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Dries Bonte,
Editor-in-Chief,
Oikos.

22nd December, 2017

Dear Prof. Bonte,

I'm happy to submit this manuscript arising from my master's thesis work entitled "*Family size dynamics in wintering geese*" by Gupte et al. for consideration for publication as a research paper in *Oikos*. The development of family bonds of migratory geese over the course of winter, and their effect on the choices these social birds make has received relatively little attention despite extensive regular monitoring of goose populations across Western Europe, and we set out to fill this lacuna.

In this manuscript, we undertake the first formal description of spatio-temporal patterns in the greater white-fronted goose (*Anser a. albifrons*), using long-term observation data and GPS tracking. We show that observed goose family size (the number of juveniles accompanying an adult) is an important determinant of where families winter, yet is also predicted by when in the season a family is observed. Further, we show that the likelihood of geese splitting off from families is related to flight events. Finally, we show that juveniles and families persist in Europe later than other geese, which lead us to suggest that this population may be differentially migratory in spring by social status. Previous short-term studies have been unable to find such an effect (Madsen 2001, Bêty et al. 2004), making this work the first to show that spring migration timing is variable in true geese.

We believe our findings are applicable to geese at large, making this work a significant point of reference for the further investigation of the maintenance of family bonds in a long-lived, social migrant, the relation between social systems and migration, as well as for the management of one of the most abundant Arctic migrants in Europe. We believe our work, a combination of methods to answer connected questions, would fit well in *Oikos*.

We confirm that this manuscript has not been published elsewhere and is not under consideration by another journal. All authors have approved the manuscript and agree with its submission to *Oikos*. Should you consider this manuscript acceptable, we suggest the following reviewers:

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Thank you for your time and consideration.

Yours sincerely,



Pratik Gupte
Research Assistant,
Macrophysiology Lab, Centre for Ecological Sciences,
Indian Institute of Science.
and
Vanak Group,
Ahsoka Trust for Research in Ecology and the Environment.