INTEGRATING EXPERIENCES FROM NORTH AMERICA INTO CONSERVATION PRACTICES FOR GOOSE POPULATIONS IN WESTERN SIBERIA

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In contemporary Russia, the most effective means of implementing conservation measures is through the creation of hunting-free zones. Justifying the creation of such zones requires knowledge of the abundance and trends of goose populations and the key areas they exploit. We chose to create a model for these variables in the Yamalo-Nenets Autonomous Okrug of Western Siberia. Based on North American experiences, we used ultra-light aircraft to count waterfowl and applied GSM-GPS transmitters to determine goose migration patterns and highlight the key sites exploited in these areas of migration. In the spring and autumn of 2012 through 2014, we conducted more than 50,000 km of aerial-survey transect flights to count 24 species of waterfowl and confirm these numbers by photography. We estimated population abundance for each species, accounting for differential densities in 16 selected habitat types, classified from Landsat imagery. By extrapolation, we determined the total number of counted birds for each species in each selected habitat type, calculated the mean density within each habitat type in the survey area and from this determined the estimated number in the entire study area. Using anonymous questionnaires, we were able to make preliminary assessments of the size of the hunting bag and the extent of illegal shooting. The results indicated declines in many hunted species. Based on these data, we recommended the creation of 10 hunting-free zones, defined their boundaries, and recommended amendments to the existing hunting regulations. GIS layers were compiled to show the routes of the aerial surveys, the boundaries of key sites, the main migration routes, the distribution of detected birds along each transect and the locations of rare species. These techniques offer a vital basis for longer term continued monitoring and development of a system to support the wise use of goose populations in the region and can be used in other regions of Russia.

MONITORING OF GOOSE POPULATIONS OF THE NORTHERN KAZAKHSTAN MIGRATION STOPOVER

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The results of autumn goose counts on the North-Kazakhstan staging area are presented. This unique area is the single place where we can estimate the status of goose populations, because the geese concentrate in huge numbers on a small area of lakes. Analysis of the results of autumn goose counts in Northern Kazakhstan for the period 1996–2014 proved that the entire Red-Breasted Goose (Branta ruficollis) and Lesser White-fronted Goose (Anser erythropus) populations, as well as the majority of the Eastern European White-fronted Goose (A. albifrons) population and the Eastern European subspecies of the Greylag Goose (A. anser), use this area. During the course of different projects undertaken since the 1990s, key areas for the geese were determined. We outline and discuss the deficiencies of the former methods of counting and describe our current method of monitoring, in which a combination of questionnaires and analysis of data from birds marked with transmitters was used to determine the optimal dates and locations for field counts. Since 2008, we have used photography for the estimation of species and age ratios in goose flocks. We give proof that this method is more precise than that of visual estimation. Combining these methods enabled us to find previously unknown key stopover sites for the Red-Breasted and the Lesser White-fronted Goose and to expand the study area. The main result was the detection in Northern Kazakhstan and in the Orenburg and Omsk districts of Russia of 10 major stopover sites, on which we should concentrate conservation and monitoring efforts. Since the territory of the study region is characterized by great variability, owing to the unstable hydrological regime of the lakes of the steppes, a complex of criteria was used to identify these key locations. This experience could be extended to other stopover sites on the steppes for other flyways.