

## WINTERING OF RED-BREASTED GEESE (*BRANTA RUFICOLLIS*) IN SOUTH-EAST EUROPE

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### Abstract

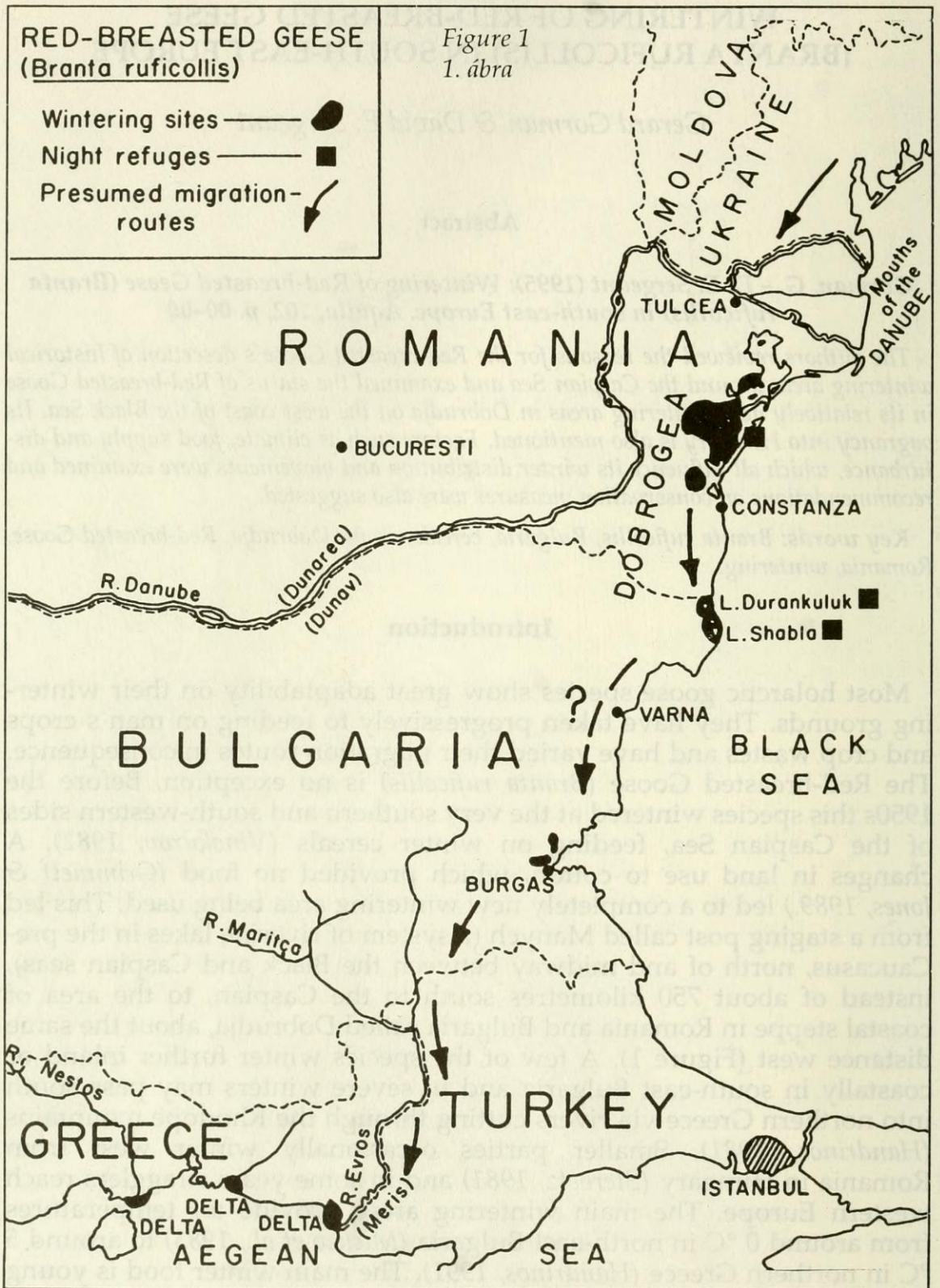
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The authors reviewed the reasons for the Red-breasted Goose's desertion of historical wintering areas around the Caspian Sea and examined the status of Red-breasted Goose in its relatively new wintering areas in Dobrudja on the west coast of the Black Sea. Its vagrancy into Hungary is also mentioned. Factors such as climate, food supply and disturbance, which all influence its winter distribution and movements were examined and recommendations on conservation measures were also suggested.

**Key words:** *Branta ruficollis*, Bulgaria, cereals, crops, Dobrudja, Red-breasted Goose, Romania, wintering.

### Introduction

Most holarctic goose species show great adaptability on their wintering grounds. They have taken progressively to feeding on man's crops and crop wastes and have varied their migration routes in consequence. The Red-breasted Goose (*Branta ruficollis*) is no exception. Before the 1950s this species wintered at the very southern and south-western sides of the Caspian Sea, feeding on winter cereals (Vinokurov, 1982). A change in land use to cotton, which provided no food (Grimmett & Jones, 1989.) led to a completely new wintering area being used. This led from a staging post called Manych (a system of riverine lakes in the pre-Caucasus, north of and midway between the Black and Caspian seas), instead of about 750 kilometres south to the Caspian, to the area of coastal steppe in Romania and Bulgaria called Dobrudja, about the same distance west (Figure 1). A few of the species winter further inland or coastally in south-east Bulgaria and in severe winters may pass south into northern Greece via rivers cutting through the Rhodope mountains (Handrinos, 1981). Smaller parties occasionally winter west from Romania in Hungary (Sterbetz, 1981) and in some years stragglers reach western Europe. The main wintering areas provide air temperatures from around 0 °C in north-east Bulgaria (Michev *et al.*, 1983) to around 5 °C in northern Greece (Handrinos, 1991). The main winter food is young



winter wheat and barley supplemented with maize and wild grasses (Sutherland & Crockford, 1993). The species consorts regularly with White-fronted Geese (*Anser albifrons*) which are numerically dominant in the same areas and habitats.

### Personal Observations

The authors took part in an expedition to the Danube Delta and Romanian Dobrudja from 14–19 February, 1994. Gorman had previously visited these areas in the winters of 1989 and 1991. Air temperatures during the 1994 visit started at *circa* -8 °C and at the end were just above freezing. Water was open in the main Sulina channel of the Danube and partly open in side channels and lakes. Here the common goose was Greylag-Goose *Anser anser*. As we left the Delta on a route paralleling and south of the southern St. Gheorghe channel, Greylags were soon replaced by White-fronts on wheat-fields. With them were a few Red-breasted Geese. However, our total estimates from travel by bus and on foot in northern Dobrudja (Fig. 1) were about 15,000 White-fronts and only about 200 Red-breasts. This area has secure coastal roosts for geese on offshore sandbanks (Scott, 1970; Sutherland & Crockford, 1993) but at the time of writing no legal protection for them on farmland against disturbance and shooting. Abundant goose droppings in and around the low green cereal crops also showed that heavy and selective feeding had taken place in the recent winter but we saw geese also on maize stubble and ploughland. In southern Dobrudja we saw almost no geese: this stretch of the coast is highly urbanized with no potential roosting sites for geese.

### Factors Affecting Winter Distribution

#### *Climate*

While winter wildfowl counts have not been adequately coordinated between Romania and Bulgaria, most observers searching for Red-breasted Geese have visited northern Dobrudja between November and January and have often found large numbers (Johnson & Hafner, 1970; Scott, 1970; Sutherland & Crockford, 1993), while we found very few in mid-February 1994. Bulgarian observers however carry out countrywide wildfowl counts in late January (Ivanov & Pomakov, 1983). This may provide reasonable evidence for a southward movement of Red-breasts in the coldest period of winter. White-fronted geese movements are not so extreme; we found some 15,000 in Romania in mid-February. Munteanu *et al.* (1991) state that Red-breasts leave Romania in severe winters. In mild

winters there may be over 100,000 White-fronts in Romanian Dobrudja, but they also tend to leave the country in harsh winters with heavy snow-fall. Deep snow probably prevents access to low-lying winter cereals.

The winter of 1993/94 was particularly harsh in Dobrudja with lower than usual temperatures and a poor winter wheat crop. Red-breasted Goose flocks which had assembled in November began to fragment and disperse in January. A wider than usual dispersal occurred with birds recorded as far afield as Moravia, Austria, the UK and even Spain. At least 16 birds visited the Hortobágy in early 1994 (*Kovács, pers. comm.*) the usual figure is from 1-5. Individuals and small groups were also observed in the Kiskunság, Pusztaszer and Transdanubia in the same period. Interestingly, in the winters of 1989/90 and 1990/91 when conditions were mild in Dobrudja and record flocks counted, only from 1-4 birds were observed on the Hortobágy.

### Food

Very selective feeding takes place on winter cereals in northern Dobrudja (*Sutherland & Crockford, 1993*). Judging by the high density of goose droppings in and around these fields in mid-February, the grazing of the cereals is intensive. *Patterson (1991)* found some loss or delay of yield in all experimental studies of goose grazing on winter cereals or its simulation by clipping, and that loss was proportional to grazing rate. It is possible that there has been a reduction of area of winter cereal crops in the Dobrudja and its replacement by other crops such as maize. This was suggested to *Ivanov and Pomakov (1983)* by two Romanian observers, and a detailed estimate of the relative areas of different crops and other forms of land use was given by *Sutherland & Crockford (1993)* for the 1990-91 winter which could be repeated in the future. *Ivanov and Pomakov* therefore suggested that a shortage of food for geese in this region may have developed. In other words, farmers may have reduced their planting of green winter cereals because of goose damage. However, this needs to be proved and interviews with the people concerned should be carried out to determine their attitudes to winter goose grazing.

The relatively low use of maize by geese in Dobrudja is remarkable, considering its widespread and increasing use by, for example, Greater Snow Geese (*Anser caerulescens*) staging in western Quebec in spring (*Gauthier et al. 1992*), and by Common Cranes (*Grus grus*) in southern France (*Genard et al. 1991*), and in Hungary (*Gorman, pers. observations*). It has been shown that maize grains displaced by mechanical harvesting may remain in the soil and be eaten by cranes

all winter. Lack of widespread use of maize in Dobrudja may be due to (a) it being harvested more efficiently, possibly by hand, and (b) to Red-breasted Geese being loath to feed in standing maize where their vision is impeded. *Scott (1970)* implied both factors when he described the species as "being uneasy" in standing maize, though less so on maize stubble. But these observations are now some 20 years old and ornithologists need to study or record modern land use methods in the Dobrudja, which *Sutherland and Crockford* thought were changing.

### *Disturbance and Shooting*

White-fronted Geese are the main object of hunting in Romania and Bulgaria. Because Red-breasts mix with them they are liable to be hunted, too, though they are said to be very wary when leaving the protected zone at Lake Shabla in Bulgaria and rise very rapidly to altitude (*Ivanov & Pomakov 1983*).

The protected zones of Lakes Shabla and Durankulak do not only have lakes for roosting but are surrounded by a buffer zone of sown cereals 500 metres wide. The mean mid-winter temperature is just above freezing. Due to these reasons the percentage of geese wintering in this part of Bulgaria has gradually increased: to 84% of White-fronts and 99,8% of Red-breasts (*Ivanov & Pomakov, 1983; Michev et al., 1991*).

One risk for the Shabla-Durankulak area is that in very severe winters it may become completely snow-covered. There is then the need for a safe reserve in southern Bulgaria or as far south as the Evros Delta, Greece-Turkey. There is also probably a strong case for some kind of protected land with good food sources in the northern part of Romanian Dobrudja, even if used only in early winter, because of the existing safe coastal roost sites.

The provision of alternative crops might be studied. In Norfolk, England, sowing of a large crop of sugar beet *Beta vulgaris sp* was tested on an estate 10 kilometres inland where barley was also grown. Sugar beet in England is harvested in October-December and the top of the root with leaves attached is a waste product. Pink-footed Geese (*Anser brachyrhynchus*) flying from a coastal roost were attracted to the beet as food, so long as its area greatly exceeded that of the barley (*Cross, 1994*). A comparable "bait" crop might be tried on the Black Sea coast, though beet might not be suitable in the warmer summers. *Ivanov & Pomakov (1983)* speak of "a new forage crop" which they do not name, as attractive to White-fronted and Red-breasted Geese when they leave the Shabla-Durankulak lakes for daytime feeding areas.

## Numbers

On their summering grounds, following breeding, *Vinokurov (1982)* estimated 22,000–27,000 Red-breasted Geese in 1978–79 from aerial and boat surveys. *Vinokurov (1990)* estimated 35,000 in the same ways in 1989.

On their dispersed wintering grounds in Romanian Dobrudja *Johnson & Hafner (1970)* estimated 25,000 in November–December 1968–69, *Sutherland & Crockford (1993)* 24,000–34,000 in December 1990 – January 1991, and *Vangeluwe & Stassin (1991)* 29,000–35,000 in the same period. *Sutherland & Crockford* considered that they were counting the majority of the species' population whereas the second authors believed that as many birds might have been in Bulgaria at the same time.

In the Kirov Bay reserve, south-western Caspian Sea, *Uspenski & Kishko (1968)* estimated 40,000 Red-breasted Geese in the winter of 1956. At the Shabla–Durankulak reserves in Bulgaria resident observers estimated 59,000 on January 11–12, 1993 (*Black & Madsen, 1993*) An additional 6,000 were near-simultaneously in Romania, possibly making a grand total of 65,000 birds (*Black & Madsen 1993*).

The highest counts therefore come from the wintering areas, when cold weather forces birds to concentrate. Such figures may well approach a total count for the species.

## Recommendations

1. Coordinated counts of White-fronted and Red-breasted Geese are desirable across the whole of Dobrudja in the wintering period of October–March. A minimum of two counts, in for example, December and February, would identify local hard-weather movements: a single coordinated winter count in late January or early February would identify the degree of concentration produced in late winter.

2. Areas of winter cereals, maize and ploughland need remapping to determine changes in land use. This could be done together with the counts of goose numbers.

3. Field interviews are needed with villagers and farmers in order to determine whether they regard feeding wild geese as a threat to crops and whether, as a result, or for other reasons, they may be changing their land use patterns in ways which could affect goose distribution.

4. The feasibility and cost of establishing additional reserves across Dobrudja to be planted with forage crops for geese should be explored in order to prevent the risk of excessive concentrations and reliance on one or two sites. Subsidies to farmers for winter cereal crops could be considered.

Some of these recommendations are not new. *Puscariu* (1983) recommended reserves in several areas of wheat-fields in Romanian Dobrudja to reduce disturbance. *Michev et al.* (1983) identified suitable climate, food and reduction of disturbance as key needs. *Gorman* (personal observations in 1991 and 1994) and *Sutherland & Crockford* (1993) noted disturbance, though few kills, of geese by hunters in Romania, but all feared the advent of organized hunting tourism.

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## A vörösnyakú lúd (*Branta ruficollis*) telelése Délkelet-Európában

### Összefoglalás

Szerzők a vörösnyakú lúd (*Branta ruficollis*) kelet-európai telelését tárgyalják különös tekintettel Dobrudzsára és Románia, illetve Bulgária fekete-tengeri partvidékére. Kitérnek a faj magyarországi előfordulására is. Taglalják annak lehetséges okait, miként tevődött át a faj telelőterülete a Kaszpi- és Fekete-tenger keleti részéről Dobrudzsára. Személyes megfigyeléseiket a régi és újabb irodalmi adatokkal összevetve részletezik a ludak telelőterületének változásában szerepet játszó tényezőket. Ezek közé tartozik az éghajlat, táplálékbázis, változások a földhasználatban, zavarás, vadászat útján történő terhelés. A vonulás irányával, az állomány nagysággal és állományváltozásokkal kapcsolatban is becsléseket tesznek a szerzők. A vörösnyakú ludak új telelőterületén a faj érdekében hozandó alábbi védelmi intézkedéseket javasolják: rendszeres és megbízható számlálások; kapcsolatteremtés a gazdálkodókkal és tulajdonosokkal; a vetemények térképezése; esetleg tápláléknövények ültetése; és a veszélyeztető tényezők (elsősorban vadászat) állandó figyelemmel kísérése.