

Identifying environmental parameters for goose spring migration from last staging site to breeding ground

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Abstract

The timing of goose migration can be explained by energy cue (i.e. body store), and two kinds of environmental parameters: external (food, weather), and time-related cues (day length). However, it is not clear which environmental parameters are important in different migration stages of most species. In this study we focused on identification of environmental parameters that significantly effect on the last stage of migration of the Russian barnacle goose, *Branta leucopsis*. The environmental parameters included food availability, day length, and weather parameters. The tracking data covered 12 GPS-tagged Russian barnacle geese (2008-2010). A linear mixed-effect model and principal component analysis (PCA) were used to retrieve statistically significant parameters. Our results demonstrated the prominence of weather parameters for spring migration. We found day length to be important for departure time from the last staging site in the Russian flyway. Moreover, food availability at the breeding site affected arrival time to the final destination. Our study confirms external parameters (food, weather), and time (day length) as main environmental parameters that influence on the last stage of goose spring migration.