Accepted Manuscript

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PII: S1873-9652(17)30114-7

DOI: 10.1016/j.polar.2018.03.001

Reference: POLAR 376

To appear in: *Polar Science*

Received Date: 13 October 2017

Revised Date: 9 March 2018

Accepted Date: 14 March 2018

Please cite this article as: Mazei, Y.A., Lebedeva, N.V., Taskaeva, A.A., Ivanovsky, A.A., Chernyshov, V.A., Tsyganov, A.N., Payne, R.J., Potential influence of birds on soil testate amoebae in the Arctic, *Polar Science* (2018), doi: 10.1016/j.polar.2018.03.001.

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ABSTRACT

Birds can be an important agent of environmental change in High Arctic ecosystems, particularly due to the role of seabirds as a vector transferring nutrients from the marine to terrestrial realms. The soils of bird nesting sites are known to host distinct plant communities but the consequences of bird modification for microorganisms are much less clear. Our focus here is testate amoebae: a widely-distributed group of protists with significant roles in many aspects of ecosystem functioning. We compared the testate amoeba assemblages of a site on Spitsbergen (Svalbard archipelago) affected by nesting birds, with nearby control sites. We found differences in assemblage between sites, typified by reduced relative abundance of *Phryganella acropodia* and *Centropyxis aerophila* in bird-modified soils. These changes may reflect a reduced availability of fungal food sources. We found no evidence for differences in assemblage diversity or test concentration between bird-modified and control soils. Our dataset is small but results provide the first evidence for the potential effect of bird modification of soils on testate amoebae in the Arctic. Results show only limited similarity to experimental studies of nutrient addition, implying that response mechanisms may be more complicated than simply additional nutrient supply through faeces.

Keywords: Birds; Testate amoebae; Protists; Protozoa; Svalbard