Anser fabalis

Bean Goose

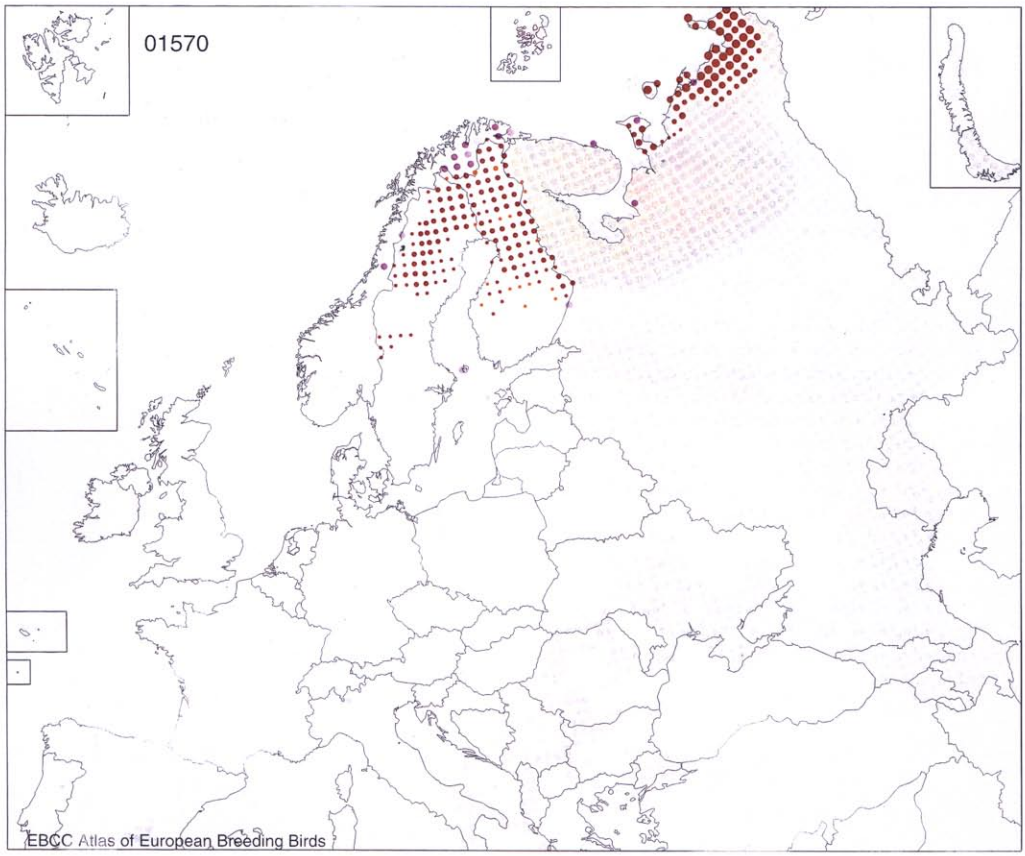
CZ	Husa polní	I	Oca granaiola
D	Saatgans	NL	Rietgans
E	Ansar Campestre	P	Ganso-campestre
F	Oie des moissons	PL	Gęś zbożowa
FIN	Metsähanhi	R	Гуменник
G	Χωραφόχηνα	S	Sädgås
H	Vetési lúd		

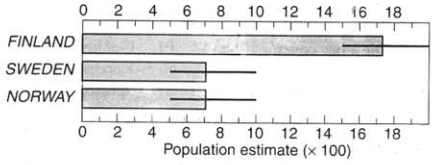
Non-SPEC, Threat status S

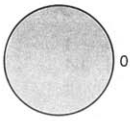
The Bean Goose is widely distributed across the northern Palearctic from N Norway to the E Siberian Khrebet Peninsula, a large range containing perhaps five subspecies, two of which occur in Europe: the Taiga Bean Goose *A.f. fabalis* and the Tundra Bean Goose *A.f. rossicus*. It is now generally accepted that populations should be separated into Taiga and Tundra types; some authorities have suggested full species status.

Taiga Bean Goose *A.f. fabalis*. The *fabalis* breeding range comprises the taiga of Scandinavia, Russian Karelia and the Kola Peninsula (Filchagov *et al* 1985). In Norway *fabalis* is virtually restricted to Finnmark, in Sweden it nests from Jämtland northwards, a small isolated population breeding in Dalarna, and in Finland it is scarce on the palsa (peat-mounds with permafrost cores) mire zones of Finnish Fjeld Lapland and absent from the southern raised bog complexes. Further E *fabalis* is reported to have bred in the forest tundra and the taiga of the Arkhangel'sk district, the Kani republic, and the Pechora-Ilych reserve (Lebedeva 1979, Yu.N. Mineyev pers comm).

The Taiga Bean Goose inhabits the forest zone, the home range always including a variety of mire types, mire forests, ponds, small lakes and streams. Among forest mire types







% in top 10 countries: 100.0
Total number of populated European countries: 3
Total European population 2773–3640 (3146)
Russian population 80,000–120,000 (97,980)

apparently it prefers spruce *Picea* mires, especially complex mire systems. The largest Bean Goose breeding concentrations in northern Finland occur on mesotrophic flark (pattern of wet areas in spring) fens in the aapa (wet, minerotrophic) mire zone comprising a mosaic of open fens and spruce mire. Sweden's sole area with dense Bean Goose populations lies in the northeastern aapa fen region. The dependence of *fabalis* on aapa mires may relate to suitable food plant production (Pirkola & Kalinainen 1984a, b). Probably the former dense populations further S in Sweden depended on suitable habitats being maintained by haymaking on the mires (Mellquist & von Bothmer 1984).

Censusing difficulties prevent the compilation of accurate breeding densities. S Swedish Lapland holds 1 bp/1165ha of wetland, but excluding unsuitable mires, holds *c*50–100 bp/16.245km² (P. Eriksson & Henricsson 1990). Roughly estimated, *fabalis* numbers are 500–1000bp each in Norway and Sweden, 1500–2000bp in Finland and 3000–6000bp in Russia.

The *fabalis* autumn migration in October sees 80 000 reach S Sweden, some 50 000 of which continue S of the Baltic. Smaller numbers pass W and S of the Baltic. By November, the remaining *c*30 000 either overwinter in Sweden, or move SW in sustained harsh weather (Nilsson & Persson 1984, Nilsson & Pirkola 1991).

Wintering *fabalis* numbers are estimated at 80 000–90 000 birds (Madsen 1991). An unknown proportion comprise *fabalis* populations breeding in the W Siberian lowlands, considered by Delacour (1951) as *johanseni*. However, the validity of *johanseni* is questionable, because Burgers *et al* (1991) showed that *fabalis* wintering in The Netherlands originate partly in the W Siberian taiga. Of the more eastern subspecies *middendorffii*, only 10 000–25 000 birds remain (Rose & Scott 1994); it is declining severely (Callaghan & Green 1993), a warning to protect *fabalis* in Europe.

Tundra Bean Goose *A.f. rossicus*. The *rossicus* breeding range lies in the tundra belt from the Kanin Peninsula E to the Khantanga River (Delacour 1951), along the Barents Sea coast, penetrating further S into the low-bush tundra than that of the White-fronted Goose *A. albifrons*; the summer habitat structure of *rossicus* is more diversified for it breeds in 12 of the 15 landscape types defined by Mineyev (1987). Typical *rossicus* breeding habitats comprise: poorly drained tussock-moss–crowberry *Empetrum* tundra (27% of nests found); poorly drained tussock-moss–willow *Salix* tundra patches (16%); slightly elevated tussock-moss tundra (16%); river and stream banks (15%), and much less frequently, grassland–tussock-moss tundra (5%) and willow–crowberry tundra on the edges of rolling uplands (5%) (Mineyev 1987).

Breeding density of *rossicus* in European Russia fluctuates between 2 and 10 bp/km², *c*50% of the population breeding at high densities, as in the Kanin Peninsula, the Vizhas-Oma watershed, the Malozemel'skaya and Bol'shezemel'skaya tundras and on Yugorskiy Peninsula (Mineyev 1990). On NE Vaygach Island, Syroechkovskiy *et al* (1991) reported 21, 20 and 61 nests/20km² respectively in 1986, 1987 and 1988.

In years of unfavourable ecological conditions the number of breeding geese finding optimum habitats reduces several-fold and in some years (1973, 1977, 1987) only odd solitary pairs may breed (Mineyev 1990). On Vaygach Island, breeding success is determined by weather conditions during egg-laying and incubation, by lemming cycles, and by Arctic Fox *Alopex lagopus* nest-predation (Syroechkovskiy *et al* 1991), the last-named seemingly being especially important. No successful nests were found on Yugorskiy Peninsula in 1984 because of high Arctic Fox density, but in 1985 many nests were successful when foxes were absent (Gritchik 1995, Yu.N. Mineyev, pers comm).

Allowing for seasonal changes, probably some 250 000–400 000 Bean Geese inhabit the NE European Russian tundra, *c*20–40% actually breeding (Mineyev 1990). Tentatively, the entire European breeding population, inclusive of Kolguyev Island and southern Novaya Zemlya, may total 85 000–150 000bp; perhaps 25 000–75 000 is more likely.

Populations of *fabalis* and *rossicus* perform 'leap-frog' migration, *rossicus* coming from further NE to winter further S on the Pannonian plain, in the Balkans, France, Italy and Spain, where few *fabalis* are recorded (Huyskens 1986, van Impe 1987). Some exchange occurs between the W European and the Danube basin wintering populations (van den Bergh 1984). W Palearctic *rossicus* wintering numbers probably total 300 000 birds (Madsen 1991); Spain's population has decreased sharply (Persson & Urdiales 1995).

NE Europe has experienced severe environmental degradation locally (Kotlyakov & Agranat 1994). New oilfields found on the Pechora bay coast will be exploited shortly (eg Sagers 1994). The Tundra Bean Goose may therefore face further long-term threats, especially given that its southern limit in C Siberia apparently is retreating northwards (Rogacheva 1992).

The eastern subspecies *serrirostris* has declined sharply in number since the mid-1970s in some Russian Far East tundras, probably partly through poorly regulated oil exploitation on the breeding grounds (Ler *et al* 1989). The Mace–Lande criteria suggest *serrirostris* is vulnerable (25 000–100 000 birds) (Callaghan & Green 1993).

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