

# Accepted Manuscript

Potential influence of birds on soil testate amoebae in the Arctic

Yuri A. Mazei, Natalia V. Lebedeva, Anastasia A. Taskaeva, Alexander A. Ivanovsky,  
Viktor A. Chernyshov, Andrey N. Tsyganov, Richard J. Payne



PII: S1873-9652(17)30114-7

DOI: [10.1016/j.polar.2018.03.001](https://doi.org/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.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

**1 Potential influence of birds on soil testate amoebae in the Arctic**

2 Yuri A. Mazei<sup>a,b</sup>, Natalia V. Lebedeva<sup>c,d</sup>, Anastasia A. Taskaeva<sup>e</sup>, Alexander A. Ivanovsky<sup>a</sup>, Viktor A.  
3 Chernyshov<sup>b</sup>, Andrey N. Tsyganov<sup>b</sup>, Richard J. Payne<sup>b,f\*</sup>

4 <sup>a</sup>Lomonosov Moscow State University, Leninskiye Gory, 1, Moscow 119991, Russia.

5 <sup>b</sup>Penza State University, Krasnaya str., 40, 440026 Penza, Russia.

6 <sup>c</sup>Azov Branch, Murmansk Marine Biological Institute, Russian Academy of Science, Vladimirskaia, 17,  
7 183010, Murmansk, Russia.

8 <sup>d</sup>Southern Scientific Centre, Russian Academy of Sciences, Chekhov St. 41, Rostov-on-Don RU-  
9 344006, Russia.

10 <sup>e</sup>Institute of Biology of Komi Scientific Centre of the Ural Branch of the Russian Academy of Sciences,  
11 Kommunisticheskaya, 28, Syktyvkar, Russia

12 <sup>f</sup>University of York, Heslington, York YO10 5DD, United Kingdom.

13 \*corresponding author. E-mail address: richard.payne@york.ac.uk

**14 ABSTRACT**

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

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

Download English Version:

<https://daneshyari.com/en/article/8907811>

Download Persian Version:

<https://daneshyari.com/article/8907811>

[Daneshyari.com](https://daneshyari.com)