

COMMUNITIES OF BREEDING BIRDS IN THE
PEATBOG REGION BETWEEN THE VILLAGES
INÁRCS AND ÓCSA, NEAR BUDAPEST, HUNGARY

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The shorten of the introduction may be possible in more respects on the base of my former paper (HORVÁTH, 1978) of the same kind. The territory of my present investigation does not coincide but only interweaves with one of the former. One-fifth of this area is forest and so four-fifth of it falls to the peat-bog marshes beginning about 30 km from the capital, and extending in southeast direction in roughly ten-fifteen km distance.

The peatbog marshes interweaving with the forest close by or they are inserted in. This fact is most essential from the point of view of the birdlife concerning the two types of landscape (forest, meadow) as I have referred in my work on the forest leaving birds (HORVÁTH, 1978).

Now was it valid as in the case of the forests that I have investigate in this district from 1952 to 1956. In this period I have had plentiful spare-times for the watching of the birdlife of the peatbog marshes apart of my main tasks the investigations of the life histories of the River Warbler (*Locustella fluviatilis*) and the Lesser Grey Shrike (*Lanius minor*), being the first one a forest breeder and the second a bird of acacia and poplar allées on dry soil in the immediate neighbourhood of the peatbogs. I did not publish the data of my investigations from this up to this date and so I have the possibility to compare the birdlife of today (1978) with one of the former (1952—1956) a quarter of a century in the mirror of the environmental changes.

In the valuation of the birdlife I were not satisfied with the data of occurring neither in former times (1952—1956) nor in latter (1978), but I have seen the birds in connections with their environments (ecology) and with mutual ones among themselves (coenology). I make known the results of my investigations of the peatbog region in question on a theory of mine based upon my researches all over the country (HORVÁTH, 1956). Also, this paper is a newer justification of my theory on breeding communities.

The territory of my present investigations from a topographical viewpoint can find in my paper mentioned above (HORVÁTH, 1978).

When the forests interweave in many places with the peatbog marshes in the neighbourhood than this is the case inversely too as I have told above. It is the fact that this circumstance succeeds as in the breeding communities of the forests as in the ones of the meadows.

Concerning the vegetation of the peatbog region I only refer conditions those are essential from the viewpoints of the settled bird for breeding purposes.

I must mention on the first place the large scale peat mining all over the marshes in the sixty's and at the beginning in the seventy's. After the

finishing the peathining greater and smaller pits rest in the meadows. The rains the subsoil water fulfill these holes and with elapse one or two years swampy lakes come into being. In time on the edge of these waterholes rank or scanty reedborders shoot. These circumstances made possible the appearance and moreover the breeding of such species those formerly were unknown in this region.

It belongs to the characterization of this district that the peatbog marshes did not or does not show a homogenous picture in themselves. Some parts of them standing apart of peatmining activities became clumps, on the wetter places sedges and bulrushes came into being. In such conditions further breeding species appeared in the peatbog marshes.

The third but not at all the most unessential circumstance in the birdlife of these peatbogs that it may find one or two willow bushes, single willow or poplar trees, here and there lesser groups of trees and allées too. These facts also make richer the variety of the really meadow breeding birdfauna. It is generally known that the birdlife of the moist treeless meadows and hayfields is very different from with bushes and lonely trees dotted — almost savanna like — ones.

I shall relate as follows the nesting birds of the marshy meadows between the villages Inárcs and Ócsa within the scope of the here proved breeding communities. Naturally, the results of my observations in 1978 I compare with the data originating from the years 1952—1956.

I commence my detailed discussion with the *Corvus cornix*-breeding community that has the II/1 serial number in my fundamental work of this kind. Here the Roman number means the type of country (meadow), the Arab one however the community of together nesting birds within this region. The breeding area according to the genuine determination (HORVÁTH, 1956): „sodden meadows, grassland dotted with willow and poplar trees and bushes”.

The permanent member of this — with the Hooded Crow as the leader characterized breeding community — is the Kestrel (*Falco tinnunculus*). However its subordinate members in the order of their frequency are as follows: Long-eared Owl (*Asio otus*), Little Owl (*Athene noctua*), Mallard (*Anas platyrhynchos*), Lapwing (*Vanellus vanellus*), Sky Lark (*Alauda arvensis*), Yellow Wagtail (*Motacilla flava*), Whinchat (*Saxicola rubetra*), Grasshopper Warbled (*Locustella naevia*), Corncrake (*Crex crex*), Quail (*Coturnix coturnix*), White Stork (*Ciconia ciconia*), Partridge (*Perdix perdix*), Whitethroat (*Sylvia communis*), Tree Sparrow (*Passer montanus*), Hoopoe (*Upupa epops*), Magpie (*Pica pica*), Wood Pigeon (*Columba palumbus*), and Jackdaw (*Corvus monedula*).

The enumerate subordinate species of the breeding community are not uniformly characteristic of frequent in the whole area of the peatbog marshes in question. These species appear in one or in other parts of the peatbog suitable for their nature and requirements.

However, the whole peatbog region is too small and fairly mosaiclike for that one or the other species occurs only in solely one part of the meadow, in those part where the environmental requirements especially suit well to his nature.

In the followings I shall investigate the ensued changes in the populations (frequency, density) of the members of the breeding community in question.

The leading species, the Hooded Crow was far more frequent breeder in the beginning and in the middle of the fifty's (1952—1956) as nowadays (1978). The cause of this circumstance is not the least the increase of its pursuit (it is not a protected bird), far rather the altered conditions. Namely, the great part of the peatbog — as we shall see at the discussion of the rest breeding communities — has strongly changed. The open parts of the meadows have shriveled or partly disappeared too. So the breeding birds were nesting here in former times do not occur at all in the peatbog region today. However, the presence of the Hooded Crow has primarily depended on these species because it has destroyed their eggs and young. The multiplying of the isolated trees suitable for breeding all over the meadows might not cause by no means the great scale decrease of the number of the Hooded Crows even on the contrary this circumstance would heighten the number of the here breeding pairs.

The permanent member of this community, the Kestrel does not show such a simple and unambiguous picture.

My investigations in the fifty's (1952—1956) have shown that this species was one of the commonest of the here breeding birds. According to my experiences in 1978 I may say that the number of the Kestrel has decreased in a great scale as compared to former ones. My rarer and only occasional excursions to this territory in the sixty's and seventy's have shown that the number of the breeding or only occurring — not in breeding season observed — specimens has decreased rapidly, even at the beginning of the seventy's it might not see at all Kestrels on the peatbog region. From this date on they gradually have increased and now (1978) their number — in spite of that it is essentially lesser than it were in the fifty's — is in a slow but continual increasing. This phenomenon may scarcely has more reasonable explanation as the chemically plantprotection and the official devastation of raptorial birds have nearly killed this species, as long as finally the rigorous nature conservation measures and the restriction of the chemically insect extermination were beneficial result on the mass of the Kestrel in the seventy's.

Connected with the subordinate members of this community — in the order of their here represented characters — it already is not necessary the exhaustive details of species. That is up on certain species — punctually up on the groups of species — were influenced of the same kind by the gradually appeared changes of the last quarter of this century.

Properly speaking these species may divide three different groups. In the first one may it rank those species in the mass of them it did not ensue any change in the last quarter of this century. The are as follows: Long-eared Owl, Little Owl, Grasshopper Warbler, Hoopoe, Wood Pigeon, Jackdaw, Partridge and White Stork; though the last one does not nest here, and thus it may not compute to this breeding community but may not leave it out of consideration after all because it come to forage to the peatbog so in the breeding season of the species it belongs to this community.

Considering that the results of my earlier experiences I did not publish up to this date I see some brief remarks indispensable with connection of the listed species above. The Long-eared Owl is a common (10—15 pairs) breeding bird, it usually occupies the old nests of the Hooded Crow and of the Magpie built on isolated trees in the meadows. I have found it breeding in a

hole only once. That is true to the above mentioned Kestrel; I have found its set here in a hole. The Little Owl bred or breeds now in one-two pairs. The mass of the Grasshopper Warbler (15—20 pairs) is also unchanged. The cause of this phenomenon may be that the slow and continuous grow up with bushes of the meadows does not frighten away this bird. Despite of its name (grasshopper) I have found it nesting here and in the Adler Woods of the Hanság too in places that it may qualify either a meadow with grown up bushes or a laced forest with scanty shrubery undergrowth. The Hoopoe (about 25 pairs) is a common breeding bird of the old hollowed trees (willow, poplar, elm) of the meadows. The mass of the Wood Pigeon (only two-three pairs in the meadows) is unchanged but keep in wiew that it breeds in the forests too. The Jackdaw (only in one-two pairs) was not never common, on the other hand it was not never absent from the peatbog marshes fairly rich in old, hollowed trees. Lastly it may not observe any change in the mass of the Patridge.

It belongs to the second populous group of the breeding species of this community the number of those observedly decreased. These are as follows: Lapwing, Sky Lark, Yellow Wagtail, Whinchat, Corncrake, Quail, White-throat, Tree Sparrow and Magpie. The cause of their decrease was that meadows have grown up with bushes and that the soil have become very marshy. The Lapwing was touched by the former change of wich species now only some (3—4) pairs breed here whereas it has bred in far higher number (10—15 pairs) in the past. The Sky Lark was not common here in any times (6—8 pairs bred) but now it is very rare (1—2 pairs) because of the marshy soil and of the overgrowing with bushes. The mass of the Yellow Wagtail, Whinchat, Corncrake, and Quail reduces on account of the multiplying of the bushes. In former times 30 pairs of Yellow Wagtail, 20 pairs of Whinchat, 5 pairs of Corncrake, 4 pairs of Quail bred here. The decrease of the Whitethroat (former 10—15 pairs) and the Tree Sparrow (former 20—25 pairs) was rather due to the chemicals (now 5—6 pairs Whitethroats and about 10 pairs Tree Sparrows breed here). The nowadays rarity of the Magpies unambiguously (about 30 pairs bred in former times) is due to the persecution only (now about 10 pairs breed here).

Really the Mallard alone represents the third group of the breeding species of the community in question. Nowadays more than 20 pairs breed here oppose the former 5—6 pairs that may explain with the becoming swampy of the meadows.

Consequently it may establish in short with the mass of the individual species that half of them have not changed, the other half have decreased in a great scale and only one species has increased considering that the number of breeding pairs.

Sequencely the second is the *Circus pygargus*-breeding community that in my above cited paper (HORVÁTH, 1956) is the II/4 serial number. The breeding area of this community according to my genuine determination (HORVÁTH, 1956): „boggy meadows with low bushes and at some places with scanty reed-beds, clumps of rushes and sedges”. The permanent member of this — with the Montagu's Harrier as the leader characterized breeding community — is the Sedge Warbler (*Acrocephalus schoenobaenus*). Its subordinate members in the order of their decreased relation to the type of country and of their frequency are as follows: Reed Bunting (*Emberiza*

schoeniclus), Bluethroat (*Luscinia svecica*), Grasshopper Warbler (*Locustella naevia*), Yellow Wagtail (*Motacilla flava*), Snipe (*Gallinago gallinago*), Long-eared Owl (*Asio otus*), and Whitethroat (*Sylvia communis*).

Passing over to compare the condition of fifty's with today's I must emphasize that in the mass of the leading species it ensued an essential change. In former times (1952—1956) it has undoubtedly and constantly bred in one pair on two places; now (1978) only one pair breeds on one of the two places. One of the former breeding places was between the Hosszú-erdő („Long Forest”) and the southeastern end of the Gémes-erdő („Herons's Forest”) stretching one km long and 100—200 m broad swampy-bushy peatbog where there are buildings today. The other one was a characteristic section of the peatbog marshes between the Nagy-erdő („Big Forest”) and the Turjáni-erdő („Peatbog Forest”) about on a 500×500 m surface. The sole sure breeding place of the Montagu's Harrier today is a wet soiled-bushy 500×500 m peatbog west and southwest of the Turjáni-erdő. This area was a dry section with low scanty vegetation in the fifty's where did not breed the Montagu's Harrier. After the peatmining the surface of the soil has sunk and accordingly the level of the subsoilwater has risen and so this place has become a suitable breeding territory for this species.

The number of the permanent member of this community, of the Sedge Warbler is much bigger now as it was in the fifty's. At that time I have estimate the number of all the breeding pairs on the whole peatbog region about 20 nowadays at least 50 pairs of them breed here. The cause of this undoubtedly is that the place has become swampy and clumpy.

I discuss the subordinate species of the community in the order of the above enumeration. The mass of the Reed Bunting from the former 1—2 pairs to 6—8 pairs increased with contact with wetter soil conditions. The Bluethroat bred in one pair in the fifty's on the other hand I did not find in 1978 neither in migration periods. The mass of the Grasshopper Warbler has rest unchanged in this community too (3—4 pairs).

The number of the Yellow Wagtail has increased here a little. It has bred in 2—3 pairs in former times (1952—1956) whereas now it breeds in 4—5 pairs on the sole territory of this community. I observed 1—2 breeding pairs of the Snipe per territory units in the fifty's, on the contrary only one pair breeds now on the sole territory section. Two pairs of the Short-eared Owl have nested in a swampy part of the Öreg-turján („Old peatbog”) only in one year (1952). This date onward there were no any breeding or occurring data of this species. The mass of the Whitethroat has decreased to one pair in 1978 whereas it was former 3—4 pairs. The probable cause of this was in keeping with the general decreasing of the *Sylvia* warblers (a high sensibility opposite to chemicals) because the environmental changes did not give reason of the decreasing of their mass.

Sequencely the third is the *Numenius arquatus*-community that in my above cited paper (HORVÁTH, 1956) is the II/5 serial number. The breeding area of this community according to my genuine determination (HORVÁTH, 1956), „meadows dotted with avenues, scattered, detached trees in the vicinity of groves without marshy areas”. The mass if the Curlew — of the leading species of community in question — decreased a little in time so it has bred in five pairs formerly yet now only in four pairs. It may ascertain with connection of the territorial dispersion that its most typical breeding

area is a meadow about 200×1000 m, stretching in northwest direction from the Turjáni-erdő („Peatbog Forest”) and in southwest one from Ócsa. On this place it bred formerly and it breeds now in one pair.

The permanent member of this community is the Hooded Crow. This area is extremely suitable for nesting on the basis of its nature and at the same time it is fairly good for it as a feeding biotope. Thus when it is not so populous in this community as in the one named after it as a leading species (II/1.), therefore it is still numerous and conspicuous. Its mass may see permanent when we compare the fifty's with the today's.

The most typical subordinate member of this community is the Godwit. Its number is not big because its true breeding home is that of the following community where it is the leading species. That is the Godwit much more likes the wetter meadows, and it breeds only in a few pairs on the drier places or far from the damp parts of the peatbog marsh. I have observed it only in one pair today in such environmental circumstances.

Among the further four subordinate species I found the Common Crake breeding in one pair former and today too on the above marked territory. The Quail still was not rare in the fifty's however today it is absent from the whole peatbog region that account for the general and large scale decreasing of this bird. The mass of the Partridge was unchanged and it has bred here always in 2—3 pairs. It may say from the last to here belonged subordinate species, from the Whinchat, that it may find in all the here occurring breeding communities (four together) but one the Circus pygargus-community in nearly the same density. This means that frequency of this species does not depend on the combination of the community but on the extension of the territory section. I could ascertain 2—3 pairs of their on the territory in question in the past and today.

Sequentially the fourth and last at the same time is the *Limosa limosa*-community that in my above cited paper (HORVÁTH, 1956) is the II/6 serial number. The breeding area of this community according to my genuine determination (HORVÁTH, 1956): „peatbogs in the vicinity of marshy areas”. The permanent member in this community is the Redshank (*Tringa totanus*). Whereas the subordinate members in the order of their decreased relation to the type of country and of their frequency are as follows: Yellow Wagtail (*Motacilla flava*), Lapwing (*Vanellus vanellus*), Garganey (*Anas querquedula*) Pintail (*Anas acuta*), Short-eared Owl (*Asio flammeus*), Snipe (*Gallinago gallinago*), Whinchat (*Saxicola rubetra*), Curlew (*Numenius arquatus*), Sky Lark (*Alauda arvensis*), Hooded Crow (*Corvus cornix*) and Corn Bunting (*Emberiza calandra*).

I must begin the detailed characterization of this community that it may here measure at the most the ensued change under the past quarter of a century. Namely the Godwit was a characteristic, conspicuous and common bird of the peatbog region. Today it entirely died out because it has come to an end here the condition of its breeding. Its first and the bigger breeding area was northwest from the Turjáni-erdő („Peatbog Forest”) about on a $1 \times 0,5$ km meadow; today this place is in part open water with reedy borders in part however overgrown with different bushes mostly willows. The second and the lesser breeding area is in the vicinity of the middle part of the Hosszú-erdő („Long Forest”). Its dimensions are 500×200 m. Though the environmental conditions have rest here, the buildings raised in the

near and the going and coming of many people have frightened away the Godwits.

On the first place we want to nest average 8 pairs on the second one only 1—2 pairs. However, on these two formerly typical areas I did not find any Godwit in 1978.

It may not paint more favourable picture from the permanent member the Redshank too. The difference between the two species is so much only that on a lesser bush covered part of the first described place has bred one pair in 1978.

It may find only some species of the subordinate members too and in very small number. The Lapwing, Pintail, Short-eared Owl (although it has bred only in one year — 1952 — on the peatbog region), Curlew and Corn Bunting have entirely disappeared. The Yellow Wagtail, Snipe, Whinchat, Sky Lark and Hooded Crow still have survived in the more suitable parts in one-two pairs.

The above discussed breeding communities include all the here nested species. However it is evident that the species combination of the single communities are not isolated units of the peatbog marshes. It may establish certain — lesser or bigger — penetrations among the single units.

Let us enumerate these. Out of the 20 species of the *Corvus cornix*-community 10 — that is its half — here breed exclusively, Out of the 9 species of the *Circus pygargus* community 4 solely here breed. Out of the 7 species of the *Numenius arquatus*-community there are no any that may breed here. In the *Limosa limosa*-community there are 13 breeding species altogether; out of them only 4 breed solely in this unit. When we summarize the four communities then it may establish that only 18 species breed exclusively on one unit among the four ones while 31 species have a part in one or the other communities too — naturally — by different frequentation, exactly by different character. Namely, a bird that in one community is a leading species, it may be a permanent or a subordinate member in another one. Lastly we may also value the communities that how many species of them act in another two units too. Then come to light that in the sequence of our discussion in the first community three species, in the second one only one species, in the third one two species, in the fourth one yet again three species have a part in still other two communities too; they are altogether nine species. Thus in only one other community 31 species, in two other ones already only 9 species, however in three other communities have not a part any one species. That is there is no such breeding species in the whole peatbog marshes which — in some kind of capacity — have a part in all the four breeding communities.

Consequently the delimitation of the together breeding species — that is the establishment of the breeding communities — is reasonable in the breeding fauna of the peatbog marshes. These breeding units reflect faithfully the characteristics of every single meadows of the whole peatbog region in question. On the other hand — just with the connections of the mutual influences — they point at the ecological plasticitation of the species how link these different aspects of the landscape of the peatbog units.

I should summarily establish that the breeding communities of the birds of the peatbog region between the villages Inárcs and Ócsa are permanent; that is new breeding species did not enter in any of communities under the

past quarter of century (1952—1956). On the contrary numerous species have not occur in the course of times in connection with the change of the meadow-like character. Comparing with the results of the same kind — the communities of breeding birds of the peatbog forests writing above — of my former work (HORVÁTH, 1978) it may establish that the breeding fauna of the forests of the peatbog region were subject to the influence of the passing time in a much less degree as the breeding birds of the meadows. Consequently the ensued changes in the peatbog forests did not bring in the least such thorough transformations in the local birdlife as ones may find in the meadows. Drawing up this result still more generally it may establish that the becoming swampy and growing with bushes of the meadows effect much more in the birdlife here as the changes in the peatforests (becoming older of the trees, new forest plantations, becoming swampy, drawing up) that is in the bird fauna of the forests.

The two works — the investigations of the birdlife of the peatbog forests and of the peatbog meadows in the mirror of the passing time — thus are connected with one another as the two different aspects of the peatbog region.

The ornithology of these two interweaved types of country is interest in another viewpoint. That is as long as the number of the breeding species is 28 in the peatforests, only 18 in the peatmarches. In the forests another 14 species move as spring — autumn transitional migrants or winter guests. In the meadows this number is also lower, 13. That last ones are as follows: Great Grey Shrike (*Lanius excubitor*), Fieldfare (*Turdus pilaris*), Redwing (*Turdus iliacus*), Mistle Thrush (*Turdus viscivorus*), Grey Wagtail (*Motacilla cinerea*), Woodcock (*Scolopax rusticola*), Rough-legged Buzzard (*Buteo lagopus*), Pallid Harrier (*Circus macrourus*), Collared Turtle Dove (*Streptopelia decaocto*), Roller (*Coracias garrulus*), Green Woodpecker (*Picus viridis*). These two last ones also have bred in the old poplars in the neighbouring sand dunes areas, and from here were going to feed in the peatbog meadows. That is the number of the total proved species — breeders and non breeders together — is 42; on the contrary the total species number of the birds of the peatbog meadows only 31. The explanation of this relatively low number is that I did not compute on the species list the birds those I have seen only fly above the investigated territory (peatbog region), or those were represented very rare and wholly irregular by an occasional specimen in the peatbog meadows.

As last valuation I may recapitulationaly establish of the whole peatbog region that its chief characteristic is in the individual combination and is not in the riches or in the variety of its breeding species.

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Az Inárcs—Ócsa közötti láprétek madarainak fészkelőközösségei

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A szerző az Inárcs és Ócsa között elterülő tőzeglápérétek madaraival foglalkozott. Ez a terület ma tájvédelmi körzet és a Kiskunsági Nemzeti Park közvetlen felügyelete alatt áll. A korábbi (1952—1956) hasonló vizsgálatok adatait összehasonlítva a jelenlegiekkel (1978) megállapítható, hogy a környezeti hatótényezők nagymértékben megváltoztak az elmúlt 26 évben. Természetesen a madárélet sem maradt változatlan ez idő alatt. Ahogyan az idő múlt, egyre több faj maradt el a réti tájjalleg fokozatos megváltozásának következtében. A tőzegkitermelés nyomán fellépő elmoocsarasodás és bebokrosodás volt a változás két fő előidéző oka. Bár korábban is négy volt és ma is négy a száma az itteni, mocsras tőzegláp réteken kimutatható fészkelőközösségeknek — nevezetesen a hamvas varjúval, a hamvas rétihéjával, a pólinggal és a godával mint vezérfajjal jellemzett költőcsoportosulásnak —, mégis erősen érezhető a változás az egyes költőfajok és -párok számában. A jelenleg kimutatható 31 faj közül 18 költ itt, és csupán 13 az átvonulók és téli vendégek száma. Ebből következik, hogy a megváltozott környezeti tényezők — a talajvízszint megemelkedése, a tőzegkitermelés kiterjesztése, a fűz-, a nyárbokrok és alárendelten egyéb bozót megsokszorozódása — nagyban hozzájárultak a madárélet megváltozásához. Végső értékelésképpen megállapítható, hogy a Turján-vidék fő jellegzetessége a költő fajok egyéni összetételében és nem a fajgazdagságában vagy a változatosságában van.