Monitoring of geese spring migration stopovers and forecasting of the bird numbers

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The farmland in the outskirts of Olonets city (Karelia, 60°58'N, 32°58'E) represents one of the largest stopover sites for geese during spring migration in Russia. The three main factors relevant to guarantee the stability and quality of this migration stopover are 1) a hunting ban at the protected area of 5 000 ha, 2) good foraging conditions and 3) safe night rest sites in the surrounding swamps and Lake Ladoga. The total annual number of geese using the territory varies from 100 000 to 150 000 birds. During the period 1997-2014 and on average for about 3 weeks daily numbers of more than 10 000 geese were registered in the field. On some days up to 20 - 33 000 individuals were counted. The White-fronted Goose (*Anser albifrons*) is the most numerous species (about 75 % of birds), approximately 15 % of geese are Bean Geese (*A. fabalis*) and 10 % represent Barnacle Geese (*Branta leucopsis*). Trends in bird numbers depend on the spring weather, grass quality and human disturbance. The relations between geese numbers and the registered parameters can be described using simple functions, for instance linear regression models. Besides the geese migration follows the 'green wave', the appearance of the first shoots of grass with high nutritional value (Drent et al. 1978; Graaf et al. 2006). Therefore, indicators describing the local weather and phenology can be the basis for predicting the dynamics of bird numbers at each stopover. It should be noted that the human disturbance factor, e. g. poaching and spring burning of last year's grass by farmers, have a negative influence on the accuracy of predicted geese numbers. However, such activities represent violations of law and we try our best to keep the Olonets spring stopover site undisturbed.

Numbers and distribution of wintering waterbirds in Krasnodar province, Southwestern Russia

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With extensive Sea of Azov and Black Sea coasts and inland waterbodies, the Krasnodar Province provides important winter quarters for waterbirds, especially in mild winters. The International Waterbird Census (IWC) was established in the region in 2003 and has been annually conducted since then except for 2007-2009. The coverage varied, depending mostly on the respective wetlands conditions (frozen or not). Altogether, 37 sites were counted at least once between 2003-2016, with high coverage (27 sites) in 2004. The total numbers of waterbirds varied from 145,614 in 2003 to 1,112,213 in 2013. Among individual sites, the highest number of waterbirds (353,982) was recorded in Taman Bay in 2013. Altogether, 74 species of waterbirds, 8 species of wetland-dependent raptors and one marine bird species were identified. Most numerous species were Mallard (highest total was 396,920 in 2013), Common Black-headed Gull (243,615 in 2013), Coot (147,390 in 2011), Tufted Duck (137,839 in 2014) and Common Pochard (106,069 in 2013). Mallard, Common Black-headed Gull, Tufted Duck and Common Pochard demonstrated strong or moderate increase over the period 2013-2016, while Coot showed a moderate decrease. The White-tailed Eagle (highest total was 252 in 2006) was the most abundant species among birds of prey. Four globally threatened waterbird species were found: Dalmatian Pelican (2003-2016), Lesser White-fronted Goose (in 2013), Red-breasted Goose (in 2006 and 2016) and White-headed Duck (in 2011, 2013 and 2014). Along with mild weather, low disturbance in January is a critical factor for waterbirds to stay in Kransnodar Province. However, infrastructure development and housing at the sea shores causes a degradation of some important wetland habitats.