CHANGES TO THE AVIFAUNA OF VAS COUNTY FROM THE 19TH CENTURY TO PRESENT

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Goals

In this study we compared the previous three published cheklists (CHERNEL 1898, FROMM 1929, BARBÁCSY 1987) and the current list of the birds (GYURÁCZ ET AL. 2010) of Vas County. The main aspects of the analysis were: 1. To register the bird ordo and fauna type composition of the breeding and non-breeding avifauna. 2. To reveal the ordo and fauna type diversity of the breeding and non-breeding avifauna. 3. To predict the change of the avifauna in the 21st century.

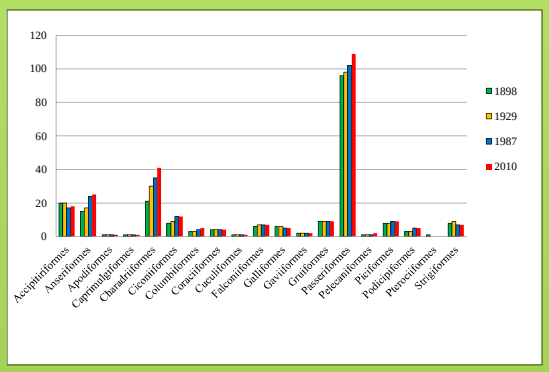


Fig 1. Species richness of bird ordo of the total fauna in four cheklists of Vas County. *Charadriiformes*: Chi² = 7.69, MC: P=0.04

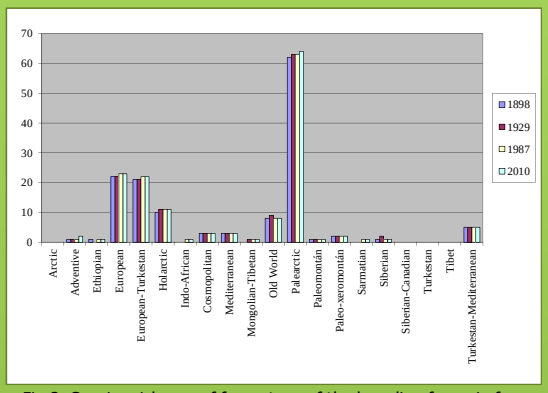


Fig 2. Species richness of fauna type of the breeding fauna in four cheklists of Vas County. MC: P>0.05

Fig 4. Change of the species richness of *Charadriiformes* to 2050 according to ARIMA model

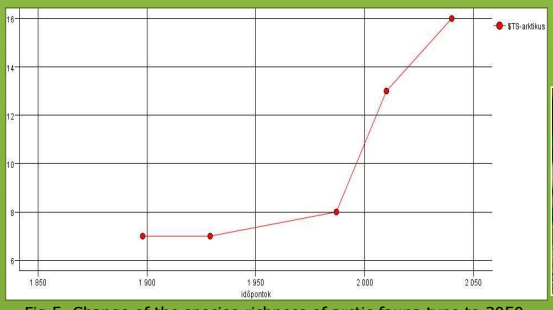
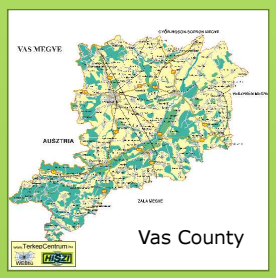


Fig 5. Change of the species richness of arctic fauna type to 2050 according to ARIMA model

Study area and methods

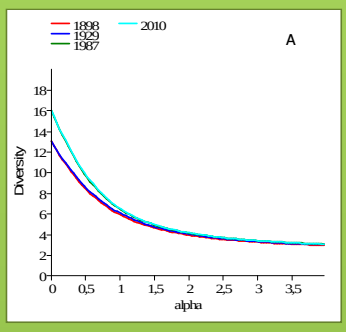
The area of Vas County can be found in the West Hungary. An annotated list of the birds of Vas County was published in 2010 (GYURÁCZ ET AL. 2010). We separated the total avifauna (list of breeding and non-breeding species), breeding avifauna (list of breeding species) and non-breeding (list of migrating and wintering species) avifauna of Vas County in the four checklist. The species of the different avifauna were grouped according to bird ordo and fauna type. We compared the distribution of species richness (number of species) of ordos and fauna types by fit test (Chi²-prob and Monte Carlo test). The ordo and fauna type diversities of the different avifaunas were compared by Rényi diversity profiles. Predict of the change of the bird ordo and fauna type species richness to 2050 was made by ARIMA model as a univariate analysis.

Location of Vas County



Results and conclusions

The sepcies richness of the ordo *Charadriiformes* in the total avaifauna increased significantly in the last 150 years due to established of the water reservoirs and other artificial small lakes during the 20th and 21st centuries in Vas County (Fig. 1). The most species of the ordo *Charadriiformes* migrating or wintering in Vas County were belonged to the arctic fauna type. The species richness (Fig. 2) and diversity of the fauna types (Fig. 3A) of the breeding avifauna did not change signficantly from the 19th century to the 21st century. The diversity of the fauna types of the migrating-wintering avifauna was singficantly lower in the end of 19th and early 20th century than it was in the end of 20th and early 21st century (Fig. 3B). For a change in avifauna referred to the global warming was not observed. According to time-series modelling the species richness of ordo *Charadriiformes* (Fig. 4) and arcitic fauna type (Fig. 5) grow up to 2050 in Vas County.



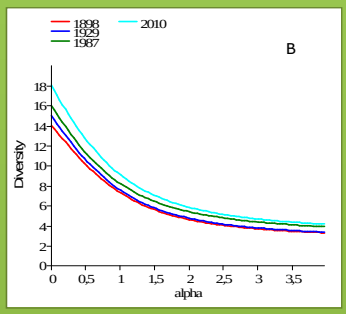
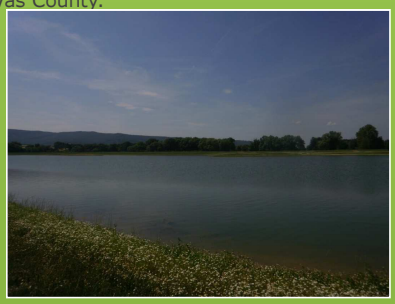
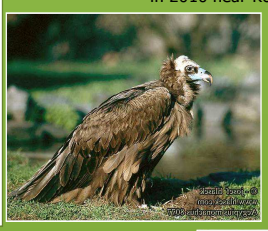


Fig 3. Fauna type diversity profiles of the breeding (A) and non-breeding (B) avifauna of the four cheklists in Vas County.



Water reservoir of Lukácsháza was established in 2010 near Kőszeg hills



Cinereous Vulture (*Aegypius monachus*) was not observed after 1950 in Vas County

The first record of Red Phalarope (*Phalaropus fulicarius*) on 13 November 2010 at water reservoir of Lukácsháza

The first record of Red-flanked Bluetail (*Tarsiger cyanurus*) in Hungary was on 12th October 2010at Tömörd Bird Ringing Station

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