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Bird-coenological investigations in the inundation area of the Maros

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Abstract

My avicoenological investigations in the inundation area of the Maros were carried out in rotten old willow-plantations and in fine poplar-plantations of an unmixed stand, in the winter months, from 1966 until 1968.

I have elaborated also the bird-coenoses of the biotops occurring in the area.

The results of the coenological investigations are supported by my observations in the subsequent year. In so far as the number of species and individuals of the overwintering birds is similar in the same area in every year, there come into being identical bird-coenoses corresponding to the single biotops.

Introduction

My bird-coenological investigations were carried out in the inundation area of the Maros, from October 1966 till March 1968. These areas were under my detailed observation already in the period 1962-1966, and my perceptions obtained in that time have been used to my definitive results of investigations.

A short oecological characterization of the area is as follows. My investigations were carried out in three different areas. Two of them were noble poplar plantations and one was an old willow plantation.
Apart from them, I have studied also a young willow plantation from the point of view of bird populations. The areas investigated lie between the zero three km reaches of the Maros. I have chosen the boundary of the areas so that, during my observations, the bird migration between the single areas should be comparatively little.

Climate characteristics: Mean annual temperature + 10 ^{o}C. Number of frosty days /with sub-zero temperature till -10 ^{o}C /not more than 8-12 days / K a k a s 1960/. The coldest winter month in January with a mean monthly temperature -3 ^{o}C. The amount of precipitation in the winter semester is 250 mm but the annual average of the snowy days is only 20 mm. The area is covered with snow generally from December 20th till February 15th. And the number of snow-covered days is often much more lower than that.

My investigations were carried out from November 1st till March 1st.

Coenological investigations in an old willow-plantation of pure stand

The stand of the willow plantation is very old /60-80 years old plantation/. It is 1050 m long, 60 m broad, 6,3 Ha extent. It is surrounded by a plough-land from South, by a 20 m broad rare poplar plantation from North, and beyond that also by plough-lands.

The numbers of the species and of their specimens occuring constantly in the area are as follows:

Falco tinnunculus / L./: one male specimen could systematically been observed.

Phasianus colchicus / L./: 4-6 specimens. Their relatively small number can be explained by the absence of a dense underwood.

Asio otus / L./: 10-13. They spend the daytime in a group on willows. 99 p.c. of their food are small rodents. Their number changes periodically in years.

Dendrocopus major / L./, *Dendrocopus syriacus* / E h r e n b e r g /: I have systematically observed two of them. They cleaned the branches, rotten stems of willows. *Parus major* / L./: Their average number has been 14. The greatest single number was in early November: 24. In March I observed 6-8 fewer than those observed in November.

Parus coeruleus / L./: Their number shows the maximum in January, then it is 10-12, but generally there occur only 4-5 specimens.

Aegithalos caudatus / L./: They occur systematically only in November or early December, as well as in February. Then I discovered them in a small group of 4-5. In January they could be seen rarely but in a very large pack /12-15/: mainly *Aegithalos caudatus europeus* / H e r m a n n /.

Certhia brachydactyla / B r e h m /: I have seen 2-3 specimens straying with tomtit packs. They are the most constant species of the area. In March their number increased to 4-5.

Turdus merula / L./: Apart from the snow-covered days, I have constantly discovered 2-3 specimens.

Regulus regulus / L./: Their number is subjected to a very great fluctuation. In a snowy weather their number decreases. I have found 8-9 specimens on the average.

Regulus ignicapillus / T e m m i n c k /: It is very rare.

Passer montanus / L./: From the middle of December till the middle of February they come here only for night. Their number is almost constant, 13-15.

Troglodytes troglodytes / L./: They stay at the denser underwood of the area, number: 1-3.

Summing up the results of the observations so far: In the area of 6,3 Ha, there are systematically represented 14 species: 13 birds for a hectare. The total weight of these specimens is small but their biological role is priceless.

Coenological investigation in noble poplar plantations

The age of the poplars is 13-14 years. The two areas are together 15 Ha /3,6 + 11,4/. The poplar plantation of 3,6 Ha is surrounded by the river Maros, an old willow plantation, and a young willow plantation. Here there gets on only the bird-diverting effect of the willow plantations but I took always care of having real results. The poplar plantation of 11,4 Ha area is surrounded by a plough-land, the river Maros, as well as a one-year old willow plantation. This area is comparatively well isolated.

The species constantly occurring in the area are as follows. Their numerical determination, apart from a few species, is very difficult. A lot of species visits, the area only for 1-2 hours or for a still shorter period. The area seems, therefore, to be often desolate, nevertheless it is in a constant motion.

Dendrocopos major / L./, *Dendrocopos syriacus* / E h r e n b e r g /: They stay at the poplar plantation for the whole winter. I have mostly observed 3 specimens.

Parus major / L./: I have seen on the average four of them, in mixed groups with continental blue tits. In November and March their number was 15-20.

Parus coeruleus / L./: much more frequent than the tit species mentioned above, although their number is in a strong fluctuation. There occur 7-8 of them on the average but I often met groups of 15-20 specimens, as well.

Troglodytes troglodytes / L./: in snow-free periods, among the fallen twigs and in the denser underwood there occurred 2 of them on the average.

Turdus merula / L./: in snow-free periods 4-6 specimens stayed at the area.

Regulus regulus / L./: There were 2 specimens on the average. Their number is strongly fluctuating, they occur in mixed packs with blue tits. *Regulus ignicapillus* / T e m m i n c k /: is a very rare guest.

Carduelis carduelis / L./: They come in packs containing 30-40 specimens. They are often absent from the area. The cause of this is that they come here mostly for taking a rest. On the average L, 3 of them are in the area.
Carduelis spinus / L./: As long as there are leaves on the trees, they come here in packs of 20-25 specimens and consume insects. In winter, I have seen only one or two specimens in overflight.
Pyrrhula pyrrhula / L./: It is a species connected with the presence of ashtrees. It can be observed in packs of 3-5 or 10-20 specimens. Their specimen number in the area is 15 on the average.

On single occasions I have met the following species: *Falco tinnunculus, Phasianus colchicus, Columba palumbus, Picus viridis, Turdus philomelos, Turdus pilaris, Aegithalos caudatus, Erithacus rubecula, Carduelis chloris, Fringilla coelebs, Corvus corone cornix, Pica pica, Accipiter nisus, Buteo buteo, Passer montanus, Fringilla montifringilla.*

I have observed, therefore, 27 species in an area of 15 Ha /17 of them only on single occasions/. They were represented with 54 specimens, for one hectare there were 3,6 birds.

Bird populations of the area

I. Winter bird population in the inundation willow plantations of pure stand

1. Old /60-80 years old/ tree stand: coal tit, blue tit, fire-crested wren, tree-creeper, tree-sparrow, long-tailed tit, big woodpecker, wood long-eared owl.
2. Young /6-25 years old/ willow stand: coal tit, blue tit, fire-crested wren, long-tailed tit, big woodpecker.

Name of the populations: 1. coal tit, fire-crested wren, blue tit, tree-creeper.
2. coal tit, blue tit, fire-crested wren.

II. Winter bird population in the inundation noble poplar plantations.

1. Blue tit, coal tit, bullfinch, fire-crested wren, big woodpecker, long-tailed tit. The existence of this population depends on the presence of the bearer ash-trees.
2. Blue tit, coal tit, fire-crested wren, woodpecker, bullfinch, long-tailed tit. The presence of the bullfinch in the noble poplar plantations is connected with the crop of ash-trees. After its exhaustion, their presence in the area is not systematic.
Name of the population: blue tit, coal tit.

III. Dense mulberry-shrubby places

Robin, blackbird, jenny wren, wood hedge-sparrow. Owing to strong cold weather and snow, the robin and blackbird leave the population.
Name of the population: Jenny wren, robin, blackbird.

IV. Abnormal areas beside the banks

Goldfinch, siskin, wood finch, jenny wren, fir-finch, green-finch, blackbird. The main mass of vegetation is given by *Xantium italicum* / M o r /, the crop of which is the main food of the goldfinches.
Name of the population: Goldfinch.

V. D a m

Yellow-hammer, linnet, tree-sparrow, skylark, starling, rook, fieldfare, jackdaw, reed-bunting, green-finch. It is a mown area covered with plant association of varied composition.

In the winter month the vegetation is 5-10 cm high /first of all *Gramineae*/. It cannot be named a constant association. The presence of species depends strongly upon the weather.
Name of population: Yellow hammer, linnet.

Formation of bird-packs in the winter months

From the end of winter the standing birds of the inundation area already roam in packs but they consist, in that time, only of one family /4-11 specimens. From the middle of October as the fire-crested wrens arrive, mixed packs are formed. The number of species and specimens in a pack shows a very great variety.

I observed the first mixed pack on the 22nd of October and then continuously till the early April. Then there separate first the long-tailed tit, then the coal tit, and after the fire-crested wrens leaving, the bird-pack dissolves. The specimen numbers of the species participating in the packs change between 3 and 7 but the specimen numbers of a few species can be shifted to 15-22, too.

Packs of pure stock are: coal tit 3-25, blue tit 3-20, long-tailed tit 4-15, tree-creeper 3, fire-crested wren 3-15, goldfinch 2-150, bullfinch 2-30, siskin 2-40, skylark 2-80.

Packs of mixed stock are: the birds of inundation the most frequently form mixed packs. I have so far found only bullfinch in a pack of a constantly pure stock what can be explained with the quality of the demand on food. /The crop of ash-tree is consumed only by that bird/.

I observed a pack of mixed composition the earliest on October 22nd 1966, consisting of the following species: 4 fire-crested wrens - 6 long-tailed tits- 2 coal tits - 1 blue tit. The packs of a composition like this are very frequent ones. They may be joined also by tree-creepers, big woodpeckers, wrens, robins.

The most frequent mixed packs are: coal tit - blue tit; blue tit - fire-crested wren;, coal tit - blue tit - tree-creeper; fire-crested wren - tree-creeper; coal tit - tree-creeper; yellow-hammer- linnet; starling - fieldfare.

Summary

The coenological investigations are proved by my observations from 1967/1968, the results of which are very similar to the data of the year before. In the same area the species and specimen numbers of the birds surviving the winter are very similar to those, in the next winter, too.

Here is to be mentioned an important problem of the protection of birds. That is the hesitation of some bird species observed at our night and daytime birds of prey, caused by anthropogenic effects. The real causes of that hesitation are the hunters distroying systematically also the useful birds of prey. There are hit by that very hard the wood long-eared owls that in the winter month are staying in packs and are very tame in the daytime,being therefore easy preys for the hunters. This opinion of mine is supported by the fact that while in the winter of 1966/1967 13 wood long-eared owls survived the winter in the old willow plantation, in the winter of 1967/1968 about the same number of them were tumbled down in the same space.

References

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