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Fungi of the greening Arctic : compositional and functional shifts in response to climatic changes

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Citation

Semenova, T. A. (2016, December 7). *Fungi of the greening Arctic : compositional and functional shifts in response to climatic changes*. Retrieved from <https://hdl.handle.net/1887/44782>

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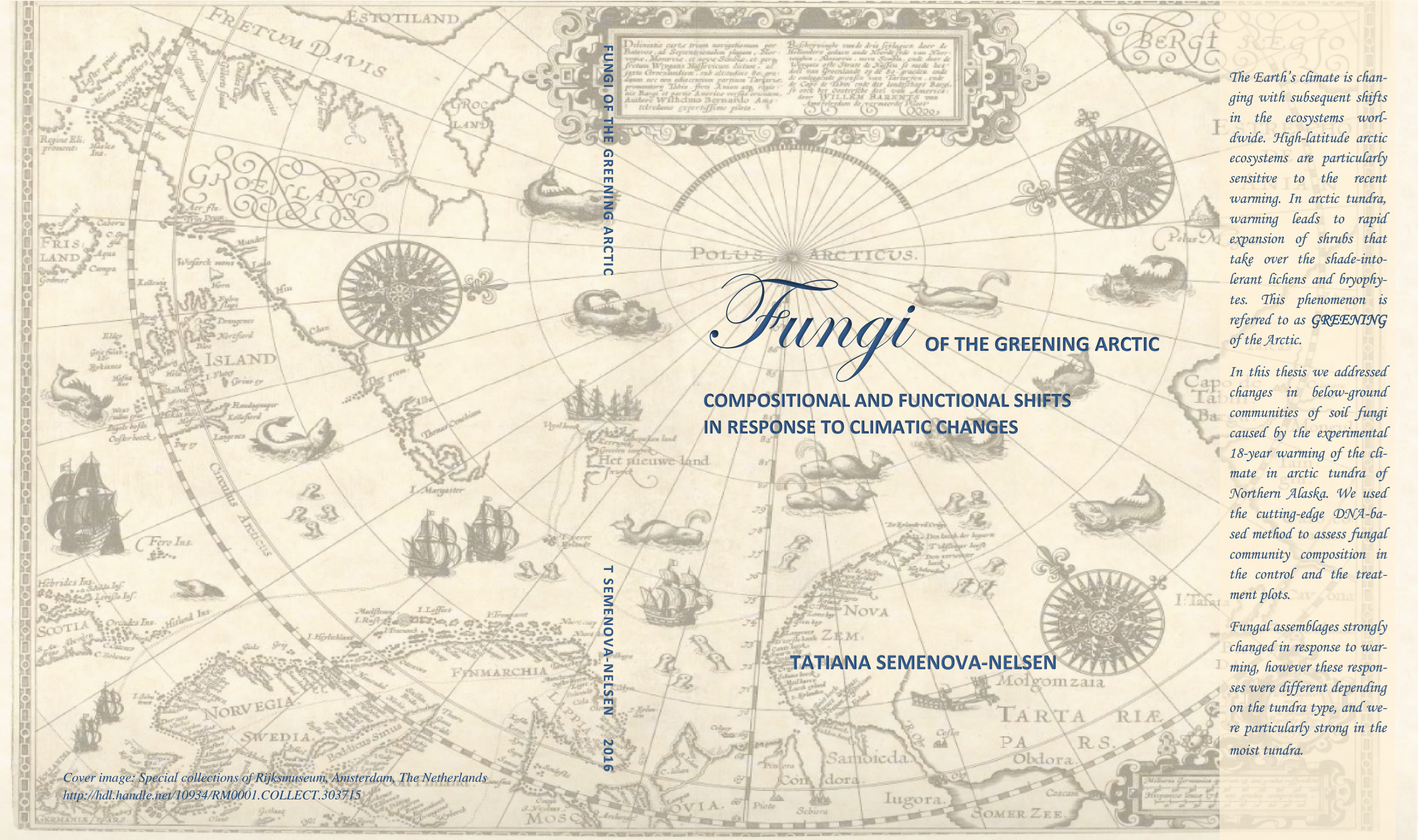


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Title: Fungi of the greening Arctic : compositional and functional shifts in response to climatic changes

Issue Date: 2016-12-07



FUNGI OF THE GREENING ARCTIC

Funghi OF THE GREENING ARCTIC

COMPOSITIONAL AND FUNCTIONAL SHIFTS IN RESPONSE TO CLIMATIC CHANGES

T SEMENOVA-NELSEN 2016

TATIANA SEMENOVA-NELSEN

The Earth's climate is changing with subsequent shifts in the ecosystems worldwide. High-latitude arctic ecosystems are particularly sensitive to the recent warming. In arctic tundra, warming leads to rapid expansion of shrubs that take over the shade-intolerant lichens and bryophytes. This phenomenon is referred to as GREENING of the Arctic.

In this thesis we addressed changes in below-ground communities of soil fungi caused by the experimental 18-year warming of the climate in arctic tundra of Northern Alaska. We used the cutting-edge DNA-based method to assess fungal community composition in the control and the treatment plots.

Fungal assemblages strongly changed in response to warming, however these responses were different depending on the tundra type, and were particularly strong in the moist tundra.