacionalni ravni celih kontinentov. Ne iščemo natančnih razlag za dvig ali upad posameznih vrst, ampak širok vpogled v populacijska dogajanja, izražen s preprosto številko, »indeksom«. Ni druge možnosti, da takšne indikatorje spremljajo prostovoljci, sicer bi bilo spremljanje predrago. Obenem pa to pomeni, da mora biti metoda spremljanja

preprosta in robustna. Tu lahko bolj ali manj zanemarimo zahtevne populacijske raziskave, ki jih lahko opravljajo samo strokovnjaki profesionalci, kar pa nikakor ne negira njihovega pomena na nekaterih drugih področjih. (Gregory 2006)

Zahtevne naloge razvoja bioindikatorjev, ki bodo v bistvu premoščali vrzel med znanostjo in politiko, se je lotil Evropski svet za cenzus ptic (EBCC; European Bird Census Council). Kot najboljša možna rešitev so se pokazali sestavljeni ptičji indeksi. Ključna zadeva pri teh indeksih pa je izbor vrst. Generalisti, kot sta ščinkavec in črnoglavka, nam lahko pokažejo obraten trend in zakrijejo siceršnje propadanje specialistov (pojav se imenuje biotska homogenizacija). Redke vrste, kot denimo čigra, lahko doživljajo preporod zaradi uspešnih, ozko usmerjenih interventnih akcij. Oboji nam kaj malo povedo o splošnem stanju okolja in narave. Nasprotna primera sta denimo belohrbti detel in poljski škrjanec, vsak s svojimi specifičnimi zahtevami. Pri sestavljenih indikatorjih je tako ključen izbor vrst, s katerim določamo, katero okolje nas pravzaprav zanima. V tem segmentu so sestavljeni ptičji indikatorji (in s tem indeksi) podobni borznim indeksom. (Gregory *et al.* 2003 & 2005)

V okviru Evropskega sveta za cenzus ptic (EBCC) so tako sprožili projekt Panevropska shema monitoringa pogostih ptic (PECBMS), ki združuje vso heterogeno paleto metodologij po posameznih državah in omogoča tudi enotno statistično obdelavo. Za nekatere države so že na voljo večdesetletni podatki. V načrtu je tudi podobna shema za ogrožene vrste in IBA-je. Prvi rezultati denimo kažejo, da so populacije gozdnih ptic v Evropi v plitkem upadu – ptice kmetijske krajine pa so po dolgem upadanju zdaj stabilne.

In kje smo pri spremljanju populacij ptic v Sloveniji? Povsem na začetku. Še pred nedavnim je na zemljevidu Evrope zijala bela lisa namesto Slovenije. V letu 2007 pa smo se na Društvu za opazovanje in proučevanje ptic Slovenije lotili prvega transektnega popisa 46 tetrad (kvadrat 2x2 km) v pretežno kmetijski krajini, v naslednjih letih pa imamo namen popis razširiti na ozemlje celotne države. Šele spremljanje v recimo 10 letih pa nam bo dalo prvi osnovni in kvantitativni vpogled, v katero smer so obrnjeni trendi populacij naših ptic. Odveč je pripomniti, kako pomemben je takšen podatek. Naj ta uvodnik izzveni tudi kot povabilo k udeležbi v tem velikem in pomembnem projektu.

Primož Kmecl

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Possibilities for fire as a management tool on Kras (SW Slovenia): a bird's perspective

Gozdni požar kot orodje upravljanja zemljišč na Krasu (JZ Slovenija): ptičja perspektiva

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The response of birds to wildfires in sub-Mediterranean areas and the possible use of fire as a nature management tool in Kras (SW Slovenia) is reviewed. In recent years the limestone region called Kras was forested with Austrian Pine *Pinus nigra* and became more and more overgrown by bushes and trees due to depopulation and land abandonment, which has made it more vulnerable to fire. The latter patterns in particular are occurring throughout the whole sub-Mediterranean area and are affecting bird diversity drastically. Bird mortality during fires is low. For the first few years after a fire the richness and abundance of bird species decrease, and the species composition turnover rate is very high, from open habitat species to scrubland species. However, birds will colonise the burned area only when there is a neighbouring source population. In addition, larger burned areas are colonised more quickly than smaller ones. It is assumed that many birds will emigrate, while a number of species will adapt their territory size, nesting and foraging behaviour to the changed habitat. The severity of the habitat alteration and the change in food availability affect bird population dynamics. Bird species composition changes in parallel with vegetation succession. The effects of different aspects of fire, such as the size of the burned area, fire intensity, fire frequency and burning season, are reviewed. There are still many gaps in our knowledge of bird responses to fire, such as bird emigration after fires. However the impact of fire on birds is apparently not always detrimental and can even have a positive effect on populations. We therefore emphasize the importance of the continuation of research into the possibilities of fire as a management tool.

Key words: birds, Aves, Karst, Slovenia, wildfire, prescribed fire, population dynamics
Ključne besede: ptice, Aves, Kras, Slovenija, požar, nadzorovani požar, populacijska dinamika

1. Introduction

Fire has influenced landscapes throughout the ages and all over the world. However, the severity of fires is dependent, among other factors, on the ecosystem and meteorological conditions. With the appearance of humans, fire frequency increased dramatically. The combination of human initiated fire and natural fires, such as those caused by lightning, can alter habitats dramatically.

In Europe the most fire-adapted biogeographical region is the Mediterranean basin. Kras, as a sub-Mediterranean region in Slovenia, is very sensitive to fires (Global Fire Initiative 2004). By the 15th century, Kras had been deforested by humans and sheep and was only covered by stones. Kras became overgrown again due to forestation of Austrian Pine *Pinus nigra* and natural vegetation (mainly oaks *Quercus* sp.) The depopulation of the countryside and the abandonment of pastures and meadows in

more recent decades accelerated the succession. The accumulation of woody material, like dry bushes and needles from Austrian Pine (so-called fuel), increases the chance of fire in Kras.

One of the methods of preventing wildfire is prescribed fire. Prescribed fire has already been used for a few centuries in Central Europe (Goldammer & Page 2000). It varies from burning garbage to burning large patches for agriculture. However with the increasing fear of fire, these practices disappeared. Nowadays prescribed burning is also suggested for nature conservation (Global Fire Initiative 2004). First of all, flammable fuel can be removed with smaller prescribed fires. Secondly, the destructiveness of fire can create new local habitats which can increase regional biodiversity (Moreira *et al.* 2003). Moreover, the increase of open areas could attract endangered open area birds such as Tawny Pipit *Anthus campestris* and Ortolan Bunting *Emberiza hortulana* (Pons & Bas 2005).

As a reaction to the awareness of using fire for conservation purposes, much research has been done on this phenomenon. This review will focus mainly on the consequences of fire for birds, with a special focus on the possibility of fire as a management tool on Kras. Only one report on birds in Slovenia takes a sub-Mediterranean ecosystem into account (Geister 1999), so we have included research from comparable ecosystems.

2. Study area

Kras is an area located in the southwest of Slovenia. It is divided between Italy and Slovenia and has a sub-Mediterranean climate. It is a limestone area and karstic phenomena exist in most parts, so that there is almost no surface water.

Kras supports a wide variety of vegetation types due to human management and exploitation. In former times most of it was covered by pastures and meadows but nowadays it is slowly becoming overgrown with scrub of a variety of species, depending on the local (and very variable) climate. Moreover, Kras is largely covered by Austrian Pine, which was planted in the 18th century by Austrians (Kranjc 1997).

Over the last six years, 15.5 ha on average of Primorska, the southwesteren province of Slovenia, was burned annually (Šipec *et al.* 2000, Šipec & Babic 2001, Šipec & Babic 2002, Šipec & Babic 2003, Šipec & Babic 2004, Šipec & Krupenko 2005). Although the burned area is a small percentage of the province, large parts, such as Snežnik and urban areas, are less fire-prone, while most wildfires occur in the dryer Kras region.

3. Fire as a management tool

Fire is a phenomenon full of possibilities for nature management, as can already be seen with wildfires. Factors like size, intensity, frequency and season can interact and have different individual effects and, further, can easily be adapted. A higher frequency of fires for instance can take the ecosystem back into succession (reviewed in Boerwinkel *et al.* 2004).

With the necessary experience and the right conditions, the intensity of a fire can be adapted with burning against (back fire) and with (head fire) the wind. The effects however are completely different. Back fires are known to be much hotter and go deeper into the ground, with detrimental effects for the litter layer, the seed banks and sheltering ground arthropods. The head fire, on the other hand, is used for burning the woody species, as they develop high temperatures in the upper flame ranges (up to 1000°C) and run fast through the vegetation, leaving the soil layer incompletely burned (reviewed in Boerwinkel *et al.* 2004). The burned area can vary, resulting from fires that create heterogeneity at the micro habitat scale to large fires at the landscape level (reviewed in Boerwinkel *et al.* 2004).

Another important factor which should be taken into account is the season in which burning occurs. On Karst for instance one can identify a dry and a wet season. The dry season will often result in hot fires, which burn everything, whilst the wet season results in less hot fires with less complete burns (reviewed in Boerwinkel *et al.* 2004).

All these factors can interact, producing different effects on the ecosystems. Another important factor is the amount of the fuel (e.g. dry wood, bushes, leaves etc.). The spatial heterogeneity in fuel will also give heterogeneity in fire intensity and burned area size (reviewed in Boerwinkel *et al.* 2004). However, one has to be very careful with fire and therefore guidelines are issued by many authorities (Nature Conservancy 2007).

4. Effect of fire on birds

4.1. Direct effect

The direct consequences of fire depend on the severity, uniformity and season of the burn (Kruse & Piehl

1986, Lehman & Allendorf 1989, Robbins & Myers 1992, Smith 2000). During the fire, mortality, fleeing, disorientation and even attraction can occur.

The mortality among adults is relatively low, as they can easily escape (Rotenberry *et al.* 1995, Finch *et al.* 1997, Smith 2000). However a fire during the breeding season has detrimental effects on nestlings and fledglings (Patton & Gordon 1995, Finch *et al.* 1997, Smith 2000). In other cases breeding success may be reduced due to reductions in food supply (Patton & Gordon 1995, Finch *et al.* 1997).

Another consequence is attraction. Swallows are known to hunt near the smoke as there are lots of insects, whilst raptors and scavengers may search for carcasses behind the fire (reviewed in Pons 2002).

4.2. Post-fire dynamics

Pons (2002) has already pointed out that the population dynamics after fires are mainly influenced by colonisation, emigration, site tenacity, philopatry, and local breeding success (Table 1). However, we must first examine how the bird community reacts to fire and try to explain this with the above mentioned population dynamics.

In the first or second year after stand replacing fires, several studies have found that there is a decline of bird abundance and species richness in Mediterranean shrubland and in several types of pine forest (Prodon *et al.* 1987, Pons & Prodon 1996, García 1997, Izhaki & Adar 1997, Smith 2000, Moreira *et al.* 2003). In the first years the turnover rate was also faster than in later years (Izhaki & Adar 1997). Izhaki & Adar (1997) found that, in a burned forest of Aleppo Pine *Pinus halepensis*, species richness increased when compared with the surrounding unburned areas. After the usual initial decline, there were different patterns for the species richness, varying from increase (Pons & Prodon 1996) to no change (Wilson *et al.* 1995, Artman *et al.* 2001) or even decrease (Pons 1999). One study even reports species richness and abundance higher than that of the surrounding unburned control habitats (Herrando *et al.* 2002a). Contrasting results have been found regarding seasonal variability, varying from low difference of species richness in burned areas (Izhaki & Adar 1997) to low species richness in winter but high in the breeding season (Herrando *et al.* 2002b). Depending on the vegetation type it is estimated that bird species composition and richness can recover after 1 year in dry grassland, some 15 years in a Cork Oak *Quercus suber* forest and probably around one century in a mature Evergreen Oak *Quercus ilex* forest (Prodon 1988).

Although it is assumed that, in parallel with the alteration of the habitat, the species composition also may change dramatically, Herrando *et al.* (2002a) found no temporal shift between the first and the sixth year after a fire. Moreira *et al.* (2003) suggest that the fire-created scrublands provide habitats for specialists that would otherwise be unavailable. Increasing numbers of insectivores (Izhaki & Adar 1997), granivorous and omnivorous bird species (Bendell 1974, Woinarski 1990) were found on the burned sites. The burned area can also be used as a hunting site for scavengers and birds of prey, because prey is more abundant or more exposed. However, forest species are also often still observed in the burned areas. With forest fires, ground-dwelling bird populations are likely to be affected by fires of any severity, whereas canopy dwelling populations may be unaffected by understory fires (Smith 2000). However these responses of bird communities to fire depend on the subsequent management, as the snags provide nest and foraging sites (Finch *et al.* 1997).

4.3. Colonisation

The colonisation of burned areas by birds is dependent upon both regional and local factors. On the local level, the nature of the pre-fire bird community (Wooller & Calver 1988, Pons & Prodon 1996), the post-fire habitat structure (Hobson & Schieck 1999) and the site tenacity of survivors (Pons *et al.* 2003a) are of importance as colonisation factors, while on the large scale the magnitude and proximity of population sources are important (Brotons *et al.* 2005). However, Brotons *et al.* (2005) suggest that local scale ecological processes may be more important than regional scale processes. Although, long distance colonisations are occasionally reported (Brotons *et al.* 2005), most colonisers are likely to come from neighbouring populations. Whenever abundance decreases, post-fire colonisation becomes less likely. Pons & Bas (2005) also reported biogeographical constraints on colonisation of new habitats created by fire.

Isolation and accessibility are important for re-colonisation of an area. For example, when a fire affects previous heavily forested areas, birds of open habitats would have difficulty in colonising the sites unless areas with similar habitats were nearby (Brotons *et al.* 2005). Habitat heterogeneity is an important factor (Dunning *et al.* 1992) as it enhances colonisation by open habitat

Table 1: Comparison of effects of fire on birds in Mediterranean habitats. It should be noted that the fire variables of area extent, intensity, frequency and season frequently interact and should not be considered individually, but be taken together when determining the overall effects on bird populations.

Tabela 1: Primerjava tabela učinkov ognja na ptice v sredozemskih habitatih. Parametrov požara (obseg, jakost, pogostost in obdobje leta) ne smemo obravnavati ločeno od ostalih ampak le njihov skupni (kombinirani) vpliv na populacije ptic.

	Short term trend/ Kratkoročni trend	Long term trend/ Dolgoročni trend	Site tenacity/ Vztrajanje na gnezdišču	Reproduction/ Razmnoževanje	Colonization/ Kolonizacija
Forest and shrubland birds/ Gozdne in grmovne ptice	populations decrease, but do not always become extinct/ populacije upadajo, vendar vedno ne izumrejo	populations increase, species richness does not decrease/ narašča, vrstna diverziteta ne upada	a low percentage survives in remnants of bushes and because of high food availability/ nizek procent preživi v ostankih grmovja zaradi dobre dostopnosti hrane	low reproduction due to less suitable habitat and behavioural change/ nizka produktivnost zaradi manj primernega habitata, kar je povezano s spremembami v obnašanju	no information available
Open habitat birds/ Ptice odprtih habitatov	increase/ narašča	decrease, species richness decreases/ upada, vrstna diverziteta prav tako upada	no information available/ ni podatkov	no information available/ ni podatkov	mostly local colonization, few examples of regional colonization/ večinoma lokalna, nekaj primerov regionalne kolonizacije
References	Izhaki & Adar 1997, Pons 1998, Pons & Bas 2005	Wilson *et al.* 1995, Artman *et al.* 2001, Pons 1999, Herrando *et al.* 2002a	Pons & Prodon 1996, Pons *et al.* 2003a	Herrando & Brotons 2002	Brotons *et al.* 2005, Pons & Bas 2005

continuation of Table 1 (right side) / nadaljevanje tabele 1 (desna stran)

Fire area extent/ Obseg požara	Fire intensity/ Jakost požara	Fire frequency/ Pogostost požara	Fire season/ Obdobje v letu
large burned areas affect forest and shrub bird diversity negatively / velika območja požara vplivajo negativno na diverziteto gozdnih in grmovnih ptic shrub birds are less negatively affected when small bushes remain in the larger burned area or when smaller areas of their habitat are burned/ ptice grmišč so manj prizadete, če na večjem pogorišču ostane manjše grmovje ali pa če so pogorišča manjša, sredi njihovega habitata the smaller the forest fragments remaining after a fire, the larger is the negative effect on forest birds/ gozdne ptice so bolj prizadete, če so fragmenti gozda po požaru manjši	more intensive wildfires are more detrimental than prescribed burning/ intenzivni gozdni požari so bolj škodljivi od načrtovanih požarov	fire frequency of once every 5 years can maintain the habitat of shrub birds/ pogostost požarov enkrat na pet let lahko ohranja habitat grmovnih ptic fire frequency of once every 15–29 years is maximal for maintaining the habitat of Grey Partridge *Perdix perdix*/ pogostost požarov enkrat v obdobju 15–29 let vzdržuje habitat jerebice *Perdix perdix*	fire during breeding season can be destructive/ ogenj med gnezdilno sezono je lahko destruktiven "Wet" seasons affect habitat (bushes) less and are better for shrubland birds like Grey Partridge/ požari med "mokrimi" sezonami so boljši za vrste grmiščnih habitatov (jerebica)
large, evenly burned areas favour open habitat birds/ velika enakomerno požgana pogorišča pozitivno vplivajo na ptice odprtih habitatov	no information available/ ni podatkov	fire frequency of not more than once every 20 years, necessary for maintaining the habitat of open habitat birds/ pogostost požarov enkrat na 20 let za vzdrževanje habitata ptic odprtih habitatov fire frequency of prescribed burning once every 1 to 7 years, coupled with additional grazing, maintains the habitat of open habitat birds/ pogostost požarov enkrat na 1–7 let nadzorovanih požarov z dodatno pašo za vzdrževanje habitatov ptic odprtih habitatov	fire during breeding season can be destructive/ ogenj med gnezdilno sezono je lahko destruktiven
Novoa *et al.* 1998, Moreiri *et al.* 2003, Herrando *et al.* 2003, Pons & Bas 2005	Pons *et al.* 2003a	Moreiri *et al.* 2003, Herrando *et al.* 2002a, Pons *et al.* 2003b	Smith 2000, Novoa *et al.* 1998

species, as well as scrubland species which still find refuge in the scrubby and forested habitats from which they can colonise the area (Herrando *et al.* 2003). These findings suggest that the landscape context is an important factor in colonisation of a site.

Post-fire habitat quality and spatial extent are important in determining the suitability of the burned areas for colonisation (Pons & Bas 2005). However, re-colonisation in an Allepo Pine forest was found to be strongly tied to plant succession (Izhaki & Adar 1997). Burned areas are regarded as second-choice habitats for scrubland species and more asymmetrical juveniles were found in burned areas than in unburned ones, although the origin of these juveniles was not known. The size of the burned areas is also important (Herrando & Brotons 2001). Larger burned areas have a higher probability of being discovered and of containing a suitable habitat. Large areas tend to have higher habitat diversity and, as a result, more bird species are able to find available niches (Pons & Bas 2005).

Birds re-colonised a burned Allepo Pine forest just 3 to 5 years after the fire (Izhaki & Adar 1997). The best colonisers of recently burned areas were generalists in terms of habitat structure (Pons & Bas 2005).

4.4. Emigration

The dispersal of birds after large fires has not been well investigated. Pons (2002) reported an increase of Sardinian Warbler *Sylvia melanocephala* at a ringing station two weeks after a huge fire 20 km away.

4.5. Site tenacity

Site tenacity here refers to local survival of the population. The plasticity of habitat use and nest selection by birds after an alteration of their habitat are mechanisms that allow site tenacity to occur (Winter & Best 1985, Brooker & Rowley 1991, Pons & Prodon 1996, Pons 2001, Pons *et al.* 2003a). Birds have been shown to exhibit these behaviours in several studies (reviewed in Smith 2000, Pons and Prodon 1996, Herrando *et al.* 2003). Site tenacity has been demonstrated especially for warblers with colour ringed birds (Pons *et al.* 2003a).

Furthermore it was observed that birds can demonstrate a larger variation of nest site selection (Winter & Best 1985, Brooker & Rowley 1991). Winter and Best (1985) found that, as a result of reduced cover after a fire, Sage Sparrows *Amphispiza belli* bred not only in bushes but also began breeding on the ground. However this has not yet been reported from a European ecosystem.

Among some feeding guilds, such as foliage dwelling birds, site tenacity is impossible where foliage is almost completely burned (Pons 2001). However for birds from other feeding guilds site tenacity is probably the reason why, immediately after a fire, there is no dramatic decrease in abundance of these birds, and post-fire effects are therefore probably delayed (Pons *et al.* 2003a).

4.6. Local reproduction

After a fire, it is found that some breeding populations decline dramatically. It is suggested that the cause is a decrease in the recruitment rate and an increase in the proportion of non-breeders.

The Dartford Warbler *Sylvia undata* is usually unable to breed in the first year after a severe fire (Prodon & Lebreton 1983, Prodon *et al.* 1987, López & Guitian 1988, Sgardelis & Margalis 1992, Herrando *et al.* 2002a). Pons *et al* (2003a) saw that two adults of this species which previously had territories, but were no longer territorially active. A similar case is described for the Red Grouse *Lagopus l. scoticus* (Watson 1985). On the other hand, Smith (2000) reported that nesting success in a post-fire habitat depends on the pre-fire quality. In another habitat type, the Rocky Mountains, most nesting birds used broken-topped snags which were already present before the fire (Hutto 1995, Smith 2000).

5. Habitat and fire

One of the most obvious effects of fires is habitat modification, which affects birds through changes in food supply, or changes in abundance of competitors and predators (Rotenberry *et al.* 1995). These effects may be especially important because many birds respond strongly to habitat features (MacArthur & MacArthur 1961, Koplin 1969, Lovejoy 1974, Tomoff 1974, Willson 1974, Power 1975, James & Warner 1982, Rotenberry 1985). Fires reduce or destroy the organic soil layer (Urbančič 2002) that contains the bulk of the soil fauna (Mršič 1997) and seeds.

Although large, intense burns greatly alter bird habitat in the short-term, they may be necessary for long-term maintenance of natural forest succession patterns of some forest types (Hejl *et al.* 1995, Hutto

1995). Plant species diversity on Kras is higher after fires (Batič 2001). Some insect- and plant-eating bird populations depend on such alterations in food and cover (Smith 2000). Prodon *et al.* (1987) showed that the recovery of bird populations in Mediterranean successions depended on how vegetation regenerated. Many species of deciduous trees and some shrub species in the sub-Mediterranean region show great ability to re-sprout from roots in the same season after a large fire (Batič 2001). Many oak species re-sprout after a fire and may recover quickly, even if top-kill occurs (Caprio & Zwolinski 1992, Barton 1995). Some oak species may need more sunlight than they would get in the shade of closed-canopy forests. Therefore, although fire may reduce the number of large oaks in the short-term, in the long-term, fire-created openings can be beneficial in maintaining oak as a landscape component (but see Barton 1995).

The herbaceous and shrub layer are one of the important components in the vegetation for birds in Maritime Pine *Pinus pinaster* stands (Moreira *et al.* 2003). After prescribed fire a modal growth occurred with maximum development of the herbaceous vegetation after ca. 3 years, and shrub development increased linearly with time after the fire. Five years after the fire, understory vegetation structure was similar to that in control plots (Moreira *et al.* 2003).

Besides food and cover changes, life history characteristics also influence the response of particular bird species to fire. Cavity-nesting birds, timber-drilling birds, granivores, and some flycatchers generally respond positively to burns in the short term because of increased nesting substrates, such as snags for cavities and foraging and nesting resources (Blackford 1955, Stoddard 1963, Koplin 1969, Bock & Lynch 1970, Kilgore 1971, Granholm 1982, Raphael *et al.* 1987, Hejl *et al.* 1995, Hutto 1995, Finch *et al.* 1997, Blondel & Aronson 1999, Jurč 2001). Habitat suitability for woodpeckers declines over time as snags fall and food resources decrease (Koplin 1969, Bock *et al.* 1978, Raphael *et al.* 1987, Finch *et al.* 1997).

Fire is a key mechanism of creating and maintaining habitat heterogeneity in Mediterranean landscapes, by turning continuous woody landscapes into mosaics of forest and shrubland (Herrando & Brotons 2002). Mediterranean landscapes periodically and frequently exposed to fires are characterized by a turnover of habitat types from grasslands to forests (Blondel & Aronson 1999) which replace each other in space and time like a "moving mosaic" (Moreira *et al.* 2001). Although fires reduce the cover of available habitat for Mediterranean forest bird species, they simultaneously create new landscapes where the remaining forest patches are suitable habitats for these species. However, the size of the forest patches is positively correlated with the species richness of the canopy birds, with the result that the patch size is important for promoting forest bird communities in Mediterranean landscapes (Herrando & Brotons 2002).

6. Food and fire

Although it is known that bird populations respond to changes in food availability (e.g. arthropods and seeds) caused by fire (Smith 2000, Moreira *et al.* 2003), not many studies deal with the direct relationship between the trend of bird populations and food availability in a post fire habitat (Herrando *et al.* 2005).

Fire causes a disastrous change in the composition of insect species and species richness (Moreira *et al.* 2003). Foliage insects, the main food source of insectivores in forested and bushy areas, decrease dramatically after wildfires (Swengel 2001, Herrando *et al.* 2005), although, in the unburned patches of bushes in the burned sites, foliage insect numbers were higher than in the adjacent unburned sites (Herrando *et al.* 2005). The loss of foliage insects was replaced by an increase in flying insects (Pons 1998, Herrando *et al.* 2005). Also for hunters of ground-dwelling insect species, like shrikes, there will probably be a decline, since important food sources, like carabid beetles and other ground dwelling insects, are drastically reduced (Swengel 2001, Cook & Holt 2005), although the population will never be reduced to zero (Swengel 2001). Colonisation of insects like carabid beetles occurred rapidly from underground and from long distances (Cook & Holt 2005). However the resilience of arthropods is likely to differ between different habitats.

Although arthropod availability appears to be important for bird populations, Herrando *et al.* (2005) found that it was still high enough to sustain the pre-fire number of birds and that the reason for the decrease in bird populations in the first few years after a fire was therefore due to something other than decrease in food availability.

In several habitat types, seed accessibility increased after the fire (Dean 1987, Woinarski 1990) and, in consequence, there is often an influx of seed eaters. Some tree species adapt to this situation; directly after a fire Aleppo Pine releases dark grey-brown seeds,

whereas late-disperse seeds are a yellowish colour (Saracino *et al.* 1997). The greyish seeds were found to be less predated by birds on ash grey background, produced by fire, than on pre-fire yellowish background (Saracino *et al.* 2004). Therefore it can be argued that if the birds are favoured by the increase in seed availability if some seeds are less visible due to an equal coloured background.

7. Effects of different fire variables

7.1. Area size

The size of a fire is highly important in influencing bird populations (Finch *et al.* 1997, Pons *et al.* 2003a). In the literature we found examples of small-scale fires (up to 18 ha) (Moreira *et al.* 2003, Pons & Bas 2005) and large-scale fires (more than 300 ha) (Herrando *et al.* 2003).

With small-scale fires the species abundance and species richness did not change dramatically (Moreira *et al.* 2003). In a mosaic landscape in the Pyrenees, the small size of the burned areas (patches of 0.9–16.5 ha) allowed habitat heterogeneity and high beta diversity, including both open habitat and forest species (Pons *et al.* 2003b).

For a ground dwelling bird, such as the Grey Partridge *Perdix perdix*, there should be cover in the surroundings and the area size should therefore not be large. Novoa *et al.* (1998) recommend a burned area of less than 5 ha, separated by patches of 10–15 ha.

On the other hand, large replacement fires exhibit a dramatic change in species composition from forest or scrubland species to those of open habitat (Pons & Bas 2005). As noted above, the larger burned areas may be more easily discovered and therefore more easily colonised (Brotons *et al.* 2005). However, bird diversity depends strongly on habitat heterogeneity within burned areas (Herrando 2001, Herrando *et al.* 2003, Pons *et al.* 2003b), which is a consequence of the spatial pattern of fire intensity.

7.2. Intensity

Only one study takes the effect of intensity of fire into account by comparing wet and dry fires, i.e. fires with high and low intensity (Novoa *et al.* 1998). Most wildfires have a greater intensity than prescribed burning, so we compare the differences between wildfires and prescribed burning as rather than intensity differences.

Novoa *et al.* (1998) found that Grey Partridges were more affected by the burning of brood habitat by dry fires than by wet fires. The habitat for nesting hens and nestlings contains a large cover of two vegetation layers providing protection against predators (0.05–0.25 m and 0.25–0.50 m), these suitable habitat recovers after more then eight years while the 3 week old broods, need less cover of shrubs and their habitat can therefore already recover after five or six years.

The local survival of some bird species tended to be more affected by wildfire than by prescribed burning (Pons *et al.* 2003a). Other studies had found that prescribed burning has a relatively low impact on bird communities (Bock & Bock 1983, Petersen & Best 1987, Pons 1998) – but see Robertson & Jarvis (2000). The replacement of shrubland by grassland does not always mean an increase in erosion (Garcia-Ruiz *et al.* 1996). Prescribed burning can be used to eliminate the aerial shrub layer without burning the grass, thus preventing erosion in mountain areas (Pons *et al.* 2003b).

On the other hand, stand replacement fires, which are often more intense, result in the pre-fire species being replaced by new species (Hutto 1995). In contrast, cool understory burns in forests have little effect on the canopy species composition (Horton & Mannan 1988).

7.3. Frequency

Only five studies considered the frequency of fires when studying at their effect on birds (Novoa *et al.* 1998, Herrando & Brotons 2002, Herrando *et al.* 2003, Moreira *et al.* 2003, Pons *et al.* 2003b).

At the landscape level, Herrando *et al.* (2003) suggest that the wildfire frequency should be approximately once 20 years. This is favourable for open habitat birds when there is a nearby population from where the burned area can be colonised.

The consequences of a fire in a Mediterranean landscape that affected mainly understory vegetation height and cover – an important feature for birds – were studied at the local level (Moreira *et al.* 2003). After five years the vegetation cover and bird abundance had recovered. For particular species the recovery time may be longer, for instance for the Grey Partridge the frequency of fires should not exceed one every 15–29 years (Novoa *et al.* 1998).

In Railleu, France, the preferred management for open habitats is a moderate burning of the shrubland

followed by cattle grazing, repeated at intervals of 1 to 7 years. This proved to be sustainable for the plant community (Rigolot *et al.* 2002) and beneficial for bird conservation (Pons *et al.* 2003b).

7.4. Time of the year

A spring fire during the breeding period is the most destructive for birds (Ward 1968, Erwin & Stasiak 1979, Smith 2000). Ground-nesting birds are especially vulnerable to spring fires (Smith 2000). Bird nest site selection, territory establishment and nesting, among others, can be affected by the season of fire (Smith 2000).

Birds can also be affected indirectly by the season of the fire. In areas with contrasting wet and dry seasons, as in Australia, the season of the fire can dramatically alter the bird community (Valentine *et al.* 2007). The season influences the intensity of the fire and therefore the post-fire habitat. On Kras, precipitation increases slightly in the second part of the year, but still reaches less than 200 mm a month (ARSO 2007). In this situation of very low precipitation throughout the year it would nevertheless be interesting if the seasons affected the post burned habitats differently.

8. Concluding remarks and discussion

Local populations can be affected severely by fire and may suffer from increased mortality and decreased reproduction and recruitment. Bird community succession is the result of an assembly of responses of species to a variety of environmental factors that go further than simple changes in the local habitat (Herrando & Brotons 2002, Herrando *et al.* 2003, Herrando *et al.* 2005). Bird populations often decline after scrubland fires, but decline may be offset by populations that rebound if the fire spread is patchy, leaving some areas unburned, and if species usually associated with grassland communities invade the burn (Smith 2000). The consequences of wildfires are not necessarily detrimental and can even enhance the bird diversity. Increases in the number of open area species and of species abundance have been reported. In southern Europe, burned areas appear to be very important for decreasing and vulnerable bird species (Prodon 1987, Pons & Bas 2005). Geister (1999) also found an increase in a few species that are declining in Europe in recently burned areas of Kras. Furthermore, fires usually help to maintain the open Mediterranean landscape.

Wildfires often exhibit completely different behaviour from that of prescribed fires. The latter are often less intense and have therefore less deleterious impact than wildfires. This has to be taken into consideration when comparing the value of the two. Furthermore most of the research reviewed here was carried out on a Mediterranean landscape, which has a long fire history. Kras has a sub-Mediterranean landscape that is sensitive to fire, although this disturbance does not occur regularly. Bird responses to fire are known to have biogeographical constraints.

Most of the impacts have been assessed by examining the situation found after a fire. Simple aspects of fire type, area or intensity are still poorly understood (but see Novoa 1999), although we have tried to assess them in this review. Within a wildfire these elements always interact and it therefore becomes difficult to draw firm conclusions. In addition, checks on the various aspects, pre-fire assessments and control measurements are often lacking. There is a need for a proper experimental design to address this problem.

In this review the underlying assumption has been made that the regenerated post-fire habitat is similar to the pre-fire habitat. Nowadays some plant species invade ecosystems and alter them by out competing native species. Burned areas can be perfect areas for invasion, due to a lack of natural enemies or biotic resistance. For example a North American tree, the False Acacia *Robinia pseudoacacia* is colonising certain areas in Slovenia and starting to dominate burned areas. It is therefore important to predict the responses of bird populations to such a habitat alteration.

Another gap in research relates to population dynamics and, in particular, the difficult study of emigration after a fire. Where do the birds go? Do they come back or is the population lost forever?

The need for proper management to recreate open areas and, by this, to increase the biodiversity of Kras, makes it important to take every possible management tool into account. Although fighting fire with fire is literally a hot topic, this review suggests that the consequences for birds are mainly not detrimental. However it should to be emphasized that only birds have been taken into account. This suggests that more research should be carried out on invertebrate taxa, as these are often under-represented in the literature, and by this to come to a better insight into the consequences of fire for the ecosystem.

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9. Povzetek

Pregledni članek obravnava odziv ptic na požare v naravi v submediteranskih območjih in njihovo morebitno uporabo kot orodje za upravljanje naravnih območij na Krasu (JZ Slovenija). Kras je bil pogozden s črnim borom *Pinus nigra*, na ostalih delih pa se intenzivno zarašča, zaradi česar je ranljiv za požare. Ta položaj je značilen tudi za ostale submediteranske regije, kar drastično vpliva na diverziteto ptic. Smrtnost ptic med požari je nizka. Prvih nekaj let se diverziteta vrst in številčnost zmanjšujeta, sestava vrst pa se hitro spreminja, od ptic odprte krajine h grmovnim vrstam. Ptice kolonizirajo pogorišča le, če je v bližini primerna izvorna populacija. Večja pogorišča so kolonizirana hitreje kot manjša. Veliko vrst se odseli, nekaj vrst pa novim razmeram prilagodi velikost teritorija ter gnezditveno in prehranjevalno obnašanje. Populacijska dinamika se spremeni v odvisnosti od velikosti spremembe habitata in dostopnosti hrane. Sestava vrst ptic se spreminja sočasno s sukcesijo vegetacije. Članek obravnava učinke različnih parametrov požara: velikosti pogorišča, intenzitete, pogostosti in sezone. V splošnem ugotavlja slabo raziskanost odseljevanja ptic z območja požara. Vplivi požarov niso vedno negativni in je pomembno raziskovati njihovo uporabo kot orodje upravljanja.

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Population development of the White-tailed Eagle *Haliaeetus albicilla* in Bulgaria in the period from 1977 to 2005

Razvoj populacije belorepca *Haliaeetus albicilla* v Bolgariji v obdobju od 1977 do 2005

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By the end of the 1970s only one breeding pair of White-tailed Eagle *Haliaeetus albicilla* was left in Bulgaria. New data on the species, collected in the succeeding decades for the whole country, are presented in this paper. The material was sampled mainly from the mid-winter counts on the Danube between 1977 and 2005, and from observations in the country, at times including the breeding season. A definite increase of the number was found. It is more pronounced along the Danube. At least 9 pairs were recently breeding along the Danube and a further 3 pairs along the Black Sea coast. The positive change started in the late 1980s. The reasons are the strict protection of the species and the recovery of the White Poplar *Populus alba* forests on many places on the islands along the Danube river. The White-tailed Eagle has also been observed recently in many places inland in the country. Special attention should be given to further protection of the White Poplar forests on the Danube islands.

Key words: White-tailed Eagle, *Haliaeetus albicilla,* population, Bulgaria
Ključne besede: belorepec, *Haliaeetus albicilla*, populacija, Bolgarija

1. Introduction

The White-tailed Eagle *Haliaeetus albicilla* is closely associated with water habitats rich in fish or supporting large waterfowl populations. Persecution and environmental changes in the 19th and 20th centuries have reduced its population and the species disappeared from many parts of its range. Protection permitted population growth, but the chemical pollution from the 1950s to the 1970s reversed this tendency. More recently, an increase in the number of breeding pairs has been established for the countries of Northern and Central Europe. In Southern Europe the White-tailed Eagle remains rare (Hagemeijer & Blair 1997, BirdLife International 2004). In Bulgaria, it was still a relatively common breeding bird along the Danube and the Black Sea coast till 1950 (Jordans 1940, Pateff 1950), but a negative trend had already been observed (Harrison 1933). The next 20 years were the most critical for the species. By the end of the 1970s only one breeding pair was left (Ivanov 1985). Simeonov *et al*. (1990) did not add any new information to this picture.

The aim of this study is to present the data on the species collected in the period from 1977 to 2005 for the whole country, and to clarify the species' status.

2. Material and methods

Mid-winter counts have been available in Bulgaria since 1977. They present a good opportunity for monitoring the population of this large eagle. Pairs are sedentary in their breeding territory, and only young birds usually wander from their natal areas, occasionally very far (Cramp & Simmons 1980). During the winter the White-tailed Eagle feeds mainly on waterfowl and stays close to their large concentrations. It perches on trees or rests on the sand banks in the Danube, and is easily visible. The material presented here was collected mainly during the mid-winter counts on the

Danube in the period 1977–2005. Between 1977 and 1985 a point scheme for the river was used and each place was visited by car. Very often bad meteorological conditions (fog, snow cover) did not allow the team to reach the bank and provide successful observations. Later (1984, 1990, 1991, 1996, 1998, 1999 and 2005) we used the regular trips of the ship of the Agency for Navigation, maintaining and investigating the Danube in the Somovit–Silistra stretch. Each trip started from Russe, so we had the possibility to monitor the river from Russe to Somovit and Russe to Silistra twice in 2–3 days in good meteorological conditions. Part of the data was collected during visits to the country, at times including the breeding season. With the generous permission of BSPB we used the BSPB data base for some of the localities.

3. Results

Figure 1 shows regular sightings of White-tailed Eagle in Bulgaria on the UTM grid. The most westerly situated locality of the White-tailed Eagle in the past was the island of Goliam Kalafat by Vidin (UTM FP57). Subsequent deforestation of the island made further nesting impossible (Djuninski 1980). In January 1977, 2 immatures were resting in this region, near a large concentration of Mallards *Anas platyrhynchos*. Two years later, near the town of Vidin, we saw an adult bird and in the following year a pair was present. Later observations confirmed the restoration of the breeding pair in the region of Vidin. An adult bird was observed near the island of Gorni Zibar (UTM GP05) in 1979 and again in 1980. We assume that, on that very large island, a pair is also breeding, but we do not have more reliable information.

The region of the village of Zagrajden (UTM LJ04) is known as a wintering place for White-fronted Geese *Anser albifrons* whose numerous flocks overnight on the sand bank of the river. On 15 Jan 1978 4 young eagles were observed and during the counts in 1983 and 1997 only 1 adult per year was recorded. The latter birds could be part of the pair of the nearest nest on the Romanian island of Kalnovaz (UTM LJ14). On this island an old bird was still seen in January 1991 but both partners were registered for the first time resting together on 23 Jan 1996 at the mouth of the river Olt.

Belene (UTM LJ53) is the largest Bulgarian island in the Danube. A reserve has been established here since 1981. This is the oldest and permanent breeding locality of the White-tailed Eagle in Bulgaria. Most often the pair used the nest on the neighbouring small island of Milka. Besides the two old birds in January 1984, 3 immatures also overwintered here. Immatures were recorded in 1998 and 1999 also. Shurulinkov *et al.* (2005) presumed that 2–3 breeding pairs were in the region. In January 2005, two pairs and two immatures were found in the region of Belene island. In the following breeding season, nesting was confirmed for both pairs (Todorov *pers. comm.*).

The island of Vardim (UTM LJ73) is situated east of Svistov and is known to be an old breeding place of the White-tailed Eagle. There are no exact data in the literature as to when it nested for the last time. We found a new pair here in 1984. During the next midwinter counts, the birds were regularly present and, in 1990, one young bird after the first moult was also present in this territory. In January 2005 the pair was followed by one immature after the third moult. The nest was not found. These birds often visit the nearest fishponds in the village of Hadjidimitrovo and clearly they penetrate further inland, reaching the Gorni Dabnik dam near the town of Pleven (Shurulinkov *et al.* 2005).

Till 1961 one pair bred on Batin island (UTM LJ93; Geissler 1962). A couple of eagles were here again in 1984. On different places between this island and the town of Russe, adult and young birds were seen regularly during the following years. It is possible that around 1999 two pairs still had their territories, but only in 2005 was it possible to determine definitely that on this part of the river there were three pairs. One of them has its nest on the island of Batin and the other two were assumed to nest on Romanian territory. The river bank here is less populated and not urbanized.

In the past another pair bred, possibly near Rjahovo (west of Russe; UTM MJ37), where it was last observed in September 1964 (Baumgart 1971). We found a pair there again in 1998. In 1990 it was followed by a young bird. In 1999 the nest was built on a poplar on Marten island (UTM MJ26).

Further west, between the town of Tutrakan and the village of Popina, there are several large islands suitable for the eagle. Some of them have still not been changed by man. The island of Kosui (UTM MJ77), which belongs to this group, is a protected area. Since 1990 old birds have been regularly observed here. They often visited and fished in the farm west of the town of Tutrakan. Obviously a pair has its territory here. On 19 Jan 2005, together with 2 immatures, it was observed on a sand bank by the village of Popina (UTM MJ98). The islands of Vetren (Bialata prast) and Devnja (UTM NJ08) are known as a traditional breeding place of the White-tailed Eagle. They are close to the Srebarna reserve, famous for its rich bird fauna.

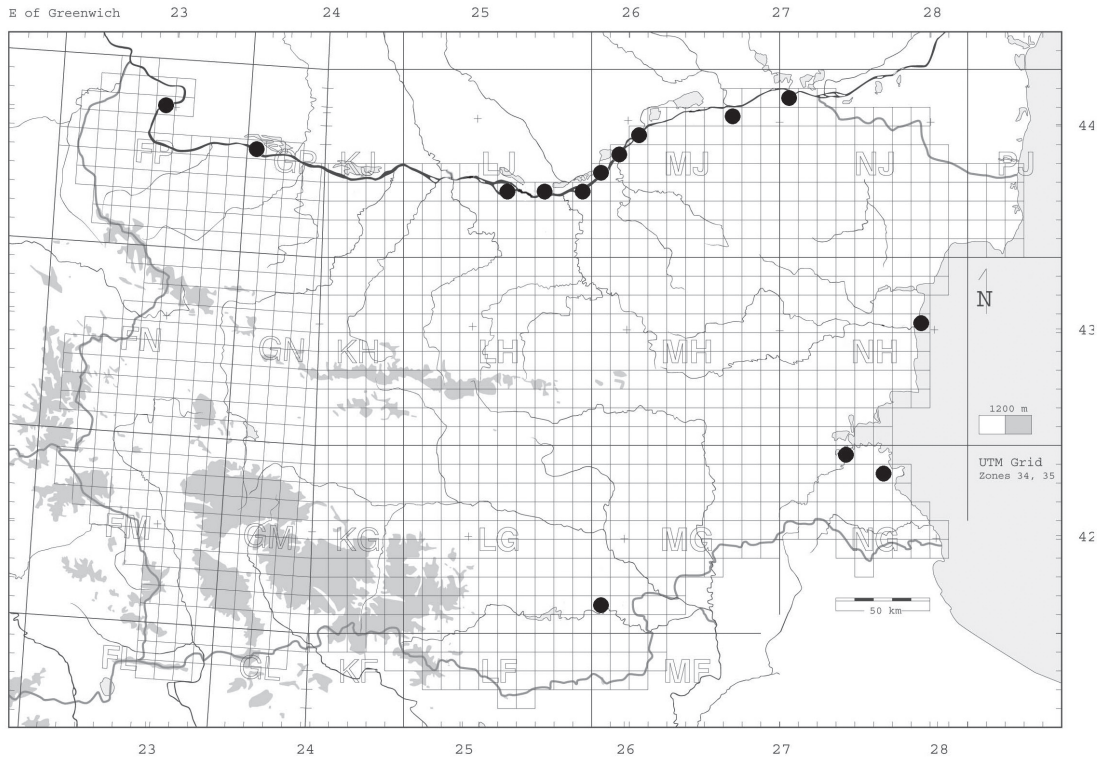

Figure 1: The UTM squares in Bulgaria where the White-tailed Eagle *Haliaeetus albicilla* was observed regularly in the period 1977–2005

Slika 1: UTM kvadrati v Bolgariji, kjer je bil belorepec *Haliaeetus albicilla* redno opažen v obdobju 1977–2005

The pair bred here till 1967 (Michev 1968). It was observed here again in 1972, but there was no evidence for breeding (Königstedt & Robel 1977). In January 1985 an immature bird was seen near Silistra and, from 1990 onwards, also during the breeding season, a pair was regularly present. Possibly it occupied the territory again in the late 1980s. The island of Vetren is in Romanian territory and it is not possible to search there for the nest, but the birds regularly rest there and hunt in the Srebarna reserve, which is a good indication of breeding. In 2005 we found at least 3 pairs between Ruse and Silistra. Currently, at least 12 pairs breed along the Bulgarian–Romanian stretch of the Danube, 9 of which have their nests on Bulgarian territory. A definite increase in the number of White-tailed Eagles along the Danube thus took place during the period of investigation.

In the past the Black Sea coast was the second most important breeding area for the White-tailed Eagle. Its numbers diminished here more quickly than along the Danube. In 1957 a pair was observed at Djavolska river (UTM NG67; Balat 1962) and in 1960 another at Mandra Lake (UTM NG39) by Burgas (Mountfort & Fergusson-Lees 1961) – both without evidence of breeding. The eagle bred at the Ropotamo reserve (UTM NG58) till 1965 (Baumgart 1971), which was the last pair along the coast. By the early 1960s it was still very common during the winter in the region of Burgas (Prostov 1964), but later on, associated mainly with the large concentrations of waterfowl. Single birds were rarely observed during migration or in the winter (Dontchev 1980, Kostadinova & Dereliev 2001, Michev *et al.* 2004). In May 1992 we again observed a pair in the Ropotamo reserve and we were assured by the forestry ranger that it bred in the forest. This probably also occurred earlier. Since the early 1990s the species has recovered as a breeding bird in Mandra Lake also (Michev *et al.* 2004). More recently (since 1997) breeding was established in the Kamchia reserve (UTM NH66) (Georgiev *pers. comm.*). At the moment there are 3 pairs of White-tailed Eagles on the Bulgarian Black Sea coast.

The last documented breeding inland was in 1942 in the region of Jambol (UTM MH50; Arabadjiev 1962). During the midwinter counts, single and most often immature birds, were rarely reported at the dams,

with large concentrations of ducks (Kostadinova & Dereliev 2001, Michev & Profirov 2003, Shurulinkov *et al.* 2005). After the breeding season and in the winter, birds from the Danube penetrate inland and can be seen on the nearest lakes, fishponds and dams more than 100 km away (Shurulinkov *et al*. 2005, *own data*). During the last winters birds, possibly from the Danube Delta, visit Durankulak and Shabla Lakes more regularly. A general tendency to increased presence during the winter on the inland pools has been recorded. In January 2005 a pair was observed close to the Greek border at Ivailovgrad dam (UTM MG01; Iankov *pers. comm*.). The pair was observed here many times during the breeding season and there were indications of breeding, but the nest was not found.

4. Discussion

Information on the White-tailed Eagle for Bulgaria is scanty and does not permit the history of the population decline to be detailed. Clearly the time between the 1950s and 1960s was the most critical for the species. Mainly in this period, most of the large wetlands along the Danube were drained. The islands were deforested and planted with poplars, which destroyed the typical breeding habitats of the eagle. Additional negative effects were the winter hunting of waterfowl and the practice of using poisoned carcasses for reducing the number of large carnivores (Baumgart 1971). This latter also affected the wintering migrants and the dispersing young birds originating outside the region. The forest policy of island deforestation eliminated the big White Poplar *Populus alba* trees, used by the birds as nesting places. This was practised also on some Romanian islands (Djuninski 1980). As a result, during the breeding season of 1965, only 4 birds were present on the Bulgarian stretch of the river (Michev 1968) and in 1979 only one breeding pair existed on the island Belene.

During this study we found a definite increase in the number of White-tailed Eagle in Bulgaria. This was more pronounced along the Danube. At least 9 pairs were recently breeding along the Danube and 3 pairs along the Black Sea coast. This number is slightly higher than that given by Kostadinova (1997) and close to the assessment of Nankinov (2004). The restoration of the population probably started at the end of the 1980s and the beginning of the 1990s. The reason appears to be the strict protection of the species. Another factor is the recovery of the White Poplar population on many places on the islands. Most of the nests we found were built on relatively young trees. The several big fish farms existing till 1990 along the river offered an additional good food supply for the birds. The White-tailed Eagle has been observed recently in many places (predominantly reservoirs) inland in the country. There is still no proved breeding, but the case of the Ivailovgrad dam gives some hope.

Future conservation measures and actions should involve protection of the existing nests and special attention should be given to saving the White Poplar trees on the Danube islands.

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5. Povzetek

Do konca sedemdesetih let dvajsetega stoletja je v Bolgariji gnezdil le še en par belorepca *Haliaeetus albicilla.* Novi podatki iz zadnjih desetletij, zbrani predvsem med zimskim štetjem vodnih ptic na reki Donavi v obdobju 1977–2005, so predstavljeni v tej študiji. Prav tako so upoštevani tudi vsi ostali zbrani podatki. Populacija belorepca v Bolgariji je v tem obdobju naraščala, kar je predvsem izraženo Donavi. V zadnjem času vzdolž reke Donave gnezdi 9 parov belorepcev, vzdolž črnomorske obale pa trije. Populacija je začela naraščati konec 80-tih let prejšnjega stoletja. Razlogi so najverjetneje stroga zaščita vrste ter dejstvo, da si je opomogel gozd belega topola *Populus alba* na otokih vzdolž Donave. Nekaj podatkov pa je tudi o opazovanjih belorepca iz notranjosti dežele. V prihodnosti bo potrebno dati še več poudarka zaščiti gozdov belega topola.

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Rezultati januarskega štetja vodnih ptic leta 2007 v Sloveniji

Results of the International Waterbird Census (IWC) in January 2007 in Slovenia

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Januarsko štetje vodnih ptic je bilo leta 1997 prvič zastavljeno kot celosten, koordiniran in standardiziran popis vodnih ptic na ozemlju celotne Slovenije (Štumberger 1997). Od takrat naprej štetje pokriva vse večje reke, celotno Obalo in večino pomembnejših stoječih voda v državi (Štumberger 1997, 1998, 1999, 2000, 2001, 2002 & 2005, Božič 2005 & 2006). K temu sta pripomogla predvsem dobra organizacija in veliko število sodelujočih prostovoljnih popisovalcev. V članku so predstavljeni rezultati januarskega štetja vodnih ptic leta 2007.

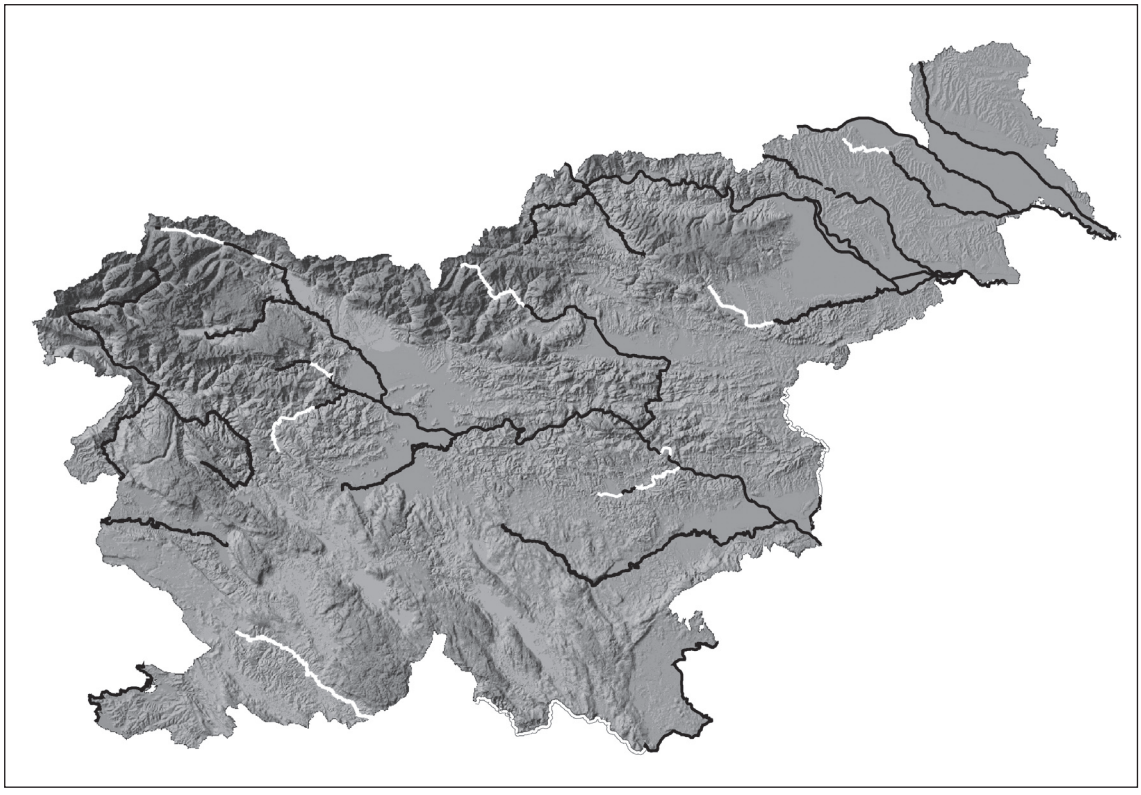
Januarsko štetje vodnih ptic je leta 2007 potekalo 13. in 14. januarja. Organizacija, potek in uporabljena metoda štetja so bili takšni kot leta 1997 (Štumberger 1997). Za organizacijo popisovalcev na sedmih številnih območjih so bili zadolženi lokalni koordinatorji. Pri obdelavi in predstavitvi rezultatov smo upoštevali tudi nekatere podatke, zbrane zunaj organiziranega štetja, vendar največ deset dni pred ali po koncu tedna, predvidenega za štetje. Kormorane *Phalacrocorax carbo*, z izjemo številnih območij Notranjske in Primorske ter Obale in reke Kolpe, smo prešteli na skupinskih prenočiščih. Mokože *Rallus aquaticus* smo na ptujskih studenčnicah, Ljubljanici, potoku Črnec, in še nekaterih manjših lokalitetah šteli s pomočjo predvajanja posnetka oglašanja. Metoda je podrobneje opisana v Božič (2002).

Zimsko obdobje 2006 / 2007 je v klimatskem pogledu zbujalo pozornost po nadpovprečno toplem vremenu. Temperature v decembru in januarju so bile povsod po državi pomembno višje od dolgoletnega povprečja. Januar 2007 je bil v večjem delu Slovenije celo najtoplejši, odkar merijo temperaturo. Temperature so bile decembra večinoma 2–5°C nad dolgoletnim povprečjem, januarja pa 4–7°C nad dolgoletnim povprečjem. Padavin je bilo v SZ Sloveniji decembra veliko, drugod pa je bil to eden najbolj suhih decembrov doslej, še posebej v SV Sloveniji. Januarja je bila nadpovprečna višina padavin zabeležena na Kočevskem in Beli krajini, suho pa je bilo na Obali, Goriškem in skrajni SV Sloveniji. Srednji mesečni pretoki rek so bili decembra v povprečju za 30% manjši kot navadno, nekoliko bolj vodnate so bile reke v zahodni Sloveniji. Januarja so bili srednji mesečni pretoki rek v povprečju za 18% manjši kot navadno. Polovico manj vode kot navadno so imeli zgornji del Save, Sora in Dravinja, pretoki Kolpe, Mure, Vipave in Idrijce pa so bili nekoliko večji od januarskega povprečja. Dne 13. in 14.1.2007 je bilo nad zahodno in srednjo Evropo območje visokega zračnega pritiska. Na Primorskem in Notranjskem je prevladovalo oblačno vreme, drugod pa je bilo delno

Tabela 1: Število pregledanih popisnih odsekov in njihova skupna dolžina na posameznem številnem območju v januarskem štetju vodnih ptic leta 2007 v Sloveniji

Table 1: Number of surveyed sections and their total length in separate survey areas in January waterfowl counts in 2007 in Slovenia

Številno območje / Count area	Skupno število popisnih odsekov/ Total number of sections	Dolžina/ Length (km)	Št. pregledanih odsekov / Sections surveyed	Dolžina / Length (km)
Mura	59	212.3	57	196.8
Drava	126	362.1	120	339.4
Savinja	27	104.6	26	79.4
Sava (zgornja / upper)	90	270.8	79	222.6
Sava (spodnja / lower)	80	379.9	58	248.5
Notranjska & Primorska	32	251.5	27	200.0
Obala / Coast	12	40.9	12	40.9
Skupaj / Total	426	1622.1	379	1327.6



Slika 1: Popisni odseki januarskega štetja vodnih ptic leta 2007 v Sloveniji; črne črte označujejo pregledane, bele nepregledane odseke

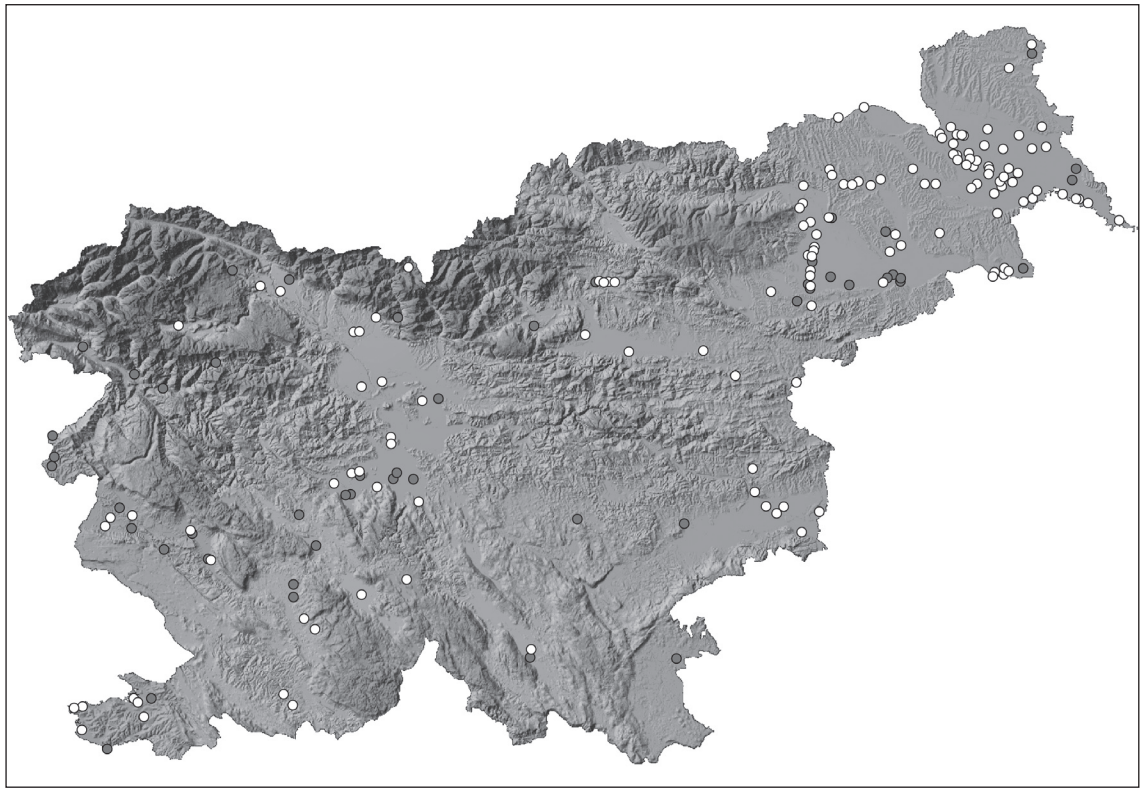
Figure 1: Survey sections of the January waterfowl counts in 2007 in Slovenia, with black lines indicating surveyed and white lines unsurveyed sections

jasno z občasno povečano oblačnostjo. Ponekod je pihal jugozahodni veter. Bilo je zelo toplo, najvišje dnevne temperature so bile od 10 do 17°C (ARSO 2006 & 2007).

V času štetja so bile vse reke nezaledenele. Nezaledenela je bila tudi velika večina drugih lokalitet, vključno z vsemi pomembnejšimi stoječimi vodami. Redke manjše stoječe vode so bile zaledenele največ do 1/2.

Leta 2007 je v januarskem štetju vodnih ptic sodelovalo 253 prostovoljnih popisovalcev. Pregledali smo 379 popisnih odsekov na rekah v skupni dolžini 1327.6 km (tabela 1). Poleg tega smo obiskali tudi 184 drugih lokalitet (134 stoječih voda in 50 potokov). S tem je bila dosežena največja pokritost vodnih teles v doslej opravljenih januarskih štetjih vodnih ptic na ozemlju Slovenije. Leta 2007 smo štetje prvič organizirali na rekah Sori ter Meži in Mislinji. Popisne odseke, pregledane v štetju leta 2007, prikazuje slika 1, pregledane druge lokalitete pa slika 2.

Skupaj smo prešteli 60,744 vodnih ptic, ki so pripadale 58 vrstam. To je najvišje število vodnih ptic, dotlej preštetih v Sloveniji. Tako kot vsa leta poprej smo največje število vodnih ptic prešteli na številnem območju reke Drave, in sicer 25,597. To je 42.1% vseh vodnih ptic, preštetih v Sloveniji. Mlakarica *Anas platyrhynchos* je bila v štetju leta 2007, tako kot ob vseh prejšnjih štetjih, daleč najštevilnejša vrsta (50.0% vseh vodnih ptic). Po številu preštetih osebkov sledijo rumenonogi galeb *Larus michahellis* (11.4% vseh vodnih ptic), liska *Fulica atra* (7.5% vseh vodnih ptic), rečni galeb *Larus ridibundus* (6.7% vseh vodnih ptic) in kormoran (4.6% vseh vodnih ptic). Število 1000 preštetih osebkov so presegli še kreheljc *Anas crecca*, mali ponirek *Tachybaptus ruficollis* in siva čaplja *Ardea cinerea*. Rezultati januarskega štetja vodnih ptic leta 2007 po uveljavljeni shemi razdelitve na sedem številnih območij, ki jim je dodano novo območje Kolpa (Štumberger 1997, 1998, 1999, 2000, 2001, 2002 & 2005), so predstavljeni v tabeli 2 (priloga). Številna



Slika 2: Druge lokalitete (stoječe vode – beli krogi; potoki – temni krogi), pregledane v januarskem štetju vodnih ptic leta 2007 v Sloveniji

Figure 2: Other localities (stagnant waters – white circles; streams – dark circles) surveyed during the January waterfowl counts in 2007 in Slovenia

območja so podrobneje razdeljena na posamezne reke in območja z večjim številom drugih lokalitet, kot so poplavne ravnice, doline, ravnine ipd.

Leta 2007 smo prešteli največje število vranjekov *Phalacrocorax aristotelis*, velikih belih čapelj *Egretta alba*, sivih čapelj *Ardea cinerea*, belih štorkelj *Ciconia ciconia*, moškatnih bleščavk *Cairina moschata*, konopnic *Anas strepera*, mlakaric, rac žličaric *Anas clypeata* (skupaj z letom 1999), tatarskih žvižgavk *Netta rufina*, črnoglavih galebov *Larus melanocephalus*, rumenonogih galebov in povodnih kosov *Cinclus cinclus* v okviru januarskih štetij vodnih ptic doslej. Pri nekaterih vrstah so največja števila prejkone posledica načrtnega štetja na prenočišču (vranjek), deponijah na Obali in Primorskem (rumenonogi galeb) oziroma alpskih rekah (povodni kos). Veliko je bilo tudi malih ponirkov, ki smo jih več prešteli samo leta 2002. Najnižje število v desetih letih januarskih štetij smo zabeležili pri mali beli čaplji *Egretta garzetta*, malem žagarju *Mergellus albellus*, pribi *Vanellus vanellus* in malem martincu *Actitis hypoleucos*. Število preštetih lisk je bilo najnižje po letu 1997, čopastih črnic *Aythya fuligula* najnižje po 1999, kormoranov, labodov grbcev *Cygnus olor* in velikih žagarjev *Mergus merganser* pa najnižje po letu 2001. Ob razmeroma majhnem številu kormoranov je treba dodati, da je bilo precej v zadnjih letih tradicionalno zasedenih prenočišč praznih ali pa so imela majhno število kormoranov. Leta 2007 smo kar na treh številnih območjih prešteli največ vodnih ptic v dosedanjih januarskih štetjih, in sicer na številnem območju Drave, Zgornje Save in Obale. Na števila in razširjenost nekaterih vrst je vplivala nenavadno mila zima. Tako je bila več kot polovica številne zimske populacije velikih belih čapelj prešteta na travnikih in njivah, ki so ob visokih temperaturah in brez snežne odeje zagotavljali ugodne razmere za prehranjevanje. Veliko vodnih ptic je bilo preštetih na različnih stoječih vodah. Večina med njimi je v času januarskega štetja vodnih ptic navadno v celoti zaledenela, tokrat pa je precej stoječih vod imelo na

nacionalnem nivoju pomembna števila vodnih ptic, predvsem mlakaric. To velja zlasti za nekatere večje stoječe vode v SV Sloveniji, kot so na primer Gajševsko jezero, zadrževalnika Medvedci in Požeg ter Žovneško jezero. Verjetno prav zaradi tega je bilo na strugah rek ponekod v SV Sloveniji malo vodnih ptic.

Zahvala: Vsem popisovalcem, ki so šteli vodne ptice, gre zasluga, da smo ponovno sistematično in hkrati popisali vse pomembnejše vodne površine v Sloveniji. Brez nesebičnega truda to ne bi bilo mogoče. Lokalni koordinatorji so požrtvovalno organizirali mrežo popisovalcev na številnih območjih. Vsem najlepša hvala.

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Lokalni koordinatorji leta 2007 so bili: Željko Šalamun (**Mura**), Matjaž Kerček (**Drava**), Luka Božič (**Savinja**), Katarina Denac, Vojko Havliček, Tomaž Mihelič (**Zg. Sava**), Andrej Hudoklin, Dušan Klenovšek, Hrvoje Oršanič (**Sp. Sava**), Tomaž Mihelič, Borut Rubinić (**Kolpa**), Andrej Figelj, Borut Rubinić (**Notranjska & Primorska**), Borut Rubinić (**Obala**).

Summary

In Slovenia, the 2007 International Waterbird Census (IWC) was carried out on 13 and 14 Jan. Waterbirds were counted on all main rivers and most important stagnant waters in the country. There were 253 volunteer participants. During the census, 379 sections with total length of 1,327.6 km and 184 other localities (134 stagnant waters and 50 streams) were checked. Altogether, 60,744 waterbirds of 58 species were counted. The largest number of waterbirds were

counted on the Drava, i.e. 25,597 individuals (42.1% of all waterbirds in Slovenia). The most numerous species was the Mallard *Anas platyrhynchos* (50.0% of all waterbirds), followed by the Yellow-legged Gull *Larus michahellis* (11.4%), Coot *Fulica atra* (7.5%), Black-headed Gull *Larus ridibundus* (6.7%) and Cormorant *Phalacrocorax carbo* (4.6%). Three additional species exceeded 1,000 individuals: Teal *Anas crecca*, Little Grebe *Tachybaptus ruficollis* and Grey Heron *Ardea cinerea*.

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APPENDIX / DODATEK

Tabela 2: Število preštetih vodnih ptic v januarskem štetju leta 2007 v Sloveniji (DA – Drava Alpe: meja z Avstrijo pri Libeličah – Selnica ob Dravi, MM – Meža in Mislinja, D – Drava: Selnica ob Dravi – meja s Hrvaško pri Središču ob Dravi, DV – Dravinja, P – Pesnica, DPP – Dravsko in Ptujsko polje: ribniki, gramoznice, kanali, potoki in polja na Dravskem in Ptujskem polju ter bližnji okolici, M – Mura, Šč – Ščavnica, LD – Ledava, MR – Mura razno: jezera, ribniki, gramoznice, mrtvice in potoki v Pomurju ter bližnji okolici, S – Savinja, ŠAL – Šaleška jezera: Škalsko, Velenjsko in Šoštanjsko jezero, SR – Savinja razno: jezera, ribniki, manjše reke in potoki na Savinjski ravni ter bližnji okolici, ZGS – zgornja Sava: Sava Bohinjka, Sava Dolinka, Sava do Gornje Save (Kranj), SOR – Selška Sora, Poljanska Sora in Sora, SRS – srednja Sava: Gornja Sava (Kranj) – Breg pri Litiji, LB – Ljubljanica, SAR – Savska ravan: jezera, gramoznice, manjše reke in potoki na Savski ravni, LBA – Ljubljansko barje: jezera, ribniki, kanali in potoki na Ljubljanskem barju, SSO – Sava soteska: Breg pri Litiji – Zidani Most, SS – spodnja Sava: Zidani Most – meja s Hrvaško, MI – Mirna, K – Krka, ST – Sotla, SSR – spodnja Sava razno: jezera, ribniki, gramoznice in potoki na Krški ravni ter bližnji okolici, KO – Kolpa, KOR – Kolpa razno: jezera, manjše reke in potoki na Kočevskem in Beli krajini, SO – Soča, I – Idrijca, VI – Vipava, VID – Vipavska dolina: jezera, glinokopi in potoki v Vipavski dolini, NOT – Notranjska: notranjska kraška polja in ponikalnice, Cerkniško jezero, RE – Reka, O – Obala: slovensko obalno morje, OS – Obala soline: Sečoveljske in Strunjanske soline, OZ – Obala zatok: Škocjanski zatok, OR – Obala razno: reke in stoječe vode v Koprskih brdih). Število kormoranov *Phalacrcorax carbo*, ki so bili prešteti na prenočiščih, je označeno s krepkim tiskom.

Table 2: Results of the International Waterbird Census (IWC) in January 2007 in Slovenia (DA – Drava Alpe: from border with Austria at Libeliče to Selnica ob Dravi, MM – Meža and Mislinja, D – Drava: from Selnica ob Dravi to border with Croatia at Središče ob Dravi, DV – Dravinja, P – Pesnica, DPP – Dravsko polje and Ptujsko polje: fish ponds, gravel pits, channels, streams and fields on Dravsko and Ptujsko polje and neighbourhoods, M – Mura, Šč – Ščavnica, LD – Ledava, MR – Mura other: lakes, fish ponds, gravel pits, backwaters and streams in Pomurje and neighbourhoods, S – Savinja, ŠAL – Škalsko, Plevelovo, Velenjsko and Družmirsko Lake, SR – Savinja other: lakes, fish ponds, small rivers, and streams on Savinja plain and neighbourhoods, ZGS – Upper Sava: Sava Bohinjka, Sava Dolinka, Sava to Kranj, SOR – Selška Sora, Poljanska Sora and Sora, SRS – Middle Sava: from Kranj to Breg pri Litiji, LB – Ljubljanica, SAR – lakes, gravel pits, small rivers and streams on Sava plain, LBA – lakes, fish ponds, channels and streams on Ljubljansko, SSO – Sava gorge: from Breg pri Litiji to Zidani Most, SS – Lower Sava: from Zidani Most to border with Croatia, MI – Mirna, K – Krka, ST – Sotla, SSR – Lower Sava other: lakes, fish ponds, gravel pits and streams on Krško plain and neighbourhoods, KO – Kolpa, KOR – Kolpa other: lakes, small rivers and streams in Kočevsko region and Bela krajina, SO – Soča, I – Idrijca, VI – Vipava, VID – Vipavska dolina: lakes, clay pits and streams in Vipava valley, NOT – Notranjska: Notranjska: karst fields of S Slovenia (eg. Cerkniško polje), RE – Reka, O – Slovene coastal sea, OS – Coastal saltpans: Sečoveljske in Strunjanske soline, OZ – Škocjanski zatok, OR – other localities on coast: rivers and stagnant waters in Koprska brda). The number of Cormorants *Phalacrocorax carbo* counted on roosting places is denoted with bold print.

Tabela 2 / Table 2: IWC 2007; naslov glej str. 29 / title see page 29

Vrsta / Species	Skupaj vse/ Total overall	Drava							Mura					Sava (zgornja / upper)							Kolpa		
		DA	MM	D	DV	P	DPP	Skupaj/ Total	M	ŠČ	LD	MO	Skupaj/ Total	ZGS	SOR	SRS	LB	SAR	LBA	Skupaj/ Total	K0	KOR	Skupaj/ Total
Gavia stellata	4																						
Gavia arctica	60															1	1			2			
T. ruficollis	1449	14		429	15	5	16	479	6	2	18	6	32	36	2	310	114	1	22	485	72	1	73
Podiceps cristatus	214	1		15			1	17		2	6	12	20	2		2				4	5	1	6
Podiceps grisegena	6																						
Podiceps nigricollis	92																						
Phalacrocorax carbo	2791	**464**		**583**				1047	**267**				267	**116**		**176**	**46**			338	65		65
P. aristotelis	321																						
Egretta garzetta	45																						
Egretta alba	605			73	9	54	141	277	8	41	62	44	155		1	5	6		47	59	2		2
Ardea cinerea	1267	35	35	112	54	61	126	423	34	8	26	30	98	88	28	51	27	6	47	247	19		19
Ciconia ciconia	5			1			4	5															
Cygnus olor	991	23		331	2	17	16	389	27		22	33	82	9		140	2	6		157			
Anser fabalis	158			158				158															
Anser albifrons	10			10				10															
Anser anser	4															2				2			
Anser sp.	33											33	33										
Tadorna ferruginea	1																						
Tadorna tadorna	12			1				1															
Cairina moschata	14			1				1									1		1	2			
Aix galericulata	6													1		1	1	2		5			
Anas penelope	352			21			2	23		3	2	8	13			5	18			23	4		4
Anas strepera	51			12			1	13				3	3			1	7			8			
Anas crecca	1706			578			51	629			24	10	34			39	40			79	1		1
Anas platyrhynchos	30396	274	363	9219	303	465	4152	14776	376	964	610	1345	3295	934	252	1783	2214	499	190	5872	576	83	659
Anas acuta	5						2	2						1						1			
Anas clypeata	90													1						1			
Netta rufina	6															1				1			
Aythya ferina	835	6		707			6	719				7	7			45	4			49			
Aythya nyroca	1																						
Aythya fuligula	802	2		545			2	549				1	1	2	6	218				226			
Aythya marila	2			1				1															
Clangula hyemalis	1			1				1															
Melanitta fusca	4			1				1															
Bucephala clangula	845			761			2	763		1			1			28				28	4		4
Mergellus albellus	45			40				40				1	1										
Mergus serrator	107			3				3															
Mergus merganser	270	32		66	12			110	15				15	14	28	84			5	131	2		2
Haliaeetus albicilla	5			3			1	4															
Rallus aquaticus	73	5		18				23				21	21				12			12	1		1
Gallinula chloropus	168			7		1		8			4		4			1	69	6	26	102	2		2
Fulica atra	4533	63		2507		3	97	2670	11		7	19	37	40		438	25	14		517	12	1	13
Vanellus vanellus	4						1	1			2		2										
Calidris alpina	18																						
L. minimus	1			1				1															
Gallinago gallinago	53			1				1								3	2	1		6			
Scolopax rusticola	3			1				1						2						2			
Numenius arquata	24																						
Tringa totanus	35																						
Tringa nebularia	8																						
Tringa ochropus	49			11		1		12	30			1	31			1	1			2			
Actitis hypoleucos	1																						
L. melanocephalus	11																						
Larus ridibundus	4087			1743			6	1749													1		1
Larus canus	409			335				335									1			1			
Larus michahellis	6922	4		247			23	274									4			4			
Sterna sandvicensis	32																						
Alcedo atthis	123			14	4	1	2	21	6		1	8	15	7		8	7	2	4	28	4		4
Cinclus cinclus	579	3	56		1			60	1				1	106	62			9	4	181			
Skupaj / Total	60744	926	454	18557	400	608	4652	25597	781	1021	784	1582	4168	1359	379	3343	2602	546	346	8575	770	86	856

Nadaljevanje tabele 2 (desna stran) / continuation of Table 2 (right side)

	Sava (spodnja / lower)							Savinja				Notranjska & Primorska							Obala / Coast				
	SSO	SS	MI	K	ST	SSR	Skupaj/ Total	S	ŠAL	SR	Skupaj/ Total	SO	I	VI	VID	NOT	RE	Skupaj/ Total	O	OS	OZ	OR	Skupaj/ Total
G. ste.		1					1													3				3
G. arc.												1						1	57				57
T. ruf.	1	26		201		16	244	3	17		20	3	1	14	6	14	2	40	20	22	24	10	76
P. cri.	2	2		3			7		17		17	2			16		1	19	122			2	124
P. gri.		3					3		1		1								2				2
P. nig.				3			3									1		1	88				88
P. car.	**5**	**275**	**7**	**61**			348	**256**	**113**		369	47	24	82	73		4	230	117	8	1	1	127
P. ari.																			321				321
E. gar.																			21	19	5		45
E. alb.	1	10		13		4	28			2	2	3	1	30	7	16		57	2	21	1	1	25
A. cin.	9	40	5	61	4	17	136	53	23	43	119	27	41	43	31	13	1	156	6	26	26	11	69
C. cic.																							
C. olo.		33		227		20	280	2	41	16	59					23		23	1				1
A. fab.																							
A. alb.																							
A. ans.															2			2					
A. sp.																							
T. fer.						1	1																
T. tad.									2		2									7	2		9
C. mos.						1	1	5			5											5	5
A. gal.														1				1					
A. pen.						9	9		3		3	2						2	13	245	17		275
A. str.		8				1	9													18			18
A. cre.		45					45		50	14	64									494	360		854
A. pla.	135	809	23	885	38	261	2151	744	368	697	1809	313	65	182	176	107	18	861	136	635	163	39	973
A. acu.												1						1		1			1
A. cly.																				31	58		89
N. ruf.						5	5																
A. fer.		15					15		34		34	5			2			7			4		4
A. nyr.						1	1																
A. ful.		1				10	11		14		14										1		1
A. mar.												1						1					
C. hye.																							
M. fus.																			3				3
B. cla.									2		2	2				45		47					
M. alb.						1	1		3		3												
M. ser.																			93	11			104
M. mer.								6			6	2	3	1				6					
H. alb.																1		1					
R. aqu.						4	4	1			1	1		3	4	3		11					
G. chl.				9		1	10		4		4			9	8			17		9	6	6	21
F. atr.		192		30		258	480		412	37	449	2		5	53			60		196	109	2	307
V. van.															1			1					
C. alp.																				18			18
L. min.																							
G. gal.						4	4	1			1			3	33	3		39		2			2
S. rus.																							
N. arq.																					24		24
T. tot.																				35			35
T. neb.												1						1	7				7
T. och.										4	4												
A. hyp.																				1			1
L. mel.															2			2	9				9
L. rid.				1			1					5			160			165	989	168	302	712	2171
L. can.															60			60	7		6		13
L. mic.												32			1500			1532	1365	1716	129	1902	5112
S. san.																			32				32
A. att.	1	1	1	5		9	17	5			5	7	2	6	1			16	2	13	1	1	17
C. cin.	4			14			18	14			14	143	149	10	3			305					
	158	1461	36	1513	42	623	3833	1090	1104	813	3007	600	286	389	2138	226	26	3665	3416	3696	1239	2692	11043

The breeding of White-backed Woodpecker *Dendrocopos leucotos* on mount Lisina near Mrkonjić-Grad (Bosnia and Herzegovina)

Gnezditev belohrbtega detla *Dendrocopus leucotos* na gori Lisina pri Mrkonjić-Gradu (Bosna in Hercegovina)

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Observations of White-backed Woodpecker *Dendrocopos leucotos* are rare on the territory of Bosnia and Herzegivina in recent times. I observed it only twice:

(1) 27 Apr 2002 Previle near Mrkonjić-Grad in a Beech *Fagus sylvatica* forest; 1♂ flew from the slopes of Lisina to the nearby mountain Orugla, where I observed it; in the vicinity, drumming of another woodpecker was heard;

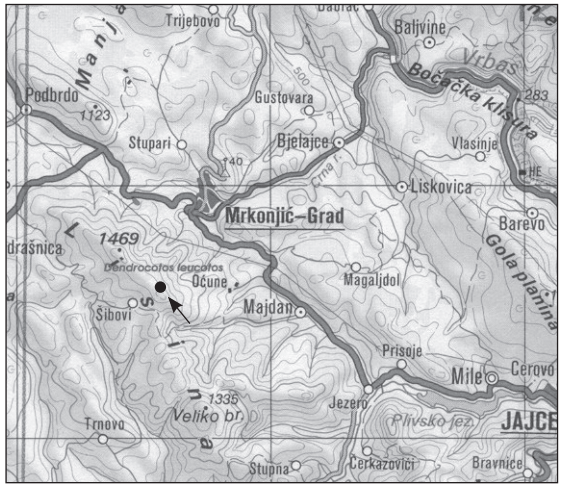

Figure 1: The location of the White-backed Woodpecker *Dendrocopos leucotos* breeding ground on Mt Lisina (Bosnia and Herzegovina) in 2006

Slika 1: Lokacija gnezdišča belohrbtega detla *Dendrocopos leucotos* na gori Lisina (Bosna in Hercegovina) v letu 2006

Figure 2: Habitat around the nest of White-backed Woodpecker *Dendrocopos leucotos* (photo: R. Gašić)

Slika 2: Habitat v okolici gnezda belohrbtega detla *Dendrocopos leucotos* (foto: R. Gašić)

(2) 16 Jul 2005 Jahorina Mt, Rajska dolina (trees in the hotel resort), I observed 1 individual.

A few times I heard »White-backed Woodpecker like« drumming, but could not determine species with absolute certainty.

In 2006 R. Gašić found an active nest of White-backed Woodpecker on Mt Lisina west of Mrkonjić-Grad (UTM XK61; Figure 1). During his mycological work, Radoslav Gašić noticed a pair staying in a particular area on 16 Apr and 1 May 2006, the habitat being Beech forest on the locality Kotac (44°22.527' N, 17°04.427' E, 1110 m a.s.l.; Radoslav Gašić, *pers. comm.*; Figure 2). This awoke suspicion that an active nest was nearby, moreover since he had observed a pair during spring 2005. On 16 May 2006, while observing this pair, he located the entrance of the nest in the upper part of a dry Beech. The nest was just a few metres below the Previle to Šibovi forest road. He photographed the nest and the birds carrying some kind of material from the nest.

To begin with I thought they were carrying chips of wood from the hollow. I visited this nest personally for the first time on 20 May 2006. The nest was approx. 14 m from ground level, with the opening oriented west. Further observations conducted by myself and R. Gašić (20 & 27 May 2006) showed that in the nest there were already feathered young and that the parents were carrying their excrement from the hollow (Figure 3 & 4). We could not determine the actual number of young but there were not less than three. The young were seen in the nest on 27 May 2006 and on 3 Jun the nest was empty.

Figure 3: Young White-backed Woodpecker *Dendrocopos leucotos* on the nest (photo: R. Gašić)

Slika 3: Mladič belohrbtega detla *Dendrocopos leucotos* na gnezdu (foto: R. Gašić)

The general impression concerning White-backed Woodpecker in Bosnia and Herzegovina is that it is widespread but in low numbers and therefore rarely seen.

Plenty of data exists from the period of Otmar Reiser in Sarajevo, 1887–1920. The presence of White-backed Woodpecker was registered at a relatively large number of localities (44). These data were collected and presented by Svjetoslav Obratil (Obratil 1977). There is one report regarding the breeding: on Mt Vlašić – Han Goštjel on 23 Apr 1890, 1 pair breeding (Obratil 1977). Specimens from 7 localities were denoted as juv. and from one additional locality as semipull. which is an indirect proof of this species' breeding in Bosnia and Herzegovina before World War II.

After World War II very few data exist. Rucner & Obratil (1973) refer to it as the species of mountain forest communities (*Musco–Fagetum*, *Mercuriali–Fagetum, Abieti-Fagetum, Orchido–Abietetum* & *Dryopteridi–Fagetum*) and of subalpine forests (*Aceri–Fagetum, Aceri visianii-Fagetum, Vaccinio–Fagetum* & *Aceri–Fraxinetum*). However neither actual nesting data nor population data in these habitats are presented, only the number of individuals and pairs in specific transects.

Obratil (1987) reports that this species is present during the summer in montane Beech forests (*Fagetum moesiacae montanum* Bleč. et Lkšić 1970) at 1040 m a.s.l., in the beech-fir community (*Abieti–Fagetum moesiacae* Bleč. et Lkšić 1970) on locality Dragoš sedlo at 1200 m a.s.l., and in the community of subalpine beech forests (*Luzulo–Fagetum moesiacae* Lkšić 1969) on Prijevor at 1040 m a.s.l. There are no concrete breeding data.

There is only one additional piece of data: Hutovo Blato on 29 Nov 1960 when one a female White-backed Woodpecker was shot.

There are no data from northern Bosnia according to Obratil (Obratil 1983).

Povzetek

Dne 16.5.2006 je bilo najdeno aktivno gnezdo belohrbtega detla *Dendrocopos leucotos* v bukovem gozdu na planini Lisini v bližini Mrkonjić-Grada

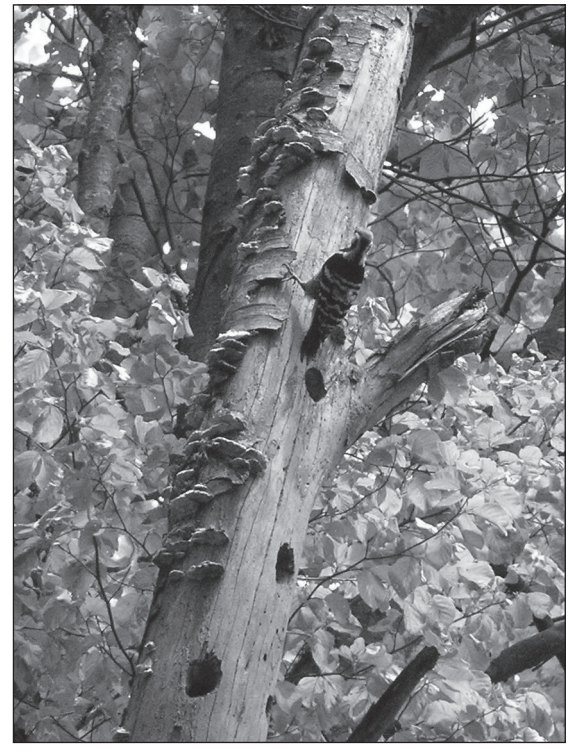

Figure 4: Male White-backed Woodpecker *Dendrocopos leucotos* near the nest (photo: R. Gašić)
Slika 4: Samec belohrbtega detla *Dendrocopos leucotos* v bližini gnezda (foto: R. Gašić)

(UTM XK61). Gnezdo je bilo v duplini v odmrli bukvi na lokaliteti Kotac (44°22.527' N, 17°04.427' E, približno 1110 m n.v.). Natančno število mladičev ni bilo ugotovljeno, vendar ocenjeno na najmanj tri. Zadnjič so bili na gnezdu mladiči opaženi 27.5.2006.

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Poljska vrana *Corvus frugilegus* ponovno gnezdi v Sloveniji

Rook *Corvus frugilegus* once again breeding in Slovenia

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V evropskem prostoru je poljska vrana *Corvus frugilegus* splošno razširjena vrsta, ki šteje od 20 do 35 milijonov osebkov (BirdLife International 2004). Globalni trendi gibanja številčnosti populacije niso bili kvantificirani. Podatki sicer kažejo, da ta pada (Madge & Burn 1993, Snow & Perrins 1998), vendar se še ni približala pragu, da bi jo lahko uvrstili na rdeči seznam IUCN. Vrsta je tako opredeljena kot manj ogrožena (LR). Razmere v Sloveniji so drugačne. Že pri nastajanju rdečega seznama ogroženih ptic gnezdilk Slovenije leta 1994 (Bračko *et al.* 1994) je bila poljska vrana uvrščena v kategorijo domnevno izumrlih vrst (Ex?). Vanjo se uvrstijo vrste, katerih navzočnost je bila na območju Slovenije znana, že daljši čas pa jih kljub iskanju ni več najti, zato obstaja utemeljen sum, da je vrsta izumrla. V isto kategorijo jo je leta 2002 uvrstil tudi Pravilnik o uvrstitvi ogroženih rastlinskih in živalskih vrst v rdeči seznam (Uradni list RS 2002).

Iz Ornitološkega atlasa Slovenije (Geister 1995) lahko razberemo, da so bile v osemdesetih letih prejšnjega stoletja zabeležene gnezdilne kolonije na posameznih lokacijah panonskega obrobja Slovenije. Zadnje poročilo se nanaša na kolonijo v Petišovcih, ki so jo leta 1992 uničili z vodnimi curki (Gregori 1993). Poljska vrana zaradi škod, ki jih povzroča na polju, med ljudmi ni bila priljubljena. Za reševanje problema so se ljudje očitno pogosto posluževali uničevanja občutljivih gnezditvenih kolonij, verjetno pa je k izginotju gnezdeče populacije pripomogel tudi nezakonit lov. Po letu 2000 so bile ob reki Savi na Krško-brežiškem polju v poletnem in jesenskem obdobju pogosto opazovane jate poljskih vran, ki so verjetno prihajale iz gnezdišč na sosednjem Hrvaškem.

V poznem poletju leta 2004 je bilo opaženo 16 gnezd na sestoju visokih robinij *Robinia pseudoacacia*, na obrobju ene od gramoznic ob avtocestnem priključku za Krško. Glede na velikost gnezd in njihovo kolonijsko postavitev, je bilo mogoče sklepati, da gre za gnezdenje poljske vrane (D. Klenovšek *osebno*). To se je spomladi naslednje leto tudi potrdilo, saj je na isti lokaciji gnezdila kolonija, ki je štela 40 do 50 osebkov (slika 1). Ob večkratnem obisku je bilo videti, da je bilo gnezdenje uspešno. Člana DOPPS Andrej Figelj in Borut Rubinić sta med ogledom lokacije leta 2005 govorila z lastnikom, ki je omenil, da nameravajo drevesa zaradi potreb gramoznice posekati. Na vztrajanje lastnika so poseg odložili (A. Figelj & B. Rubinič *osebno*). Spomladi leta 2006 so poljske vrane ponovno pričele gnezditi, a je prav takrat prišlo aprila do podiranja dreves. Vrane so se tako prestavile na dob *Quercus robur*, edino večje drevo v neposredni soseščini ob cesti. Maja je bilo opaženih 12 gnezd (D. Klenovšek *osebno*). Gnezditveni uspeh ni bil preverjen.

Slika 1: Kolonija poljske vrane *Corvus frugilegus* v bližini Krškega (JV Slovenija) v letu 2005 (foto: A. Hudoklin)

Figure 1: The colony of Rook *Corvus frugilegus* near Krško (SE Slovenia) in year 2005 (photo: A. Hudoklin)

Gnezdenje poljskih vran pri Krškem med leti 2004 in 2006 v kvadrantu 08/53 (UTM WL1) tako po daljšem obdobju (1992) nakazuje možnost vračanja vrste v Slovenijo. Lokacija gnezditvene kolonije je glede na izkazano nenaklonjenost upravljavcev gramoznice potrebna velike naravovarstvene pozornosti. V primeru ponovnega gnezdenja ptic bo treba izvesti komunikacijo z lastniki bližnjih zemljišč in izvajati nadzor.

Summary

For the first time after its last colony in Slovenia was destroyed in 1992 a new colony with 16 nests was found (40–50 individuals), nesting on Black Locust *Robinia pseudoacacia* trees near gravel pond in the vicinity of town Krško (UTM WL1).

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Large scale migration of Red-footed Falcon *Falco vespertinus* over Kaliakra (NE Bulgaria)

Intenzivna selitev rdečenogih postovk *Falco vespertinus* preko Kaliakre (SV Bolgarija)

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On 28 Sep 2006 at 15.02 h (local time) from the south-eastern edge of the village Sveti Nikola (UTM PJ20), north-eastern Bulgaria, we saw what appeared to be an endless flow of Red-footed Falcons *Falco vespertinus*, coming from the north-northeast over the village (UTM PJ21) and heading towards Cape Kaliakra (IBA BG051; UTM PJ10). The number of falcons that had already passed the point before our arrival is unknown, but there were birds in the whole visible part of the horizon in the south-southwestern direction, which we did not count. Starting with the falcons flying overhead between 15.02 h and 15.40 h (when no more birds were arriving) we counted a total of 809 individuals. The birds were flying at about 100 m over the steppe in a relatively narrow front of about 200–300 m, solitarily or in groups of 2–3. There were juvenile, female and male individuals, mainly flying directly with active flight, but some groups soaring. No other species of birds of prey were observed with the Red-footed Falcons. During the time of the observation, the line of the flow moved slightly westward (there was a moderate eastern wind), but the direction of flight remained the same. During the 38 minutes of observation, the falcons were passing mostly between 50 and 100 m, with some groups lower or up to 150 m height.

The birds passed over the area, which is identified as an Important Bird Area (IBA), being a bottleneck site for migrating birds and is currently proposed as a Special Protection Area (SPA) / Natura 2000 site under the Bulgarian Biodiversity Act. However the area is threatened by investment proposals for windfarms, the major ones being from Yomy Engenering/Geopower Ltd, Universum Energy Ltd and Mitsubishi Heavy Industries. More than 100 wind turbines of over 120 m height are planned and approved by the authorities, ignoring the ornithological data.

Smaller groups of Red-footed Falcons (most probably from the same flocks) were observed from 15.49 h to 15.55 h between the villages of Sveti Nikola and Balgarevo. They were hunting or perched on wires along the road. Falcons were flying north-west over the village of Balgarevo and to the north-west of it (up to 35 individuals), indicating possible return towards the north-west along the coastline after reaching Cape Kaliakra, south of which the open sea starts. This assumption was confirmed by the fact that at 17.10 h about 370 Red-footed Falcons were flying together over the coastal hills south of Kavarna, called Chirakmana – IBA BG097 White Rocks (UTM PJ00), which is further to the west-northwest along the Black Sea coast. Some birds were flying over the sea, circling over an area about 500–700 m in diameter. Most of the birds moved to the east of the site at about 17.20 h, but about 40 flying falcons were visible till 17.40 h, before dusk. The largest numbers of Red-footed Falcons previously observed in Bulgaria were recorded at Atanasovsko Lake Migration Watch Point – 890 in one day (22 Sep 1989), with 3,003 individuals in one month (Sep 1989) and the largest numbers for one season (Aug–Oct 1989) of 3,110 individuals (Ruskov 1998).

Povzetek

Avtorji podajajo nove podatke o intenzivni jesenski selitvi rdečenogih postovk *Falco vespertinus* preko rta Kaliakre (UTM PJ10, SV Bolgarija). Dne 28.9.2007 so našteli 809 osebkov na selitvi, verjetno pa je bilo število še večje, ker je selitev potekala tudi še pred začetkom opazovanja. Ptice so letele na relativno ozkem koridorju 200–300 m, posamič ali pa v skupinah 2-3 osebkov. Čas opazovanja je bil 38 minut, rdečenoge postovke pa so letele v smeri jug-jugozahod.

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Iz ornitološke beležnice

From the ornithological notebook

Slovenija / Slovenia

Rdečegrli slapnik *Gavia stellata*

Red-throated Diver – one late second year individual seen on 20 May 2005 at Pretržje near Dolenje jezero (UTM VL47, Cerkniško jezero, C Slovenia)

Dne 20.5.2005 sem v Pretržju na Dolenjem jezeru opazoval drugoletni osebek rdečegrlega slapnika. Gre za redko vrsto na Cerkniškem jezeru [Kmecl, P. & Rižner, K. (1993): Pregled vodnih ptic in ujed Cerkniškega jezera; spremljanje številčnosti s poudarkom na preletu in prezimovanju. – Acrocephalus 14 (56/57): 4–31], a tudi za precej pozen datum, kar zadeva to vrsto.

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Kvakač *Nycticorax nycticorax*

Night Heron – two adults observed along the Ljubljanica river during the breeding season, one on 17 Apr 2007 at Štepanjsko naselje in Ljubljana (UTM VM60), one on 18 Apr 2007 near the village of Črna vas at Ljubljansko barje (UTM VL59, C Slovenia)

Kvakač je na Ljubljanskem barju redka vrsta z negotovim gnezditvenim statusom [Tome, D., Sovinc, A. & Trontelj, P. (2005): Ptice Ljubljanskega barja. Monografija DOPPS št. 3. – DOPPS, Ljubljana]. Dne 17.4.2007 smo ob Ljubljanici v Štepanjskem naselju v Ljubljani opazili odrasel osebek, ki je v zgodnjem dopoldnevu sedel na veji vrbe *Salix* sp. Naslednji dan, 18.4.2007, smo odraslega kvakača opazovali tudi pri Črni vasi na Ljubljanskem barju ob reki Ljubljanici. Osebek je krožil nad reko in nato obsedel na vrbi. Opazovanja kvakačev v gnezditvenem času so vzbudila že kar nekaj sumov za gnezdenje [npr. Hudoklin, A. (2001): Kvakač *Nycticorax nycticorax*. – Acrocephalus 22 (108): 175]. Iskanja gnezd se bo treba lotiti bolj intenzivno, da bi lahko potrdili gnezditev te pri nas malo poznane vrste.

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Križanec sivke in kostanjevke *Aythya ferina* x *nyroca*

A hybrid between Ferruginous Duck and Pochard – observed on 16 Apr 2006 at Rački ribniki S of Rače (UTM WM54, NE Slovenia) among two Ferruginous Ducks *Aythya nyroca* and several Pochards *Aythya ferina*; probably the same hybrid seen again on 17 May 2006 on Lake Požeg

Dne 16.4.2006 sem med obiskom Račkih ribnikov v Krajinskem parku Rače (SV Slovenija) opazoval race. Prevladovale so mlakarice *Anas platyrhynchos* in reglje *Anas querquedula*. Med nekaj sivkami *Aythya ferina* sta se skrivali tudi dve kostanjevki *Aythya nyroca*. Pogled se mi je zaustavil na nenavadni raci, ki je na prvi pogled spominjala na sivko. Razlikovala se je po tem, da je bila nekoliko večja, hrbet je imela temnejše sive barve, glava je bila nekoliko temnejša, na kljunu pa je bil nekoliko drugačen vzorec. Po pregledu priročnika za opazovanje ptic [Mullarney, K., Svensson, L., Zetterström, D. & Grant, P. (1999): Bird guide. – HarperCollins, London] sem ugotovil, da je opazovana ptica bržkone križanec med sivko in verjetno kostanjevko. Verjetno isti osebek sem opazoval dober mesec kasneje, 17.5.2006, na vodnem zadrževalniku Požeg, kjer je prav tako plavala skupaj s sivkami. Ti podatki se mi zdijo še posebej zanimivi, saj sem leto predtem na zadrževalniku Medvedce opazoval dvorjenje samca kostanjevke samici sivke.

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Beloglavi jastreb *Gyps fulvus*

Griffon Vulture – observed on 9 Jul 2004 in the village of Gajevci (UTM WM73, SV Slovenia); a rare sighting for NE Slovenia

V 25 letih je bilo zbranih skupaj 242 opazovanj 672 osebkov beloglavih jastrebov v Sloveniji. Večina opazovanj je bilo zabeleženih na južnih obronkih Trnovskega gozda, Nanosa, Snežnika, v Čičariji in Kraškem robu [Mihelič, T. & Genero, F. (2005): Occurrence of Griffon Vulture *Gyps fulvus* in Slovenia in the period from 1980 to 2005. – Acrocephalus 26 (125): 73–79]. Glede na to, da sta iz SV Slovenije znana samo 2 podatka, lahko sklepam, da je pojavljanje te vrste v tem delu Slovenije redkost. Dne 9.7.2004 sem ob 13.30 h

v naselju Gajevci opazoval enega beloglavega jastreba. Ptica je izkoristila termiko in se dvigovala z vsakim krogom više, nato pa v smeri juga izginila nad haloškimi hribi.

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Rjavi škarnik *Milvus milvus* & sršenar *Pernis apivorus*

Red Kite & Honey Buzzard – on 26 Aug 2006, seven Honey Buzzards were seen flying in a straight line over Zavrh on Menišija plateau (UTM VL48, C Slovenia); on the next day, additional 15 Honey Buzzards were seen circling over Kunji vrh near Pokojišče on Menišija plateau, heading due southeast; soon, they were followed by three individuals and one single bird; on 10 Sep 2006, almost at the same spot, two young Red Kites were observed gliding above the treetops

Dne 26.8.2006 sem na Menišiji (osrednja Slovenija) opazoval sedem sršenarjev, ki so krožili nad Zavrhom, potem pa v ravni črti odjadrali proti Javornikom. Naslednji dan sem s prijatelji nabiral gobe nedaleč stran od Pokojišča. V zraku smo nad Kunjim vrhom opazili 15 sršenarjev, ki so se v obliki spirale zbirali nad sosednjim vrhom. Kmalu zatem smo opazili še tri zamudnike, ki so hiteli v smeri prej opažene jate, tem pa je sledil še en osebek. Dne 10.9.2006 sem se z dvema prijateljema spet potepal po okolici Pokojišča. Tokrat smo opazovali nizek let dveh mladih rjavih škarnikov, ki sta skupaj z nekaj kanjami *Buteo buteo* krožila nad vrhovi dreves. Očitno je v času selitve severni del Menišije primeren za selitve ptic, ki potrebujejo termiko na svoji poti, saj to ni bilo prvič, da so bile opažene seleče se ptice na tem območju [Krofel, M. (2004): Žerjav *Grus grus*. – Acrocephalus 25 (122): 161–177]. Rjavi škarnik v zadnjih letih ni bil opažen na Menišiji [M. Krofel, *osebno*].

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Rdečenoga postovka *Falco vespertinus*

Red-footed Falcon – a flock of more than 150 individuals seen on 12 May 2006 at Viševke SW of Cerknica (UTM VL57, C Slovenia); they were feeding on insects in the neighbouring meadows and sitting on power lines; this is one of the highest numbers reported so far for Slovenia; on 25 Sep 2006, a female was observed sitting on wooden poles surrounding a pasture, this being a rare autumn sighting for Slovenia

Dne 12.5.2006 sem imel na Viševkah jugozahodno od Cerknice priložnost opazovati večjo jato rdečenogih postovk. Ocenjujem, da je bilo v tej jati kakih 150 osebkov. Prevladovale so samice. Postovke so mirno posedale po žicah daljnovoda in lovile žuželke po okoliških travnikih. Eno samico rdečenoge postovke sem opazoval na istih travnikih tudi na jesenski selitvi 25.9.2006. Ta je posedala po količkih, ki označujejo meje pašnika. Že zadnjih nekaj let se ta vrsta ustavlja na travnikih jugozahodno od Cerknice v spomladanskem času. Gre za tretjo največjo jato na Cerkniškem jezeru [Kmecl, P. & Rižner, K. (1993): Pregled vodnih ptic in ujed Cerkniškega jezera; spremljanje številčnosti s poudarkom na preletu in prezimovanju. – Acrocephalus 14 (56/57): 4–31]. Zanimivo, da Kmecl in Rižner omenjata rdečenogo postovko kot redkega spomladanskega preletnika in ne navajata jesenskih podatkov. Za Slovenijo so povečini objavljeni le podatki o posameznih pticah [npr. Fekonja, D. (2000): Rdečenoga postovka *Falco vespertinus*. – Acrocephalus 21 (100): 165, Klemenčič, A. (2001): Rdečenoga postovka *Falco vespertinus*. – Acrocephalus 22 (106/107): 122] ali pa manjših skupinah [npr. Podhraški, Z. (1999): Rdečenoga postovka *Falco vespertinus*. – Acrocephalus 20 (97): 198]. Večje število tako opaženih skupin kot osebkov v teh skupinah rdečenogih postovk je omejeno na Ljubljansko barje [Tome, D., Sovinc, A. & Trontelj, P. (2005): Ptice Ljubljanskega barja. Monografija DOPPS Št. 3. – DOPPS, Ljubljana], Cerkniško jezero in Dravsko polje [Bombek, *osebno*].

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Žerjav *Grus grus*

Crane – a flock of 107 individuals observed on 30 Oct 2006 and another flock (number of individuals unknown) on 28 Dec 2006, both at Gajevci (UTM WM73, SV Slovenia)

Dne 30.10.2006 ob petih popoldne sem nad Gajevci zaslišal oglašanje žerjavov. Jata v obliki klina je štela 107 osebkov. Leteli so nad reko Dravo po toku navzgor. Dne 28.12.2006 sem malo pred pol osmo zvečer v naselju Gajevci zaslišal trobentanje žerjavov. Glede na to, da je bila tema, ptic nisem videl, vendar pa je bilo njihovo oglašanje slišati kar nekaj časa. Možni sta dve razlagi: da me je preletela velika jata žerjavov, ali pa se je jata zgolj nekaj časa zadrževala na istem mestu.

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Veliki prodnik *Calidris canutus*

Knot – one individual startled from the bank in the northeastern part of Medvedce reservoir (UTM WM53, SE of Pragersko, NE Slovenia) on 13 Sep 2006, which is the first record of this species for Medvedce; a Little Stint *Calidris minuta* was also seen feeding on a mudflat on the opposite side of Medvedce; on the water, 12 Black-necked Grebes *Podiceps nigricollis* and 14 Ferruginous Ducks *Aythya nyroca* were observed

13.9.2006 je bil povsem običajen dan za zadrževalnik Medvedce (JV od Pragerskega, SV Slovenija) v tem delu leta. Čeprav se je na njem zadrževalo nekoliko manj lisk *Fulica atra* kot običajno, je skupno število vodnih ptic krepko preseglo številko pet tisoč. Sliko vodnih ptic je dopolnilo 12 črnovratih ponirkov *Podiceps nigricollis* in 14 kostanjevk *Aythya nyroca*. Zrak pa sta zapolnila mlad belorepec *Haliaeetus albicilla* in nekoliko zapozneli seleči se sršenar *Pernis apivorus*. Na majhnem blatnem poloju sem opazoval malega prodnika *Calidris minuta*, in sicer prvi osebek v letu 2006, drugače pa je v posameznih letih na zadrževalniku dokaj pogosta selivka. Na drugi strani zadrževalnika pri betonskem iztoku pa sem opazoval njegovega večjega bratranca, velikega prodnika. Splašil sem ga med prehranjevanjem po kamnih tik nad vodo. Ko je vzletel, sem opazil pepelasto siv hrbet in kontrastno temnejše peruti, ki jih je dopolnjevala vzdolžna bela črta. Za nameček se je splašeni osebek še nekajkrat nežno oglasil in se skril nekje na nasipu. Gre za prvi podatek o velikem prodniku na zadrževalniku Medvedce [Kerček, M. (2005): Ptice akumulacije Medvedce. – Diplomsko delo, Univerza v Mariboru; *lastni podatki*].

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Zelenonogi martinec *Tringa nebularia*

Greenshank – 9 adults observed in a flooded field at Zgornja Pristava (UTM WM63) and 3 individuals on a dunghill at Gorišnica (UTM WM74, NE Slovenia) on 30 Apr 2006

Pri Zgornji Pristavi v Dravinjski dolini sva 30.4.2006 na poplavljeni njivi opazila 9 osebkov zelenonogih martincev. Istega dne so se trije osebki zadrževali tudi na gnojišču v Gorišnici na Ptujskem polju. V obdobju spomladanske in jesenske selitve se v tem koncu Slovenije, denimo na akumulaciji Medvedce, zelenonogi martinci dokaj redno pojavljajo z vrhom ravno v aprilu [Kerček, M. (2005): Ptice akumulacije Medvedce. – Diplomsko delo, Univerza v Mariboru]. Očitno kot postaje na selitvi zanje niso zanimiva zgolj večja in stalna vodna telesa, pač pa tudi manjše in občasne luže, kjer se seleči se martinci raztreseno v manjših skupinah ustavljajo po spomladanskih nevihtah.

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Kaspijska čigra *Sterna caspia*

Caspian Tern – one individual observed while feeding in a canal leading to Medvedce reservoir (UTM WM53, SE of Pragersko, NE Slovenia) on 29 Mar 2006; this is the first record for Medvedce

Med obiskom zadrževalnika Medvedce (JV od Pragerskega, SV Slovenija) dne 29.3.2006 sem nad vhodnim kanalom za zadrževalnik na severni strani opazil večjo čigro. V njej sem prepoznal kaspijsko čigro, ki dotlej na zadrževalniku še ni bila opazovana [Kerček, M. (2005): Ptice akumulacije Medvedce. – Diplomsko delo, Univerza v Mariboru; *lastni podatki*]. En osebek je lovil v nizkem letu nad dotočnim kanalom, ločeno od drugih čiger in galebov.

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Smrdokavra *Upupa epops*

Hoopoe – one male heard on 10 May 2007 near Pokojišče on Menišija plateau (UTM VL48, C Slovenia) at 720 m a.s.l.; two more individuals observed on the western edge of Snežnik plateau (UTM VL45, SW Slovenia) on 7 Jun 2007 at 760 m a.s.l. and 22 Jun 2007 at 830 m a.s.l.

Dne 10.5.2007 sem popisoval kaluže na Pokojiški planoti. Nedaleč od Pokojišča približno 500 m severno od vrha Vršiča na nadmorski višini 720 m sem popoldne zaslišal teritorialno oglašanje samca smrdokavre. Ko sem se mu približal, se je nehal oglašati in tudi videl ga nisem v tej mozaični krajini pašnikov, grmičevja in gozda. Kasneje sem lokacijo še nekajkrat obiskal, vendar smrdokavre nisem več slišal. Na območju Pokojiške planote skozi vse leto na prostem pasejo več deset glav goveda, kar verjetno prek žuželk, ki se prehranjujejo z iztrebki, prispeva k zboljšanju prehranske osnove za to vrsto. Kljub temu do letos tukaj smrdokavre še nisem zasledil. Zanimivo je, da je bilo letošnjo nadpovprečno toplo pomlad opaziti povečano število smrdokaver tudi na Ljubljanskem barju [Ž. Šalamun, *osebno*]. Po meni dostopnih podatkih je opisano opažanje prvi podatek za Menišijo, najbližja opažanja pa so znana iz okolice Rakeka [L. Kebe, *osebno*], Ivanjega Sela [*lasten podatek*] ter iz Krimskega hribovja in Ljubljanskega barja [Geister, I. (1995): Ornitološki atlas Slovenije. – DZS, Ljubljana]. Poleg tega sem se istega leta srečal s smrdokavro na višjih nadmorskih višinah še dvakrat, in sicer na kraških travnikih na zahodnem robu Snežniške planote. En osebek sem opazoval 7.6.2007 nad Koritnicami na nadmorski višini 760 m, drugega pa 22.6.2007 pri Jurščah na 830 m n.m.v.

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Bela pastirica *Motacilla alba yarrelli*

Pied Wagtail – on 15 Mar 2006, a single Pied Wagtail observed at Medvedce reservoir (UTM WM53, SE of Pragersko, NE Slovenia), feeding on the reservoir's muddy bank among White Wagtails ssp. *alba*

Dne 15.3.2006 sem se mudil na zadrževalniku Medvedce (JV od Pragerskega, SV Slovenija). Le-ta še ni bil čisto poln in na robovih so se kazale še blatne površine, ki so jih s pridom izkoriščale predvsem seleče se bele pastirice. Medtem ko sem stal na severnem delu nasipa in gledal skozi teleskop, sem si mimogrede ogledal še meni najbližjo belo pastirico. Takoj je pritegnila vso mojo pozornost, saj ni bila takšna, kot sem pričakoval. Na prvi pogled je bila precej temnejša. Imela je črn hrbet, posut z manjšimi temno sivimi lisami, kar verjetno nakazuje na mladega samca. Peruti je imela podobne barve, kar je dajalo velik kontrast z belimi lisami. Tudi boki so dajali temnejši vtis. Hitro sem preveril še druge pastirice, ki pa so bile povsem običajne. Dan na zadrževalniku so zapolnili rečni galebi *Larus ridibundus*, 1,055 osebkov, kar je doslej največje število za zadrževalnik [Kerček, M. (2005): Ptice akumulacije Medvedce. – Diplomsko delo, Univerza v Mariboru; *lastni podatki*]. Zanimivi so bili tudi grivarji *Columba palumbus*, ki so se selili čez zadrževalnik. Opazil sem tri jate s 180, 80 in 50 osebki.

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Rumeni vrtnik *Hippolais icterina*

Icterine Warbler – late singing of territorial male near Petanjci along the Mura river (UTM WM86, NE Slovenia); the bird was observed singing on 21 Jun 2006, and again on 3 Jul 2006 from nearly the same place in a wet tree stand of Alder *Alnus glutinosa* and Aspen *Populus tremula*

Rob areala rumenega vrtnika Slovenijo zgolj oplazi na njeni severni meji [Faivre, B & Ferry, C. (1997): Icterine Warbler *Hippolais icterina*, pp. 580-581 In: Hagemeijer, E.J.M. & Blair, M.J. (eds.): The EBCC Atlas of European Breeding Birds. – T & AD Poyser, London], zato ni čudno, da velja pri nas za zelo redko in nezanesljivo gnezdilko [Geister, I. (1995): Ornitološki atlas Slovenije. – DZS, Ljubljana]. Težavo pri določanju vrtnikovega gnezditvenega statusa v Sloveniji še dodatno povzročajo pojoče ptice na selitvi, ki se pri nas pojavljajo še razmeroma pozno. Le malo je namreč takšnih podatkov, kjer bi se pojoči teritorialni samec na enem mestu zadrževal dalj časa in tako kazal na zaseden teritorij oziroma možnost gnezditve. Loka ob Muri je znan kraj pojavljanja rumenih vrtnikov, in tako sem dne 21.6.2006 v močvirnem sestoju črne jelše *Alnus glutinosa* in trepetlike *Populus tremula* pri Petanjcih (UTM WM86) poslušal petje rumenega vrtnika. Ptica je pela visoko v krošnji trepetlike in za trenutek sem tudi ujel pogled na pojočega samca. Kljub poznemu datumu sem kraj še enkrat obiskal dne 3.7.2006. Vrtnik je še vedno pel skoraj z istega mesta, zato sklepam, da je šlo za teritorialnega samca, ki je na območju tudi gnezdil, seveda če je priklical samico.

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Belovrati muhar *Ficedula albicollis* & pogorelček *Phoenicurus phoenicurus*

Collared Flycatcher & Redstart – on 7 Jun 2006, during the bird census, one male Capercaillie *Tetrao urogallus* was startled from the tree at Konjiška gora (UTM WM33, NE Slovenia); in an old beech forest on the top of the hill, two singing Collared Flycatcher males and two singing Redstart males were observed; from the observation tower, 184 Swifts *Apus apus* were counted; on the top of the hill (1,012 m a.s.l.), a Marsh Tit *Parus palustris* and a Willow Tit *Parus montanus* few metres below it were also observed, singing simultaneously

Dne 7.6.2006 sem na južni strani Konjiške gore (SV Slovenija) drugič popisoval tetrado s koncem na vrhu Stolpnika. Ker sem prvo tetrado popisoval v snežnem viharju v skoraj popolni ptičji tišini, to pot nisem pričakoval nič posebnega. Kljub vsemu pa sem dočakal prvo presenečenje že nekje na pol poti, ko je z veje nad mano poletel splašeni samec divjega petelina. Malo pod vrhom Stolpnika me je čakalo drugo presenečenje, saj je visoko v bukovi krošnji pel pogorelček, meni drugače bolj znan kot gnezdilec visokodebelnih sadovnjakov. Še preden sem se usedel na klopco na vrhu Stolpnika (1012 m n.m.v.), da bi zaključil tetrado, sem zaslišal neutrudno petje belovratega muharja. Kmalu sem zaznal tudi petje drugega samca, ki je pel nekoliko pod samim vrhom. S stolpa, ki je postavljen na vrhu, sem opazoval še jato 184 hudournikov *Apus apus*, ki so se prehranjevali nad krošnjami dreves. Na poti nazaj sem našel še enega pojočega samca pogorelčka. Zanimivost te tetrade sta bili tudi gorska sinica *Parus montanus* in močvirska sinica *Parus palustris*, ki sta skupaj peli na vrhu Stolpnika. Gorska sinica je pela celo na nižji nadmorski višini kot močvirska. Sicer pa je bilo petje gorske sinice eno redkih petij že med prvim popisom te tetrade.

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Škorec *Sturnus vulgaris* & priba *Vanellus vanellus*

Starling & Lapwing – on 26 Feb 2007 at 13.00 hrs in the villages of Borovci and Sobetinci (UTM WM73, NE Slovenia), large flocks of Starlings were observed: 3,300 ind. at Borovci and 520 ind. together with a small flock of Lapwings (90 ind.) at Sobetinci

Med vožnjo iz smeri Ptuja proti Ormožu sem v kraju Borovci dne 26.2.2007 ob 13 h opazil veliko jato škorcev (3,300 os.). Škorci so tvorili značilno formacijo, ki jo po zgledu lahko primerjamo z rojem čebel. Take oblike jate sem večkrat opazoval, ko je jato ogrožal skobec. Skupina je večkrat naglo spreminjala smer. Zanimivo je bilo, da je jati sledila jata prib in se tudi večkrat pomešala znotraj jate škorcev. Drugo, vendar manjšo jato sem opazil v kraju Sobetinci. V jati je bilo 520 škorcev in 90 prib.

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Ščinkavec *Fringilla coelebs*

Chaffinch – on 17 Mar 2006, spring migration of Chaffinches over a house at Dravski dvor on Dravsko polje (UTM WM54, NE Slovenia) was observed; 1,533 individuals in 57 flocks ranging from one to 100 individuals were counted; 119 Starlings *Sturnus vulgaris*, 31 Wood Pigeons *Columba palumbus* and 154 Lapwings *Vanellus vanellus* were also counted during that particular day

Vsako spomlad se veselim prvih preletnikov, ki naznanjajo prihajajočo pomlad. Tako sem 17.3.2006 doma opazoval selitev manj pričakovane vrste. Priča sem namreč bil selitvi ščinkavcev. Do 13. ure sem naštel 1,533 osebkov v 57 jatah, ki so štele od enega do 100 osebkov. Verjetno je tega dne preletelo našo hišo še precej več ščinkavcev, saj sem največje jate opazoval zjutraj, ko sem bil na sprehodu v gozdu, a takrat nisem bil pozoren na jate teh ptic. Selitev so v tem času dopolnili še škorci *Sturnus vulgaris* s 119 osebki v šestih jatah, grivarji *Columba palumbus* z 31 osebki v petih jatah in pribe *Vanellus vanellus* s 154 osebki v treh jatah.

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Hrvaška / Croatia

Hobby *Falco subbuteo*

Škrjančar – 1 osebek opazovan na otoku Olibu (UTM VK81, S Dalmacija) dne 5.6.2007

A single individual of the Hobby was observed on 5 Jun 2007, about 300 m northeast from the church located on the seashore in the bay of Sveti Nikola harbour on the island of Olib (UTM VK81). According to Rucner, Hobby is often seen in June along the Croatian coastline [Rucner, D. (1998): Ptice hrvatske obale Jadrana. – Hrvatski prirodoslovni muzej, Ministarstvo razvitka i obnove, Zagreb], however, there are no current data about this bird breeding in the area [Kralj, J. (1997): Ornitofauna Hrvatske tijekom posljednjih dvjesto godina. – Larus 46: 1–112]. In addition to Hobby, birds of prey observed during the days spent on Olib (29–31 May 2007, 4–5 Jun 2007) included 2–3 Buzzards *Buteo buteo*

and a pair of Kestrels *Falco tinnunculus*, appearing almost every day, which suggests that the latter two species probably breed on the island.

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Little Tern *Sterna albifrons*

Mala čigra – dne 3.6.2007 je bilo najdeno novo verjetno gnezdišče na Hrvaškem, na otoku Silba (UTM VK71, S Dalmacija) v zalivu Sv. Ante; opažen je bil par pri hranjenju treh mladičev

The total breeding population of Little Terns in Croatia is estimated at about 60–75 pairs [Radović, D., Kralj, J., Tutiš, V. & Ćiković, D. (2003): Crvena knjiga ugroženih ptica Hrvatske. – Ministarstvo zaštite okoliša i prostornog uređenja, Zagreb], therefore any new data indicating the breeding of this species can be significant for the survival and conservation of the population. On 3 Jun 2007, a pair of Little Terns was observed feeding their three fledged chicks in the western corner of the bay of Sveti Ante harbour, on the island of Silba (UTM VK71). It was possible to approach the chicks to a distance of about 10 metres before they took wing. As soon as we were a few metres away, the birds landed again on the rocks emerging above the sea, and the parents continued to feed them. In addition to the Little Terns, there were also one Common Tern *Sterna hirundo* and five Yellow-legged Gulls *Larus cachinnans* in the bay. Outside the bay, about 100–200 metres from the Little Terns, about 50 Shags *Phalacrocorax aristotelis* were swimming in the sea, close to each other. It is most likely that the Little Terns hatched their clutch on the pebbly beach.

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Spanish Sparrow *Passer hispaniolensis*

Travniški vrabec – skupaj je bilo preštetih 117 parov travniških vrabcev na otoku Pagu med 27 in 29.5.2007: Dinjiška (UTM WK11) – 21 parov, Vlašići (UTM WK10) – 50 parov, Stara Vas (UTM WK11) – 5 parov, Caska (UTM VK93) – 2 para, Vidalići (UTM VK93) – 2 para, Kustići (UTM VK93) – 15 parov, Zubovići (UTM VK92) – 15 parov, Metajna (UTM WK02) – 2 para, Stara Novalja (UTM VK83) – 5 parov

The Spanish Sparrow was first recorded on the island of Pag (Kolansko blato) in 1959 [Igalffy, K. (1980): Prilog poznavanju ptica otoka Paga. – Larus 31/32: 55–89]. Since the 1990s, it has been breeding regularly on the island (Gajac, Kolana, Novalja, Pag), the number of nesting pairs reaching a few hundred [Denac, K. & Denac, D. (2002): Spanish Sparrow *Passer hispaniolensis*. – Acrocephalus 23: 105, Lukač, G. (2004): About the widening of the range and the status of the Spanish Sparrow (*Passer hispaniolensis*) in Croatia at the beginning of the 21st century. – Paklenički zbornik 2: 113–122]. During our field surveys carried out on the island of Pag between 27–29 May 2007, a total of about 117 pairs of Spanish Sparrows were counted: Dinjiška (UTM WK11) – 21 pairs, Vlašići (UTM WK10) – 50 pairs on the building "Zavičaj – kulturno prosvjetni centar i odmaralište Hrvata u Mađarskoj", Stara Vas (UTM WK11) – 5 pairs, Caska (UTM VK93) – 2 pairs, Vidalići (UTM VK93) – 2 pairs, Kustići (UTM VK93) – 15 pairs, Zubovići (UTM VK92) – 15 pairs, Metajna (UTM WK02) – 2 pairs, Stara Novalja (UTM VK83) – 5 pairs. Mihelič reported on Eleonora's Falcon *Falco eleonorae* pursuing Spanish Sparrows at Kolansko blato [Mihelič, T. (2004): Eleonora's Falcon *Falco eleonorae*. – Acrocephalus 25: 98], whereas we have observed a Sparrowhawk *Accipiter nisus* catching a Spanish Sparrow on 27 May 2007 at Vlašići.

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Spanish Sparrow *Passer hispaniolensis*

Travniški vrabec – v začetku junija 2007 (4.–5.6.) sta na otoku Olibu (UTM VK81, S Dalmacija) verjetno gnezdila 1–2 para travniških vrabcev in 25–30 parov domačih vrabcev

Having arrived on the island of Olib (UTM VK81) on 29 May 2007, we saw the first Spanish Sparrow no later than on 31 May. At around 7.00 h, a male was spotted on a rooftop, about 100 m from the harbour, and a little while later another specimen was seen, 300 m from the location of the first occurrence. Between 1–3 Jun, we stayed on the

nearby island of Silba. There, only House Sparrows *Passer domesticus* were seen breeding (10–15 pairs), and no Spanish Sparrows were observed, despite repeated search. On 4 Jun, we returned to the island of Olib, where we succeeded again in observing male Spanish Sparrows at two different localities: on houses near the harbour and on the building of the school. On 4 and 5 Jun we attempted to make a census on the Olib sparrows, and found that the number of nesting pairs was possibly 1–2 pairs of Spanish Sparrows and about 25–30 pairs of House Sparrows.

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Najave in obvestila

Announcements

Nagrada Zlati legat 2005
The Golden Bee-eater Award 2005

Zlati legat je nagrada, ki jo DOPPS podeljuje za najboljše slovensko delo s področja ornitologije. Letos smo podelili nagrado za leto 2005, denarna sredstva zanjo je ponovno prispevalo podjetje Bioteh d.o.o. iz Ljubljane. Upravni odbor DOPPS je imenoval komisijo v sestavi: Petra Vrh Vrezec (članica), doc. dr. Nejc Jogan (član), Tomaž Mihelič (član) in dr. Primož Kmecl (predsednik), ki se je sestala 12.4.2007 in izbrala dela v ožji izbor, nominirana dela in nagrajeno delo. Za opravljeni izbor bi se želel na tem mestu članom komisije iskreno zahvaliti.

Dela ožjega izbora so vsa tista, ki jih predlaga vsak član komisije. Seznam ožjega izbora del je bil:

Božič, L.: Populacija kosca *Crex crex* na Ljubljanskem barju upada zaradi zgodnje košnje in uničevanja ekstenzivnih travnikov. – Acrocephalus 26 (124): 3–21.

Božič, L.: Rezultati januarskega štetja vodnih ptic leta 2004 in 2005 v Sloveniji. – Acrocephalus 26 (126): 123–137.

Denac, D. (2003): Upad populacije in sprememba rabe tal v lovnem habitatu rjavega srakoperja *Lanius collurio* v Šturmovcih. – Acrocephalus 24 (118): 97–102.

Govedič, M., Janžekovič, F. & Kos, I. (2002): Prehrana kormorana *Phalacrocorax carbo* na območju reke Save od Ljubljane do Zagorja. – Acrocephalus 23 (110/111): 5–20.

Gregori, J. & Šere, D. (2005): Ptiči Šaleških jezer in okolice. – Prirodoslovni muzej Slovenije, Ljubljana.

Mihelič, T. & Genero, F.: Occurrence of Griffon Vulture *Gyps fulvus* in Slovenia in the period from 1980 to 2005. – Acrocephalus 26 (125): 73–79.

Polajnar, J. & Bordjan, D.: Sezonska dinamika števila sivih čapelj *Ardea cinerea* ob reki Savinji med Celjem in Zidanim Mostom (SV Slovenija). – Acrocephalus 26 (127): 181–186.

Polak, S., Kebe, L. & Koren, B. (2004): Trinajst let popisov kosca *Crex crex* na Cerkniškem jezeru. – Acrocephalus 25 (121): 59–70.

Tome, D., Sovinc, A. & Trontelj, P. (2005): Ptice Ljubljanskega barja. Monografija DOPPS št. 3 – DOPPS, Ljubljana.

Vrezec, A. & Tome, D. (2004): Altitudinal segregation between Ural Owl *Strix uralensis* and Tawny Owl *S. aluco*: evidence for competitive exclusion in raptorial birds. – Bird Study 51(3): 264–269.

Sledil je izbor nominirancev. Izbrana so bila naslednja tri dela:

Denac, D. (2003): Upad populacije in sprememba rabe tal v lovnem habitatu rjavega srakoperja *Lanius collurio* v Šturmovcih. – Acrocephalus 24(118): 97–102.

Govedič, M., Janžekovič, F. & Kos, I. (2002): Prehrana kormorana *Phalacrocorax carbo* na območju reke Save od Ljubljane do Zagorja. – Acrocephalus 23(110/111): 5–20.

Gregori, J. & Šere, D. (2005): Ptiči Šaleških jezer in okolice. – Prirodoslovni muzej Slovenije, Ljubljana.

Izmed nominiranih del je največje število točk prejelo delo Janeza Gregorija in Dareta Šereta, zato je bila nagrada Zlati legat 2005 podeljena njima.

Nagrajeno delo je žlahtna mešanica strokovnega in poljudnega dela ter je primerno tako kot vir strokovnih podatkov kot tudi vir motivacije ljubiteljev ptic in narave. Delo je izjemno lepo in natančno napisano ter obdelano, odlična preglednost in berljivost pa ga postavljata v sam vrh sorodnih publikacij. Pester nabor metodologij pri raziskavi manjšega območja pa je inovacija v slovenskem prostoru. Zaradi teh lastnosti se je žirija kljub hudi konkurenci odločila podeliti nagrado Zlati legat za leto 2005 prav delu Ptiči Šaleških jezer in okolice Janeza Gregorija in Dareta Šereta.

Vsem, ki ste sodelovali s svojimi prispevki, predvsem pa nominirancem in seveda nagrajencema iskreno čestitam.

Primož Kmecl, predsednik žirije Zlati legat 2005

Čestitam

Janezu Gregoriju in Daretu Šeretu

ob podelitvi nagrade ***Zlati legat 2005***

za delo

»Ptiči Šaleških jezer in okolice«

Prirodoslovni muzej Slovenije, Ljubljana

Primož Kmecl, *glavni urednik*

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