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sciendo

Sobivanje ptic in kmetijstva?

Cohabitation between birds and agriculture?

Intenzifikacija kmetijstva se je v Evropi pričela med drugo svetovno vojno iz potrebe po samooskrbi s pridelki. Kmetje so z uporabo različnih tehnologij želeli povečati učinkovitost obdelovanja zemlje in njeno produktivnost. Intenzifikacija je temeljila predvsem na uvedbi nove mehanizacije, gnojilih in pesticidih, nekoliko manj pa na izsuševanju površin ter žlahtnjenju rastlin. Spremembe v kmetijstvu so na ptice vplivale in še vedno vplivajo neposredno (izguba habitata, negativni vpliv mehanizacije, motenj in pesticidov na smrtnost ali gnezditveni uspeh) in posredno (spremembe v količini hrane, kvaliteti gnezdišč in prehranjevališč) (Fuller 2000, Newton 2004). Če so nekdaj ptice kmetijske krajine uspevale zaradi kmetovalnih praks, pa sedaj životarijo prav zaradi njih. Dokazov o negativnem vplivu intenzifikacije kmetijstva na ptice je ogromno, članki na to temo so skoraj nepreštevni. Naravovarstvena stroka se strinja o obstoju tega perečega problema, v zadnjem desetletju ali dveh pa je pričela že tudi ponujati rešitve. Te zahtevajo sodelovanje z obdelovalci in lastniki zemljišč, predvsem pa angažiranje stroke pri oblikovanju pravil skupne kmetijske politike, konkretno na primer kmetijsko-okoljsko-podnebnih ukrepov (KOPOP). Sobivanje modernega kmetijstva in ptic v primerih nekaterih vrst zahteva zgolj manjše prilagoditve kmetovanja, v drugih primerih pa so sodobne kmetijske prakse nezdružljive z dolgoročnim preživetjem vrst (npr. pri koscu *Crex crex*, repaljščici *Saxicola rubetra*) in bi za njihovo varstvo potrebovali večja sklenjena območja, kjer bi kmetijstvo narekovali varstveni režimi. Ker je nerealno pričakovati, da se bo proces intenzifikacije kmetijstva v Evropi kmalu zaustavil ali celo obrnil, ptice pa gnezdijo tudi na najbolj enoličnih in intenzivnih njivah, si pred problemom ne moremo zatiskati oči. V nadaljevanju so predstavljene nekatere možnosti varovanja gnezdilk na njivah.

Poljski škrjanec *Alauda arvensis*, katerega evropska populacija je v obdobju 1980–2016 upadla za 53 % (EBCC 2019), slovenska pa v pičlem desetletju (2008–2018) za 59,7 % (Kmecl & Šumrada 2018), je izvorno sicer gnezdilec step, vendar je dandanes v Evropi najpogostejši na velikih njivah. V Veliki Britaniji, Nemčiji, Švici in na Danskem so znanstveniki ugotovili, da so gnezditvena gostota, gnezditveni uspeh, telesna kondicija speljanih mladičev in/ali število poskusov gnezdenja poljskega škrjanca v sezoni večji na njivah s ploskvami golih tal kot na konvencionalno zasejanih njivah. Zaplate golih tal so ustvarili tako, da so med setvijo ugasnili sejalnico; skupna površina golih tal na hektar površine je znašala 32–144 m^2, razdeljena je bila na dve do štiri ploskve (Odderskær *et al.* 1997, Morris *et al.* 2004, Fischer *et al.* 2009, Schmidt *et al.* 2017). Zgolj ohranjanje omejkov, torej travnatih robov med njivami, na primer na Nizozemskem za poljskega škrjanca ni dalo želenih rezultatov, saj je za robne habitate značilna velika stopnja plenjenja (Kuiper *et al.* 2015). Hribski škrjanec *Lullula arborea* pri nas gnezdi v dveh povsem različnih

habitatih – na zahodu Slovenije na suhih travnikih in pašnikih z redko lesno vegetacijo, na Goričkem pa predvsem na njivah s praho ali žitom. Te so zaradi časovnega ujemanja s kmetijskimi opravili (oranje, brananje, setev, nanos fitofarmacevtskih sredstev in umetnih gnojil) zanj lahko ekološka past (Denac 2018a). V letošnjem letu bomo skupaj s kolegi iz Javnega zavoda Krajinski park Goričko obiskali avstrijske ornitologe, ki so razvili različne kmetijsko-okoljske ukrepe za njive, s katerimi želijo izboljšati njegov gnezditveni uspeh na Zgornjem Štajerskem. Med ukrepi so prepoved opravljanja kmetijskih del na njivah med 15. 4. in 31. 5., spodbujanje malopovršinskega (0,5–1,5 ha) ekstenzivnega kmetovanja na ovršnih delih gričev, gojenja okopavin in spomladanskih žit, ohranjanje strnišč do 15. 2., izogibanje uporabi gnojil in pesticidov pri gojenju zimskih žit, zasaditev in vzdrževanje mejic ter posameznih dreves, vzpostavljanje večletnih cvetnih pasov, zasejanih z avtohtono plevelno vegetacijo (Uhl *et al*. 2008, Uhl & Rubenser 2012). Poleg varstva ekstenzivnih suhih travnikov, ki smo se ga lotili v okviru projekta Gorička krajina, bo na Goričkem namreč treba najti učinkovite in dolgoročne načine varovanja na njivah gnezdečih hribskih škrjancev.

V Angliji so populacijo plotnega strnada *Emberiza cirlus* povečali za skoraj štirikrat s finančnim spodbujanjem gojenja jarega žita, sejanega na površinah, kjer so čez zimo pustili strnišče in mu s tem zagotovili zimska prehranjevališča. Vrsti je koristila tudi uvedba obveznega puščanja prahe leta 1992 ter zasaditev mejic (Aebischer *et al*. 2000). Zasaditev lesne vegetacije zelo koristi tudi rjavemu srakoperju *Lanius collurio*, ki za gnezdenje ne potrebuje velikih in gostih sestojev grmovja, pač pa mu zadoščajo že posamezni trnasti grmi (Kuźniak 1991, Casale *et al*. 2013), zasajeni ob rob travnika, pašnika, kolovoza ali njive. Druga možnost je, da ob robovih obdelovalnih površin postavimo t.i. Benjeseve mejice, to so v 1 – 2 m visok kup zložene odrezane veje (trnastega) grmovja. Dostopnost plena mu lahko izboljšamo s postavitvijo lovnih prež, 1–5 m visokih lesenih kolov, s katerih poletava na tla (van Nieuwenhuyse *et al*. 1999). Postavitev kolov je smiselna na meji med habitati z različno visoko in strukturirano vegetacijo, npr. med travnikom in njivo ali med travnikom in kolovozom. Enak ukrep se je kot zelo uspešen izkazal tudi na Ajdovskem polju za črnočelega srakoperja *Lanius minor* (Denac 2015) ter na Goričkem za zlatovranko *Coracias garrulus* (Domanjko & Gjergjek 2014, Denac *et al*. 2014, 2017) in velikega skovika *Otus scops* (Denac 2018b). Slednja vzporedno z izboljševanjem prehranjevalnih razmer potrebujeta tudi gnezdišča, ki jih najhitreje zagotovimo s postavitvijo gnezdilnic, dolgoročno pa z zasaditvijo visokodebelnega sadovnjaka ali drevesne mejice. Prosnik *Saxicola torquata* je poleg poljskega škrjanca tipična gnezdilka intenzivne kmetijske krajine v Sloveniji, kar je bilo ugotovljeno na Dravskem polju (Vogrin & Vogrin 1998) in na Goričkem (DOPPS *lastni podatki*). Njegova populacija v slovenski kmetijski krajini je v obdobju 2008–2018 strmo upadla (Kmecl & Šumrada 2018), najverjetneje zaradi izginjanja drobnih elementov, ki mu v intenzivni krajini omogočajo preživetje. Tako je z nekaterih delov Goričkega izginil po opravljenih komasacijah, ki jim je sledila odstranitev že tako pičle lesne vegetacije in omejkov (K. Malačič *osebno*). Na Dravskem polju se pojavlja le na njivah, ki imajo na robu kakšen grm oz. na katerih

rastejo visoke steblike, npr. osati *Cirsium* spp. (Vogrin & Vogrin 1998). Prosniku bi torej lahko pomagali z ohranjanjem omejkov (po komasaciji bi morali ohraniti drobno strukturiranost parcel), posameznih grmov ali manjših otokov lesne vegetacije na robu njiv in s postavitvijo nizkih lovnih prež (1–2 m) v robne habitate.

Tudi za pribo *Vanellus vanellus* so tuji strokovnjaki razvili vrsto ukrepov, ki pa za zdaj – z redkimi izjemami – še ne dajejo želenih rezultatov, saj na gnezdeče pribe poleg kmetijskih opravil na njivah vpliva tudi visoka stopnja plenjenja. Večanje deleža površin s praho in spomladi sejanimi poljščinami (jaro žito, okopavine) (Sheldon *et al.* 2004), ustvarjanje cvetnih pasov, kamor se lahko zatečejo mladiči po izvalitvi in zakasnitev kmetijskih del vsaj do izvalitve mladičev (Müller *et al.* 2009) so finančno razmeroma nepotratni ukrepi, ki jih lahko kmet uresniči sam. Pri bolj vsebinsko in časovno zahtevnih ukrepih je nujna pomoč strokovnjaka, na primer pri iskanju in diskretnem označevanju gnezd, ki se jim nato kmet ob obdelavi tal izogne ali pa se gnezdo začasno odstrani in se ga po opravljenih delih namesti nazaj (Müller *et al.* 2009, Beyer *et al.* 2015, Bergmann 2016, Skibbe 2016, Eikhorst & Eikhorst 2017), pri prekrivanju gnezd z vedri med nanašanjem pesticidov in gnojil (Müller *et al.* 2009), fizičnem varovanju gnezd z železno kletko, nameščeno čeznje (Beyer *et al.* 2015, Skibbe 2016), ki lahko zaradi svoje očitnosti povečajo stopnjo plenjenja (Beyer *et al.* 2015, Eikhorst & Eikhorst 2017), ali pa pri ograditvi njiv z gnezdi z 90 cm visoko električno ograjo, ki zmanjša stopnjo plenjenja (Müller *et al.* 2009, Rickenbach *et al.* 2011).

V prihodnjih nekaj letih bomo tudi v Sloveniji preskusili nekatere varstvene ukrepe za ptice kmetijske krajine, predvsem v okviru različnih projektov, financiranih iz shem kohezijskega sklada in LIFE. Če bodo imeli pozitiven učinek na ciljne in druge vrste, se bomo trudili za njihovo vključitev med KOPOP za naslednje finančno obdobje (2021–2027). V veljavnih KOPOP za obdobje 2015–2020 namreč obstaja le en pticam namenjen ukrep, in sicer "Habitati ptic vlažnih ekstenzivnih travnikov" (VTR), ki je osredotočen na kosca *Crex crex*. Umestitev med KOPOP omogoča – seveda ob ustrezno visoki subvenciji za kmeta in terenski podpori kmetijskih svetovalcev – da ukrep doseže večjo površino (in s tem svoj namen) in trajnost. Zadnje, kar si namreč želimo, je, da ukrepi po izteku projekta ostanejo mrtva črka na papirju. Naša naloga je, da pri iskanju učinkovitih ukrepov sodelujemo z izkušenimi tujimi strokovnjaki, da ukrepe preskusimo v naših razmerah in da jim izbojujemo mesto v državni kmetijski politiki. Kajti slabo stanje "nekih metuljčkov in ptičkov" je tesno povezano s kvaliteto našega, človeškega bivalnega okolja in bi moralo pri ljudeh že davno prižgati vse alarme.

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In Europe, agricultural intensification began to be practised during World War II in need of food self-sufficiency. With utilization of various technologies, farmers strove to increase the efficiency of soil cultivation and its productivity. The intensification was based primarily on the introduction of new mechanization, fertilizers and pesticides and, to a

lesser extent, on land claiming and "ennobling" of plants. The changes in agricultural practice affected (and still affect) birds directly (habitat loss, negative impacts of mechanization, disturbances and pesticides on mortality or breeding success) and indirectly (changes in food quantity and quality of breeding and feeding sites) (Fuller 2000, Newton 2004). If birds in agricultural landscape once proliferated owing to agricultural practices, they now live a miserable existence on the very account of them. There is enormous evidence of the agricultural intensification's negative impacts on birds as well as countless articles on this particular subject. Nature conservationists agree on the existence of this urgent problem, and in the last decade or two they indeed began to offer certain solutions. These demand cooperation with land tillers and owners and, above all, the experts' engagement in the making of common agricultural policy rules, concretely the agri-environment-climate measures (AECM). In cases of certain species, coexistence of modern agriculture and birds demands just some minor farming adaptions, while in other cases the modern agricultural practices are incompatible with long term survival of species (e.g. Corn Crake *Crex crex*, Whinchat *Saxicola rubetra*), which means that larger unfragmented areas would be needed for their conservation, where agriculture would be dictated by conservation regimes. But as it is totally unrealistic to expect that the process of agricultural intensification in Europe will soon stop or even reverse, we cannot turn a blind eye to the problem, given that birds breed in most monotonous and intensely farmed fields as well. Some possibilities of how to conserve field-breeders are presented in the ensuing text.

The Skylark *Alauda arvensis*, the European population of which decreased in the 1980–2016 period by 53% (EBCC 2019), whereas its Slovenian population fell in a mere decade (2008–2018) by 59.7% (Kmecl & Šumrada 2018), is originally a steppe-breeder, but is in Europe nowadays most abundant in large fields. In Great Britain, Germany, Switzerland and Denmark, scientists assessed that the breeding density, breeding success, body condition of fledged young and/or number of attempts by Skylark to breed in the season are greater in fields with bare soil surfaces than in conventionally sawn fields. Patches of bare soil were created by simply turning off the seeder during sowing; the total area of bare soil amounted to 32–144 m^2, divided in two to four planes (Odderskær *et al*. 1997, Morris *et al*. 2004, Fischer *et al*. 2009, Schmidt *et al*. 2017). In the Netherlands, for example, the pure retainment of hedgerows, i.e. grassy edges between fields, gave no desired results for the Skylark, as boundary habitats are characterized by high predation level (Kuiper *et al*. 2015). In our country, the Woodlark *Lullula arborea* breeds in two totally different habitats – in western Slovenia in dry grasslands and pastures with sparse woody vegetation, while in the Goričko region (NE Slovenia) it breeds primarily in fields with set-aside land (fallow ground) or cereals. Owing to the time coincidence with agricultural activities (ploughing, harrowing, sowing, utilization of phytopharmaceutical agents and artificial fertilizers), these can turn out to be an ecological trap for this species (Denac 2018a). This year we are planning to visit, together with our colleagues from the Public Institute of Goričko Landscape Park, our Austrian colleagues, who

have developed various agricultural-environmental measures for fields, with the aid of which they wish to improve the Woodlark's breeding success in the Upper Styria. Among these measures are prohibition of agricultural activities in fields between 15 April and 31 May, promotion of small-scale (0.5–1.5 ha) extensive farming on the upper parts of hillocks, growing of root crops and spring cereals, retainment of stubbles till 15 February, avoiding application of fertilizers and pesticides for winter cereals, planting and maintenance of hedgerows and individual trees, and creation of multiyear flower strips planted with indigenous weed vegetation (Uhl *et al*. 2008, Uhl & Rubenser 2012). Apart from conserving extensively farmed dry grasslands, which we embarked upon within the framework of the "Gorička krajina project" , some effective and long-term conservation methods will have to be found for Woodlarks breeding in the fields.

In England, the population of Cirl Bunting *Emberiza cirlus* has been increased almost four – fold thanks to the financial stimulation for growing spring cereals, sown in places where stubbles were left over the winter to provide winter feeding sites for the species. Cirl Buntings also benefited from the introduction (1992) of compulsory letting the land lie fallow and planting of hedgerows (Aebischer *et al.* 2000). Planting of woody vegetation is highly beneficial also for the Red-backed Shrike *Lanius collurio*, which requires no large and thick shrub stands for breeding, but is satisfied merely by individual thorn bushes (Kuźniak 1991, Casale *et al.* 2013), planted on the edge of a meadow, pasture, cart track or field. Another possibility is to plant the Benjes (deadwood) hedges, 1–2 m high piles of stacked cut branches of (thorny) shrubs along the edges of tilled land. Prey access can be improved for the Red-backed Shrike by erecting perches, 1–5 m high wood poles from which it descends to the ground (van Nieuwenhuyse *et al*. 1999). The poles should be erected on the boundary between habitats with diversely structured vegetation of various heights, e.g. between grassland and field or between grassland and cart track. The same measure turned out to be very effective also at the Ajdovsko polje for the Lesser Grey Shark *Lanius minor* (Denac 2015), and at Goričko for the Roller *Coracias garrulus* (Domanjko & Gjergjek 2014, Denac *et al.* 2014, 2017) and the Scops Owl *Otus scops* (Denac 2018b). Parallel to the enhancement of feeding conditions, the last two species require breeding sites as well, which can quickly be established with nest boxes and, in the long run, with planting of either traditional orchard (with high-stemmed trees) or hedgerow trees. Stonechat *Saxicola torquata* is, apart from Skylark, a typical intensive agricultural landscape breeder in Slovenia, which was corroborated at Dravsko polje (Vogrin & Vogrin 1998) and Goričko (Bird Watching and Bird Study Association of Slovenia's *own data*). In Slovenian agricultural landscape, its population sharply declined in the 2008–2018 period (Kmecl & Šumrada 2018), most probably due to disappearance of tiny elements that enable its survival in intensive landscape. From some parts of Goričko, the species consequently disappeared after the carried out commassations, which were followed by removal of the already scanty wood vegetation and hedgerows (K. Malačič *personal communication*). At Dravsko polje it occurs only in fields bordered by a couple of bushes, or in which high-stemmed plants are striving, such as thistle *Cirsium* spp.

(Vogrin & Vogrin 1998). Consequently, the species could be helped by preserving hedgerows (after commassation, minute structuralization of plots should be retained), individual bushes or small islands of wood vegetation on the edges of fields and by erecting low perches (1 – 2 m) in boundary habitats.

For the Lapwing *Vanellus vanellus*, too, foreign experts developed a series of measures which have not produced, with a very few exceptions, desired results as yet, given that breeding Lapwings are affected not only by agricultural activities in the fields, but by high predation level as well. The increased share of set-aside land and cereals (spring cereals and root crops) (Sheldon *et al.* 2004), creation of flower strips where young can seek shelter soon after hatching, as well as postponed agricultural activities until the young are hatched (Müller *et al.* 2009) are, in financial terms, relatively frugal measures that can be implemented by farmers themselves. In more demanding measures with respect to contents and time, an expert's help is implicit, e.g. in the search and discrete marking of nests that can be avoided by farmers during tillage, or a nest is temporarily removed and then returned after the carried out jobs (Müller *et al.* 2009, Beyer *et al.* 2015, Bergmann 2016, Skibbe 2016, Eikhorst & Eikhorst 2017), in covering of nests with buckets during the application of pesticides and fertilizers (Müller *et al.* 2009), physical protection of nests with iron cages placed over them (Beyer *et al.* 2015, Skibbe 2016), which can due to their obviousness increase the predation level (Beyer *et al.* 2015, Eikhorst & Eikhorst 2017), or in fencing of fields with nests with app. 90 cm electric fences that decrease the predation level (Müller *et al.* 2009, Rickenbach *et al.* 2011).

In the ensuing few years, some protection measures for the birds of agricultural landscape will be tested in Slovenia as well, particularly within the framework of various projects financed from the Cohesion Fund schemes and LIFE. If they turn out to have a positive effect on target and other species, we shall do our best to include them among AECM for the ensuing financial period (2021–2027). Specifically, only one measure intended for birds subsists for the 2015–2020 period, i.e. the "wet extensive meadow bird habitats" , which is focused on the Corn Crake *Crex crex*. Its placing among AECM enables – with adequately high subsidy for farmers and field support of agricultural consultants, of course – a measure to reach a larger surface area (and its purpose with it) as well as sustainability. The very last thing we would wish for is that after the project termination the measures remain a dead letter. Our task is to participate with experienced foreign experts in the search for effective measures, to test the measures in our own conditions and to win a place for them in the national agricultural policy. For the fact is that a bad condition of some "little butterflies and birds" is closely associated with the quality of our human living environment and should have turned all alarms on in people ages ago.

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