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Changes in composition and abundance of game duck species in Lake Koronia, Greece

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Abstract

Lake Koronia is situated approx. 20 km east of Thessaloniki (northern Greece) and is listed as a Ramsar site. Hunting was prohibited in 1993. Over the past 10 years the water volume of the lake has reduced by 80 percent, mainly due to reduced rainfall and increasing water demand for irrigation of adjacent fields. Water depth is at 1-1,5 m and the fish fauna has almost become extinct. During the years 1997-2000, counts of game duck species have been conducted 6-7 times a year at regular intervals. Results show that there is a steady increase in the number of dabbling ducks, probably due to the constantly extending area of shallow water. The major peak in the number of ducks visiting the area is in September and October.

Introduction

Waterfowl numbers have been monitored in this area during the Midwinter Waterfowl Counts but our knowledge for the population status of game duck species throughout the year was very poor, as there was no population counts during autumn and spring in Greece for any wetland. Our purpose was to obtain information on the changes in composition and abundance of these species during the year and to examine if the constant degradation of a “protected” wetland, where no hunting activity occurs, causes any change to the duck populations.

Study area

Lake Koronia is situated approx. 20 km east of Thessaloniki (northern Greece), 74 m a. s. l. and is listed as a Ramsar site. Hunting has been prohibited since 1993. Over the past 10 years the water volume of the lake was reduced by 80 percent, mainly due to reduced rainfall and increasing water demand for irrigation of adjacent fields. Water depth is at 1-1,5 m and the fish fauna has almost become extinct. The factors that have been changing the wetland’s ecological character are:

Pollution: Municipal wastewater, municipal solid wastes, industrial wastewater, agricultural point source pollution, non-point source agricultural pollution

Other anthropogenic activities: Establishment of new industrial facilities or expansion of old ones, overpumping of ground water, establishment or expansion of livestock facilities, and cultivated fields.



Photo 1. Lake Koronia on July 1998. The red arrow shows the edge of the water.



Photo 2. Lake Koronia on August 2001. The green arrow shows the edge of the water.

Methods

During the period from January 1997 to December 2000, counts of game duck species have been conducted 7-9 times a year at regular intervals. Five observation points on elevated ground were established around the lake in order to get best cover of the water surface. Counts were conducted using two telescopes (20-60X80) early in the morning, starting from the same point and following the same route each time. Two experienced observers counted simultaneously and the mean of the two totals for each species was recorded.

Results and discussion

There is a considerable increase in the number of dabbling ducks in the last two years 1999 and 2000, probably due to the constantly expanding area of shallow water. At the same time two species of diving ducks (porchard and tufted duck) now appear irregularly. Throughout the year the major peak in the number of ducks visiting the area is in autumn (September and October) and secondly in the period from January to March. In the breeding season only a few pairs of mallard are present.

Mallard (*Anas platyrhynchos*)

Mallard is one of the two commonest species in our study area and the only one nesting there in very small numbers. This species is much numerous in autumn than in winter (Fig. 1). The highest number recorded is 6,325 in October 1999.

Teal (*Anas crecca*)

Teal is the second commonest species in the wetland and its monthly fluctuation follows that of the Mallard, except that evacuation of the area generally occurs after March and birds appear again in September. The maximum count is 7,420 individuals in October 1999 (Fig. 2).

Wigeon (*Anas penelope*)

Its appearance in the area tends to be irregular and limited (Fig. 3).

Shoveler (*Anas clypeata*)

Shoveler also seems to increase and the highest number recorded is 1,380 individuals in October 1999 (Fig. 4).

Pintail (*Anas acuta*)

Pintail follows the trend of the other dabbling ducks and the highest number counted is 2,630 individuals in October 1999 (Fig. 5)

Garganey (*Anas querquedula*)

Garganey appears in small numbers almost every March. The maximum count was 289 individuals in March 1998.

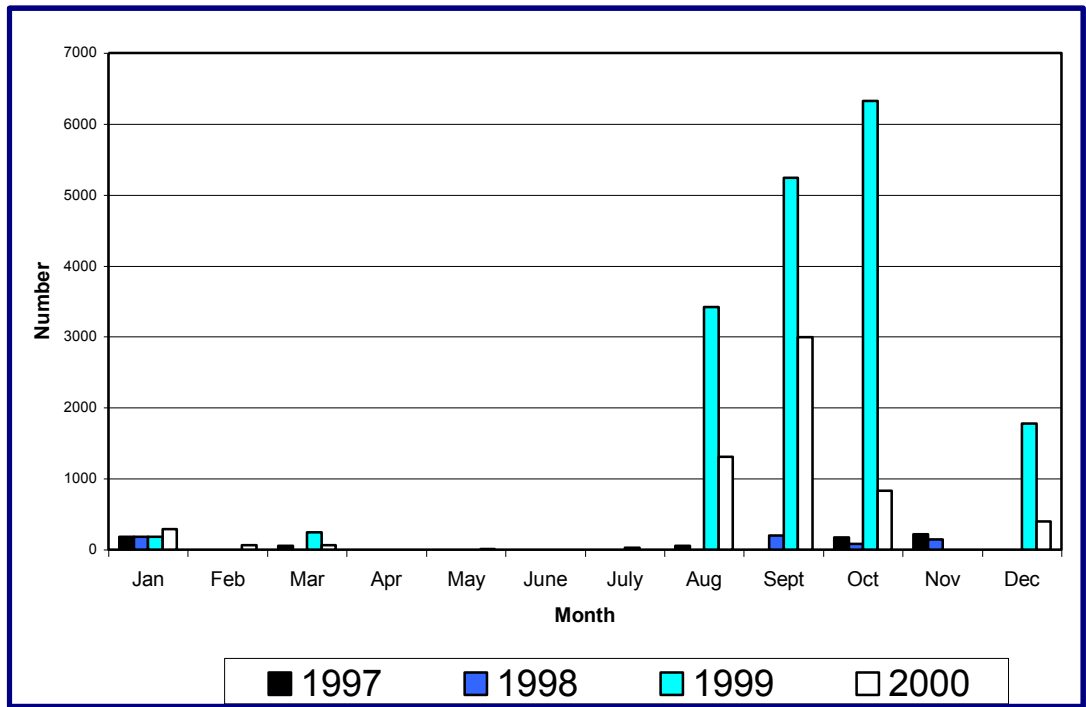


Figure 1. Monthly fluctuation of Mallard (*Anas platyrhynchos*) population in Lake Koronia through the years 1997 – 2000.

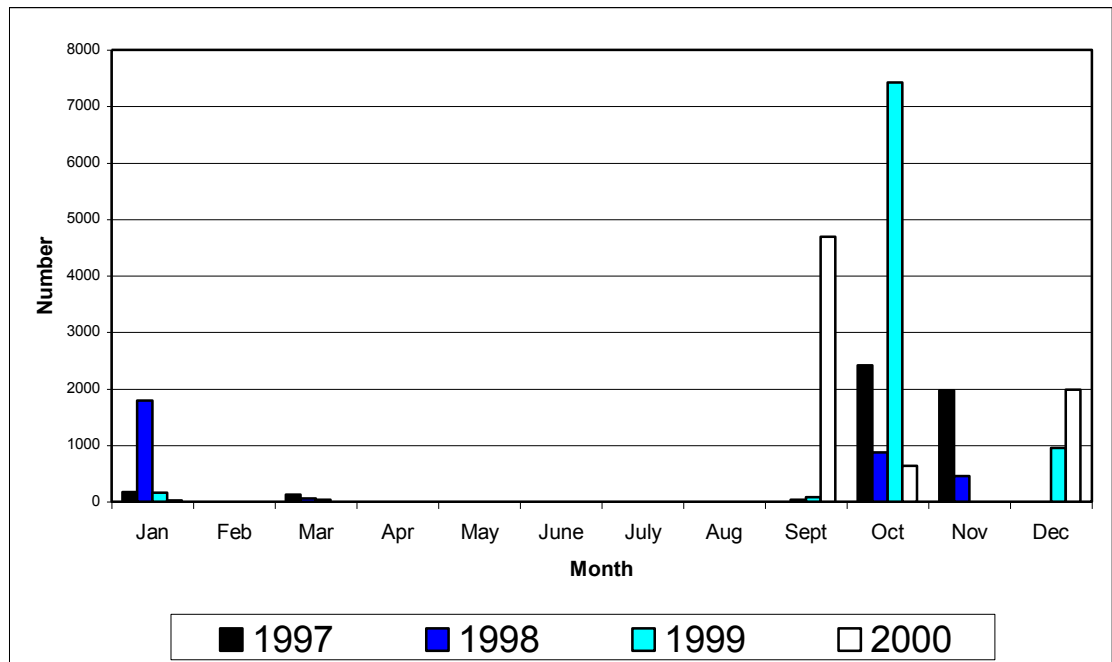


Figure 2. Monthly fluctuation of Teal (*Anas crecca*) population in Lake Koronia through the years 1997 – 2000

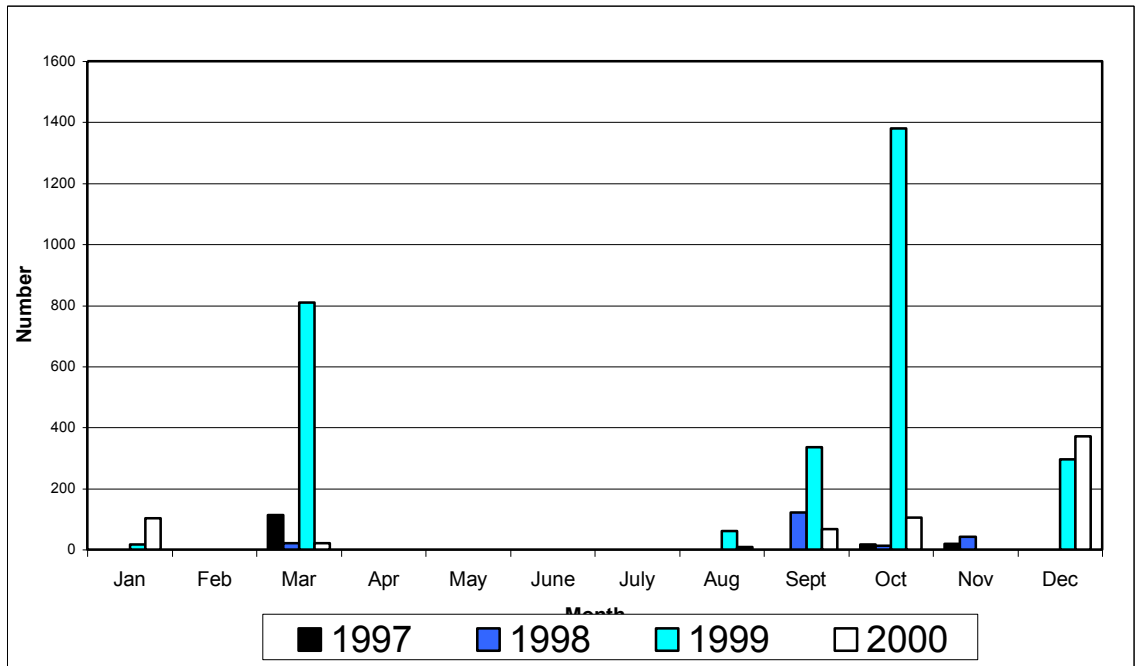


Figure 3. Monthly fluctuation of Shoveler (*Anas clypeata*) population in Lake Koronia through the years 1997 – 2000

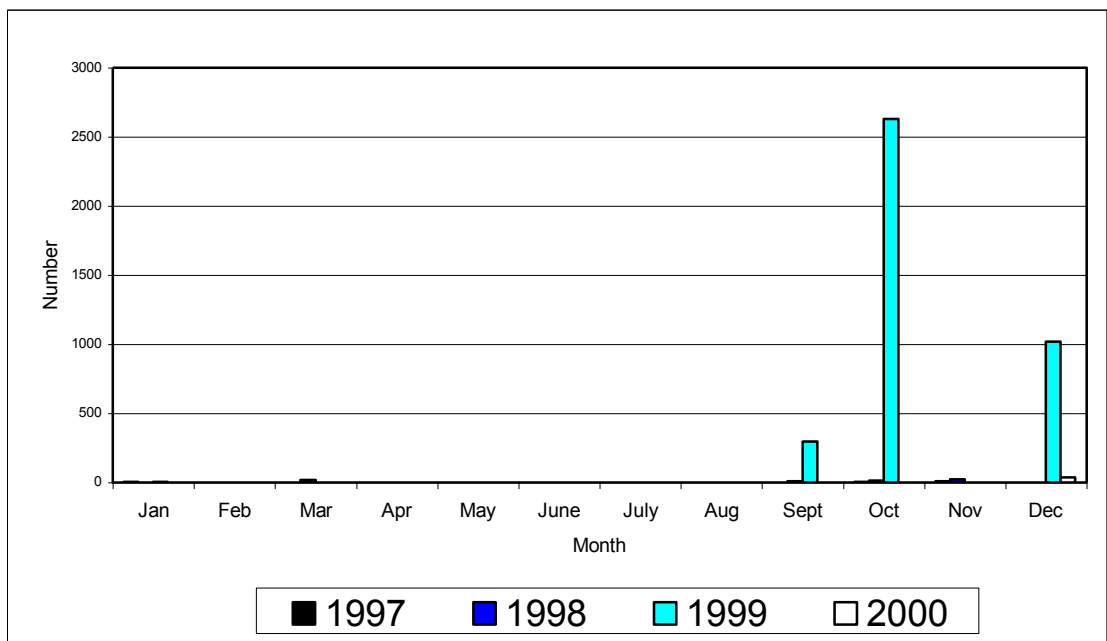


Figure 4. Monthly fluctuation of Pintail (*Anas acuta*) population in Lake Koronia through the years 1997 – 2000

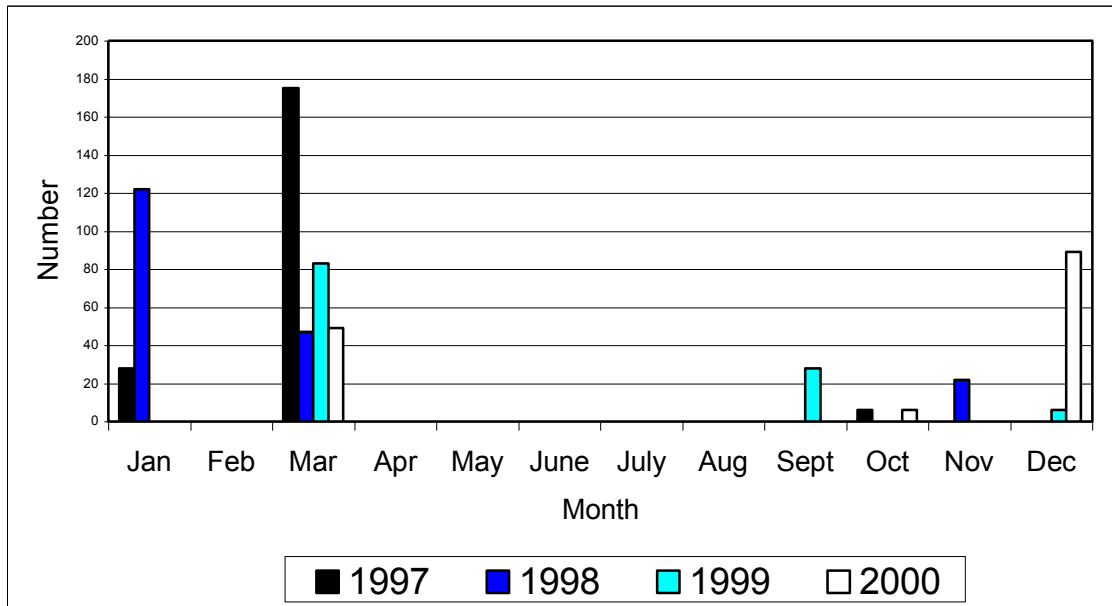


Figure 5. Monthly fluctuation of Wigeon (*Anas penelope*) population in Lake Koronia through the years 1997 – 2000

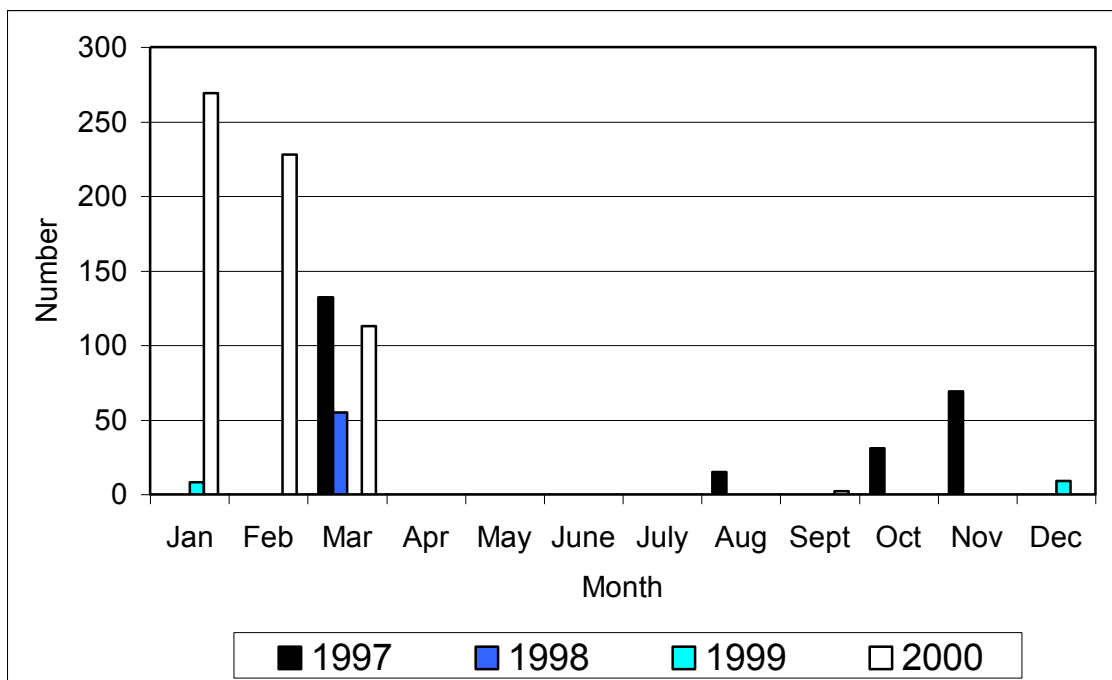


Figure 6. Monthly fluctuation of Porchard (*Aythya ferrina*) population in Lake Koronia through the years 1997 – 2000

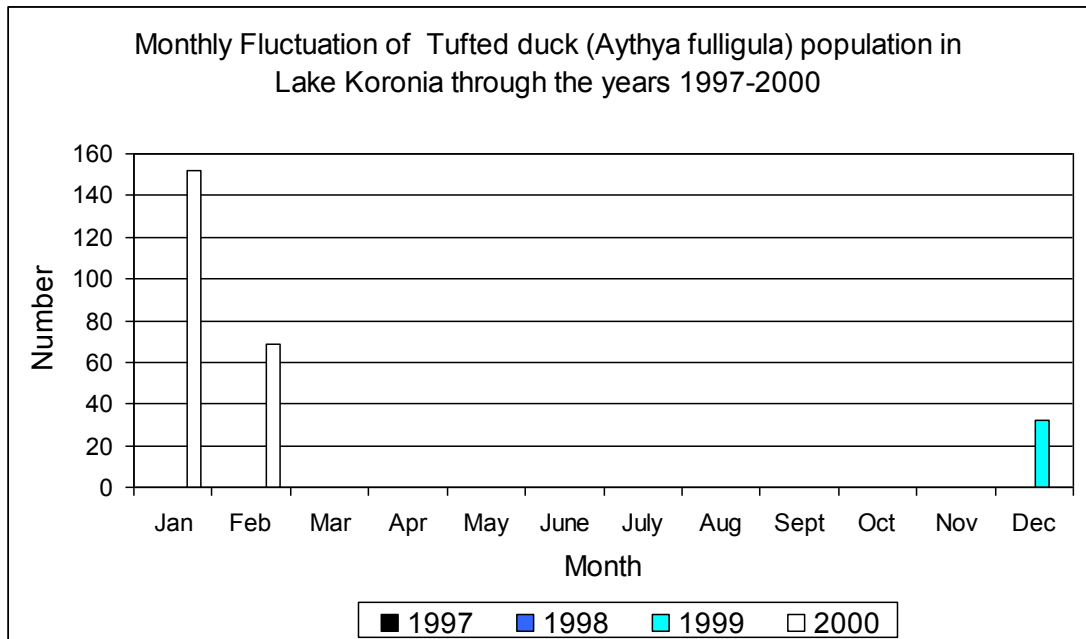


Figure 7. Monthly fluctuation of Tufted duck (*Aythya fuligula*) population in Lake Koronia through the years 1997 – 2000

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