

## ORNITHOLOGICAL INVESTIGATIONS AT THE AREA OF THE KISKÖRE WATER BASIN (TISZA II)

A. LEGÁNY

OKTH Inspectorate of the Northern Lowlands, Debrecen

(Received November 12, 1984)

### Abstract

Author studied the bird-stock at the Tisza-II. water basin bordered by the areas of Tiszafüred—Poroszló—Kisköre—Abádszalók, comparing it with the earlier conditions.

The data were collected at selected points of the livingplaces characteristic to the area — brushwood, remainder forest patches, fishing ponds, marsh, meadow, reed border alongside the bank and mud island — in order to appropriately represent the ornithofauna of the biotop. In such manner the quantitative and qualitative relations of the nesting communities could be determined which are well demonstrated by the Tables amidst the text.

The study also threw light on the fact that according to ornithological viewpoint the area is not only important as nesting place, but is significant as alimentary biotop, too. Regarding the predictable changes, certain enrichment is expectable in the nesting communities of the forest, while at the rest of the area major fauna-development cannot be expected due to the increasing interfering effects.

### Introduction

The great water conservancy constructions — which have decisive effect on the living world at the area in question — offer an opportunity never to be recaptured for studying the effects of nature remaking activities. Under such circumstances the possibility arises to steadily follow the changes taking place after previous surveying and to accurately determine the development of the new quality. The obtained results can later be well utilized when forming the drafting conceptions as well as for understanding and explaining the processes taking place in nature.

The Tisza Research Committee was also led by this when before construction, it performed detailed survey at the area of the Tisza II. water basin to be established, practically creating a comparative basis for further investigations. In the frame of this manifold work author's task — in 1969 — was to study the avifauna of the flood plain bordered by Tiszafüred—Poroszló—Kisköre—Abádszalók, and he prepared a detailed report on his observations (LEGÁNY 1971).

During the course of the 14 years which have past since then, the planned water basin has been built and its damming up has also mostly been completed, thus besides the continuously performed other biological studies, the newer survey of the ornithofauna, together with its comparison with the earlier states, have become timely; — to study the trend and quality of the changes as well as to draw conclusions in respect to the further development. This gives reason for the series of observations made by author between 1982 and 1984.

## Materials and Methods

Author's studies were carried out at the same area investigated earlier, as specified in the introduction. On the occasions of the first tours of inspection, those types of living places were determined which are presently characteristic to the area and are the scenes of the avifauna. Furthermore, the surveying spots where the data were collected were also determined — even several from each type of living place.

Accordingly, studies were performed at areas of the following character: brush-wood, remainder forest patches, fishing ponds, marsh, meadow, reed border alongside the bank, and mud island. Attempt was made to clarify the qualitative and quantitative relations of the nesting avifauna at these areas. During the course of this every circumstance was considered which gave exact information on the hatching and settling down of the birds.

When evaluating the various living places, dominance categories and constant degrees were determined, into which every species was grouped, in the following manner:

Rare species	in the case of 0—3% dominance
Accessory species	in the case of 3—7% dominance
Subdominant species	in the case of 7—9% dominance
Dominant species	in the case of 9— % dominance.

Conctant degrees: I. with 0—20% constant  
II. with 21—40% constant  
III. with 41—60% constant  
IV. with 61—80% constant  
V. with 81—100% constant.

The formula of Shannon-Wiener was used for calculating the diversity values:

$$H_s = \sum_{i=1}^{i=s} \frac{n_i}{n} \ln \frac{n_i}{n}$$

Owing to the expansions of the area, it can not only be taken into account as nesting place, but also as alimentary base for a significant mass of birds. These often arrive from distant places only for the purpose of feeding. Measurements were performed to clarify the significance and measures of this bird-motion (movement). From a given spotting post the number of birds coming from a certain direction, advancing on the same route were counted for 30 minutes. The degree of frequency was concluded from the obtained data.

## Study results

### Bird-stock at the brush-woods

Earlier, the largest part of the area was covered by forest. However, at the time of building the storage tank the trees were cut down, but not rooted up. As the result of this, where there was no constant and large water covering, resp., brushwood developed from the root and trunk sprouts, appearing in a mosaic-like form and providing a certain chance of life and establishment for the original ornithofauna remains. These are young and extremely dense stands, which can mostly be regarded as scrub forests (see Fig. 1).

Its species composition is characterized by the *Populus alba*, *P. nigra*, *Salix alba*, *S. fragilis*, *Fraxinus angustifolia* and the *Acer negundo*, appearing in large masses. Unfortunately, the majority of the stand is formed by these adventive weed trees. At the shrub stratum, apart from the sprouts of the previous species, the *Amorpha fruticosa* is growing quite rapidly, also being an adventive plant.

In respect to the fact that the surface of the area is not exquisitely flat, water-filled marsh patches have developed at the deeper parts with characteristic marsh-plants — *Typha*, *Glyceria*, *Scirpus*, etc. — giving reason for the appearance of the warblers at the brush-woods. The living place cannot be characterized by natural plant communities.

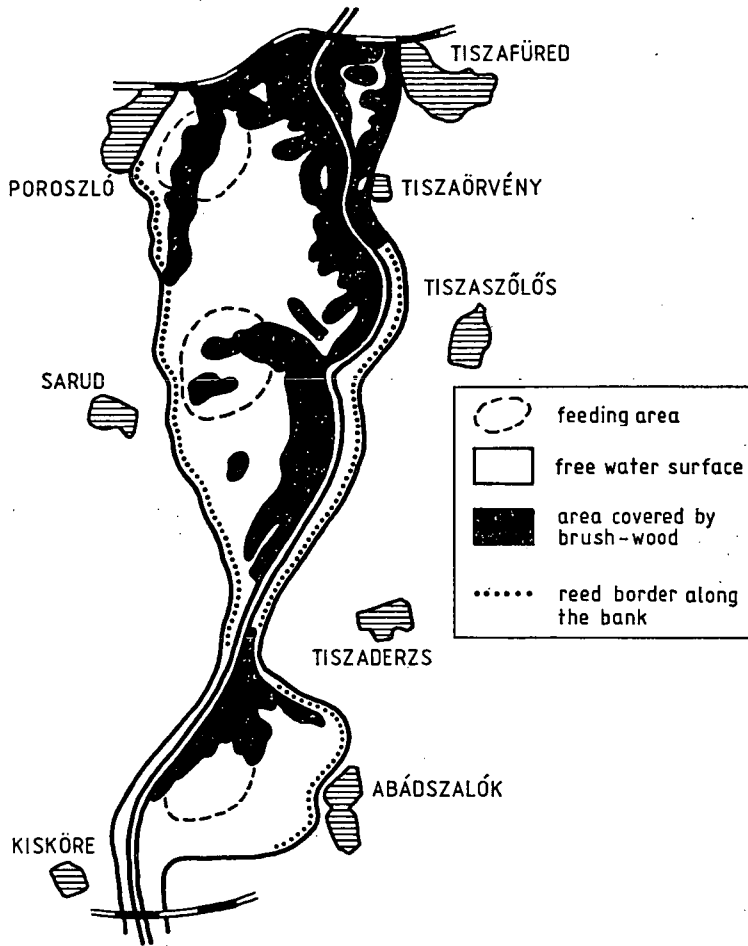


Fig. 1. Distribution of a few living places at the studied area

The largest number of nesting species — 30 — was registered at this area. Its species composition — see Table 1 — cannot be traced back to any earlier forest type. The studies on species identification showed greatest relationship towards the soft-wood groves, nevertheless this value was found to be so low — 19% — that we cannot speak about direct development. It is more likely that the euryecious species of the earlier forests of various types perched at this biotope, establishing an entirely characteristic (specific), not typically forest-bird community. At the various surveying spots — 1 ha area — 8—12 species were observable, represented by 13—19 pairs.

Studies on the nesting layers are quite informative about the character and value of the living place; namely, the layer at which the certain members of the community hatch their eggs, and their proportion. In this concern the following results were obtained:

Ground-nesting	3 species	15,78%
Water-nesting	1 species	3,44%
Reed-nesting	5 species	17,24%

Shrub-nesting	11 species	37,93%
Hollow-nesting	1 species	3,44%
Tree-nesting	8 species	27,58%

The young age of the forests is referred to by the large number of species hatching at the shrub and tree stratum as well as by the almost complete lack of species living in hollows — only 1 species. At the same time the individual character of the living place is indicated by the appearance of birds nesting at the water and reed stratum, which is owing to the already mentioned water dips and the vegetation developing there.

Table 1. *The nesting bird species observed in the brush-woods*

Species	D	K
1. <i>Anas platyrhynchos</i> L.	1,52	I
2. <i>Gallinula chloropus</i> L.	1,52	II
3. <i>Columba palumbus</i> L.	0,76	I
4. <i>Streptopelia turtur</i> L.	5,34	III
5. <i>Cuculus canorus</i> L.	9,92	V
6. <i>Oriolus oriolus</i> L.	3,81	III
7. <i>Corvus cornix</i> L.	1,52	II
8. <i>Pica pica</i> L.	0,76	I
19. <i>Remiz pendulinus</i> L.	0,76	I
10. <i>Turdus merula</i> L.	4,58	III
11. <i>Luscinia megarhynchos</i> BREHM	8,39	IV
12. <i>Locustella fluviatilis</i> WOLF.	7,63	IV
13. <i>Locustella luscinioides</i> SAVI.	0,76	I
14. <i>Acrocephalus arundinaceus</i> L.	3,05	II
15. <i>Acrocephalus scirpaceus</i> HERM.	3,81	II
16. <i>Acrocephalus palustris</i> BECHST.	2,29	II
17. <i>Acrocephalus schoenobaenus</i> L.	9,16	III
18. <i>Hippolais icterina</i> VIEILL	0,76	I
29. <i>Hippolais pallida</i> HEMPR.	3,05	II
20. <i>Sylvia atricapilla</i> L.	5,34	III
21. <i>Sylvia nisoria</i> BECHST.	2,29	II
22. <i>Sylvia borin</i> BODD.	4,58	III
23. <i>Sylvia communis</i> LATH.	7,63	IV
24. <i>Sylvia curruca</i> L.	1,52	II
25. <i>Lanius minor</i> Gm.	0,76	I
26. <i>Lanius collurio</i> L.	2,29	II
27. <i>Sturnus vulgaris</i> L.	1,52	I
28. <i>Carduelis carduelis</i> L.	0,76	I
9. <i>Fringilla coelebs</i> L.	2,29	II
30. <i>Emberiza schoeniclus</i> L.	1,52	II

On the basis of nutriment consumption the majority of the species — 70% — are insectivores, while only 23,33% are herbivora and 6,6% live on mixed alimentation.

The dominant species of the community are the *Cuculus canorus* and the *Acrocephalus schoenobaenus*. Besides this, the cuckoo is even constant. Together with the previous species the *Luscinia megarhynchos*, *Locustella fluviatilis* and the *Sylvia communis* belong to the subdominant and subconstant categories, and as such they practically form the backbone of the stock.

The diversity reached the highest value here — 3,0964 — which, compared to the data of other flood forests (LEGÁNY 1983), can be regarded as being good.

It is characteristic to the fauna-element composition of the community that the dominating species are the European-Turkestan — 40% — and the European — 26,66% — ones, contrary to the commonly experienced palearctic dominance.

## Bird-stock at the remainder forest patches

At certain parts of the water basin — 0,5—1 ha — the old trees and smaller forest patches were not cut down. Thus old trees rise above the marshy, watery surroundings here ensuring in such way the settlement of such tree-nesting and hollow-nesting species which demand (require) trees of such size, and to which they cannot get at elsewhere. Their species composition is characterized by the *Populus alba*, *P. nigra*, *Salix alba*, *S. fragilis*. These are the remains of the former soft-wood groves and can mostly be found at smaller areas, rising above the water level. One of these smaller forest patches ensured place for the endurance of a heron colony — already known from earlier.

The bird community observed here is rather poor in species, which can well be seen from Table 2.

Table 2. *The nesting bird species observed at the remainder forest patches*

Species	D
1. <i>Phalacrocorax carbo</i> L.	56,75
2. <i>Ardea cinerea</i> L.	35,13
3. <i>Aythya nyroca</i> GÜLD.	2,7
4. <i>Cuculus canorus</i> L.	2,7
5. <i>Upupa epops</i> L.	1,35
6. <i>Lanius collurio</i> L.	1,35

The dominant species of the community are carnivores, which consume the fish stock at the storage tank. Due to their low individual number the insectivores do not play significant role in the trade in material of the area.

However, these biotops do not only come into account as nesting places, but also as areas of alimentation. The observations have proved that besides the nesting birds, the *Egretta alba*, *E. garzetta*, *Anas platyrhynchos* and the *Corvus cornix* were also regularly observable at the surveying spots, generally in the course of their search for food.

The low diversity — 1,0004 — is explained by the area's scantiness in species and the stock's uneven distribution, which indicates the remains of a degraded, rather than a completing community.

## Bird-stock at the fishing ponds

The navy pits dugged for gaining clay were developed at the Northern parts of the studied area — alongside the route of Tiszafüred—Poroszló. Today these are fishing ponds. Few *Phragmites communis*, more *Typha angustifolia*, *T. latifolia* and *Glyceria maxima* grow at the banks and the narrow ridges between them. At places *Scirpus lacustris* and in patches *Bolboschoenus maritimus* grow as well. The *Amorpha fruticosa* forms a rather dense stand at the highest points. This narrow border vegetation and the continuous, intensive fishing — i.e. the continuous disturbing — explain the reason why only a scanty nesting community is found here (see Table 3).

Table 3. The nesting bird species observed at the fishing ponds

Species	D	K
1. <i>Podiceps cristatus</i> L.	4,34	II
2. <i>Anas platyrhynchos</i> L.	13,04	II
3. <i>Gallinula culthropus</i> L.	6,52	IV
4. <i>Fulica atra</i> L.	2,17	II
5. <i>Cuculus canorus</i> L.	10,86	V
6. <i>Acrocephalus arundinaceus</i> L.	15,21	V
7. <i>Acrocephalus schoenobaenus</i> L.	37,00	V
8. <i>Emberiza schoeniclus</i> L.	10,86	IV

Owing to the character of the area the number of nesting layers narrow down; only the followings were found:

Ground-nesting	2 species	28,57%
Water-nesting	4 species	50,00%
Reed-nesting	3 species	37,5%

Despite the fact that the ponds are rich in fish, there is only 1 fish-eating species at the area; the *Podiceps cristatus*. The majority of the community are herbivora — 50% — and insectivores — 37,5%. The one single constant-dominant species of the stock is from the latter; the *Acrocephalus schoenobaenus*.

The regularly observed smaller flocks of *Sterna hirundo*, *Larus ridibundus* and *Chlidonias nigra* are attracted to come to feed here by the fish stand — mainly the small brood fish.

The diversity value is: 1,8000 which can be judged as being good average under the given circumstances. Studying the fauna elements, the dominance of the palearctic species was found to be complete — 37,5% — which, as will later be seen, is characteristic in the majority of the cases.

#### Bird-stock at the marshes

Marshes developed at areas covered by shallow — maximum 40—60 cm deep — water, where smaller-larger water surfaces alternate with parts covered by vegetation. Depending on the actual water depth *Typha latifolia*, *T. angustifolia*, *Scirpus lacustris*, *Carex elata*, or *Bolboschoenus maritimus* grow in an amount forming a stand. *Phragmites communis* can only be found sporadically and in small patches. At places the *Iris pseudacorus* colours the association. Such marshes are mainly observable at the Northern parts of the studied area.

Table 4. The nesting bird species observed at the marshes

Species	D
1. <i>Anas platyrhynchos</i> L.	45,—
2. <i>Aythya nyroca</i> GÜLD.	2,5
3. <i>Gallinula chloropus</i> L.	7,5
4. <i>Fulica atra</i> L.	5,—
5. <i>Cuculus canorus</i> L.	5,—
6. <i>Locustella luscinioides</i> SAVI.	2,5
7. <i>Acrocephalus arundinaceus</i> L.	5,—
8. <i>Acrocephalus schoenobaenus</i> L.	20,—
9. <i>Emberiza schoeniclus</i> L.	7,5

The bird-stock is rather poor despite the relative peace at the area, which is firstly evident by species number and not individual number (see Table 4). The causes of this is found by author to be due to the fact that the nesting possibilities exclude several bird species and an entirely hydrophyll community develops, the dominant species of which are the *Anthas platyrhynchos* and the *Acrocephalus schoenobaenus*.

The distribution of the species according to nesting layers developed as follows:

Ground-nesting	3 species	33,3%
Water-nesting	2 species	22,2%
Reed-nesting	4 species	44,5%

The tree-nesting birds nest at the smaller islands, rush-beds rising above the water level.

The distribution of the community according to alimentation developed in an interesting manner. Only herbivora — 55,55% — and insectivore warblers were found at the area — 44,44%. Despite the fact that numerous small fish were observable in the shallow and vegetation-rich water, author did not detect the nesting of fish-consuming birds. This fact explains why the fish-eating birds come to these areas in large numbers from more distant places. According to author's observations the smaller flocks of *Phalacrocorax carbo*, *Egretta alba*, *Nycticorax nycticorax*, *Platalea leucorodia* and *Sterna hirundo* feed here regularly.

The diversity of 1,7035 value can be explained by the low species number and the not entirely even distribution. Among the fauna elements, the palearctic species reach a value of high percentage — 33,33 — however, the European-Turkestan elements also appear in a similar degree.

#### Bird-stock at the meadows

The meadow vegetation remained at those places where there was also meadow earlier, and there is no water covering today. These smaller patches were found by author as the remains of the Sarudi-meadow. Their surface is not consistently smooth, thus the composition of the vegetation changes according to the relief, too. The stand is formed by the *Agrostis alba* and the *Alopecurus pratensis* at the drier areas, while the surface is covered by various *Carex* species at the more watery patches. *Schoenoplectus lacustris*, *Typha angustifolia* and *Phragmites communis* grow at the deepest parts.

The meadows are relatively of small expansion and apart from their characteristic structure, this is the explanation to the nesting community of such low species number found at the area (see Table 5).

The absolutely dominant species is the tree-nesting one — 66,6% — in respect to the distribution according to the species' nesting layers. The reed-nesting species settling at the smaller watery patches was found in 11,1%, while the water-nesting species was detected in 22,2%.

According to the quality of the consumed nutriment the insectivores dominated in 66,6%, while the carnivores only represented 11,1% and the herbivora 22,2%.

The dominant species of the living place was the *Vanellus vanellus*, and the *Limosa limosa* was found to be subdominant. It should be mentioned here that the *Larus ridibundus* colony — also found at this living place — was not taken into consideration when calculating the dominance and diversity values, since this colony would have completely distorted the values.

Table 5. *The nesting bird species observed at the meadows*

Species	D
1. <i>Anas platyrhynchos</i> L.	6,25
2. <i>Circus aeruginosus</i> L.	6,25
3. <i>Gallinula chloropus</i> L.	6,25
4. <i>Vanellus vanellus</i> L.	37,5
5. <i>Limosa limosa</i> L.	18,75
6. <i>Larus ridibundus</i> L.	
7. <i>Acrocephalus arundinaceus</i> L.	12,5
8. <i>Acrocephalus schoenobaenus</i> L.	6,25
9. <i>Motacilla flava</i> L.	6,25

The diversity value — 1,8080 — was found to be good average even besides the low species number, which was resulted by the even distribution of the species. Studies on the fauna elements evidenced the dominance of the palearctic species — 55,5% — while the European—Turkestan elements only reached 22,2% here.

#### Bird-stock at the reed border alongside the bank

The open water of the banked up storage tank is contiguous with the foot of the dam. Therefore, a narrow, mostly only 3—4 metres wide reed border developed, the one single species forming the stand here being the *Phragmites communis*. Only a few shrubs of *Salix alba* and *Amorpha fruticosa* mix here and there with this species, making possible the settlement of a few shrub-nesting birds (see Fig. 1). The narrow and disturbed reed border is only capable of maintaining a bird-stock poor in species and individual number (see Table 6).

Here, only those species settled down which are able to endure the frequent nearness of man and the narrow vegetational zone offers sufficient aliment and lurking hole for them. The distribution according to nesting layers was as follows:

Water-nesting	1 species	16,66%
Reed-nesting	3 species	50,00%
Shrub-nesting	2 species	33,34%

The insectivores represented 83,33%, and the herbivora only 16,67% regarding distribution according to the species' alimentation. This high dominance was complete both in respect to species number and individual number. The constant-dominant species of the stock, the *Acrocephalus arundinaceus*, was from the insectivores.

The diversity value of the community was found to be 1,6094, which could be explained by the low species and individual number, despite the even distribution.

Table 6. *The nestig bird species observed at the reed border alongside the bank*

Species	D	K
1. <i>Gallinula coloropus</i> L.	10	II
2. <i>Locustella luscinioides</i> SAVI.	10	II
3. <i>Acrocephalus arundinaceus</i> L.	40	V
4. <i>Acrocephalus palustris</i> BECHST.	20	III
5. <i>Sylvia nisoria</i> BECHST.	10	II
6. <i>Lanius collurio</i> L.	10	II



During the course of the studies on fauna elements this was the second living place where the European—Turkestan species gained dominance — 50,—% —; the rest of the fauna elements — including the palearctic ones — shared the other 50%.

### Bird-stock at the mud islands

In the interest of discharging (draining) the stagnant water, water conduits were hollowed out at the borders of the water basin, along the dams. The mud from here was led out alongside the dams through pipes, where it accumulated and formed characteristic mud island. Rounded, gravel-like formations developed from the clay and mud, which later hardened. As a consequence, the drying out mud islands — until they became covered by the succession — turned into living places resembling shoals, and these were suitable for the settlement of birds which favoured shoals.

During the course of his observations, author could determine the nesting of *Charadrius dubius* at one of these areas. However, the living place will lose its shoal character within 1—2 years, since it will first be occupied by soft-stalked grass-community, and then gradually by shrubwillow plantations.

### The water basin as an area for alimentation

Author had mentioned on several occasions earlier that the various living places are not only important for the nesting species, but also for those arriving there only to feed. However, the studied area also includes such parts which are explicitly important from the viewpoint of alimentation. Fish-eating birds arrive to these parts in great number mainly from the two nearby bird reserves.

The birds from the reserve at Tiszafüred come to the Northern and central parts of the studied area — see Fig. 1. —, while those from the bird reserve at Pély visit the bay at Abádszalók. For alimentation they mainly choose those places where many floated timber get caught in the drying branches of the brush-woods exterminated by the water, having the possibility in such way for fishing and landing in the relatively deep water and at the protected places.

Measurements regarding the frequency in respect to the areas were also performed. On May 19, 1984 between 10.30 and 11.00 the following bird species arrived from the reserve at Tiszafüred for feeding, across a zone of 3 kilometres:

1. <i>Phalacrocorax carbo</i>	16 individuals
2. <i>Ardea cinerea</i>	19 individuals
3. <i>Egretta alba</i>	16 individuals
4. <i>Nycticorax nycticorax</i>	10 individuals
5. <i>Platalea leucorodia</i>	4 individuals
6. <i>Anser anser</i>	8 individuals

From the direction of the bird reserve at Pély the following species arrived to the bay at Abádszalók on June 13, 1982, between 13.00 and 13.30:

1. <i>Phalacrocorax carbo</i>	2 individuals
2. <i>Ardea cinerea</i>	25 individuals
3. <i>Ardea purpurea</i>	1 individuals
4. <i>Egretta alba</i>	1 individuals
5. <i>Nycticorax nycticorax</i>	1 individuals
6. <i>Platalea leucorodia</i>	2 individuals

Regarding the shortness of the measured time, relatively high numbers were obtained. Furthermore, if taking into consideration that this movement is continuous, an image can be formed of the area's role in the alimentation of the birds. It can be regarded as an alimentary base, also making it possible for the fish-eating birds covering large areas to settle down beyond the water basin, too, if they find such suitable place. Therefore, the area is capable of alimentation export, which according to the measurements actually does take place continuously and in considerable degree.

Analysing the bird communities of the characteristic living places at the studied water basin area, it could be determined that the avifauna composed of the earlier, explicitly forest — meso and xerophyll — species has disappeared, its place being occupied by a bird community of hydrophyll dominance — 57%. The meso and xerophyll species composing the 43% are mainly the inhabitants of the brush-wood and should be regarded as the remains of the earlier forest avifauna.

The richness in species of the various living places depends on how multifold they are and what ecological requirements they are capable of satisfying. In case the living place is unilateral, extreme, expecting specialization from the species, then this appears in the decreased number of species. This was experienced at several studied living places, e.g. marshes, meadows, etc. If the most varied disturbing effects also accompany this phenomenon — like the young age of the forest, the small expansion of the area, continuous fishing, water sports, etc. — the poorness in species at the various living places is at once found reasonable.

Compared to the earlier state, significant changes have taken place in the composition according to consumed nutriments of the bird communities living at the area of the storage tank. The species and individual number of the birds living on composite feed have decreased to a large extent; we only have to refer to the lack of the 4 thousand pairs of rooks, about 10 colonies of which had lived here earlier. However, the percentage of the herbivora and somewhat the insectivores has also decreased, since the proportion of the carnivores has considerably increased, caused by the prominent rise in the amount of fish-eating species.

Being aware of the tendency in change at the area the question can be set forth, what could be expected in the future?

1. As the consequence of the growth of the brush-woods, there will be an increase in the number of forest-bird species. Due to the expectable rise in water level, however, a slight decrease in the area of brush-woods should be counted upon, which would thus mean an excellent fishing and lurking place for the fish-eating birds.

2. There will probably be a decrease in the role and significance of the meadows, marshes and reed borders — for the very reason of the expectable rise in water level.

3. The disturbed nature of the area will increase as the consequence of the enhancing fishing, holidays and water sports, therefore the prominent enrichment of the avifauna at the area of the water basin cannot be counted upon.

4. Nevertheless, the role and significance of the water basin may increase in respect to the alimentation of the birds and during the course of their migration, as a resting place. Thus, greater care should be taken of the peace at the nearby nature conservancy areas, as the water basin may mean an alimentary base for the birds settling there.

## References

- BODROGKÖZY Gy. (1965): Die Vegetation des Theiss-Wellenraumes II. Vegetationsanalyse und Standortökologie der Wasser- und Sumpfpflanzenzönosen im Raum von Tiszafüred. Tiscia (Szeged) 1, 5—32.
- HOMONNAY Sz.—IHAROS Gy.—KOLOSVÁRY G.—STERBETZ I.—und VASVÁRI M. (1965): Zoologische Ergebnisse der Tiszaforschungen aus dem Jahre 1962. Tiscia (Szeged) 1, 71—80.
- LEGÁNY A. (1970—71): Data to the ornithological conditions of the inundation area Tiszafüred—Kisköre. Tiscia (Szeged) 6, 41—55.
- LEGÁNY A. (1983): The ornithological investigation on the forests of „Tiszadob Flood Basin” nature conservation area. Tiscia (Szeged) 18, 125—134.
- WILSON E. O.—BOSSERT W. H. (1981): Bevezetés a populációbiológiába (Introduction to population biology.)—Budapest.

### A kiskörei tározó ornitológiai vizsgálata

LEGÁNY A.

Az OKTH Északalföldi felügyelősége, Debrecen

#### Kivonat

A szerző a Tisza II. tározó Tiszafüred-Poroszló-Kisköre-Abádszalók által határolt területének madárállományát vizsgálta, összehasonlítva a korábbi állapotokkal.

Az adatfelvételezések a terület jellegzetes élőhelyein történtek, hogy kellően reprezentálják a Tisza II. rnitofaunáját. Így sikerült megállapítani a fészkelőközösségek mennyiségi és minőségi viszonyait, amelyeket az egyes szöveg közötti táblázatok is jól szemléltetnek.

A vizsgálat fényt derített arra is, hogy a terület nem csupán, mint fészkelőhely fontos, hanem mint táplálkozási biotop is igen jelentős. Az előre jelezhető változásokat illetően az erdő fészkelőközösségének némi gazdagodása várható, míg a többi területen, a növekvő zavaró hatások miatt elentősebb faunafejlődés nem remélhető.

### Орнитологические исследования водохранилища

#### Кишкере

Легун А.

ОКГГ Северовенгерская инспекция, Дебрецен

#### Резюме

Автор провел исследование состава орнитофауны водохранилища Тиса II — Тисафюред — Пороло — Кишкере — Абдсалок в сравнении с его предыдущим состоянием.

Сведения были собраны на определенных характерных живых уголках, с целью представить типичную характеристику орнитофауны Тиса II. При этом удалось определить отношения между качественным и количественным составом гнездящихся птиц, что хорошо иллюстрируют таблицы, приведенные в тексте.

Проведенные исследования осветили и то, что эта территория является важной не только как гнездящееся место для птиц, но играет важное значение как кормовая база для биотопа.

Что касается перспективы на будущее, то здесь в лесах предполагается определенное обогащение укладков гнезд, причем на других местах этой территории, в связи с увеличением беспокойства, значительный рост и развитие фауны не ожидается.

## Ornitolo ka osmatranja akumulacije Kisköre

LEGÁNY A.

Zemaljski institut za zaštitu životne sredine, Inspektorat severne Madjarska, Debrecen

### Abstrakt

Autor je rezultate osmatranja ornitofaune područja akumulacije Tisza II (Tiszafüred—Poroszló—Kisköre—Abádszalók) uporedio sa ranijim nalazima. Prikupljanje reprezentativnih uzoraka ornitofaune vršeno je sa specifičnih biotopa akumulacije Tisza II. Na ovaj način omogućeno je bilo utvrđivanje kvalitativnih i kvantitativnih odnosa ptica gnezdarica (vidi tabele). Takođe je ukazano i na činjenicu, da se dato područje pojavljuje kao značajan biotop za ishranu ptica. Na osnovu prognoziranih promena očekuje se izvesno povećavanje brojnosti ptica gnezdarica u šumskim sastojinama. Na ostalim biotopima se, usled njihovog pojačanog narušavanja, ne može očekivati značajniji razvoj ornitofaune.