

Local and regional factors correlating with long term population change in *Gentianella campestris*

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Introduction

The field gentian, *Gentianella campestris* is a biannual herb strongly linked to semi-natural grasslands. It has faced a serious decline due to habitat loss and is currently classified as endangered. Previous studies have shed light on the importance of consistent management, but little is yet known about the consequences of the surrounding landscape.

Aim

The aim of the study was to explore if connectivity and local management could explain the rapid decline and local extinctions that the field gentian population in Östergötland, Sweden has experienced since the 1990's.

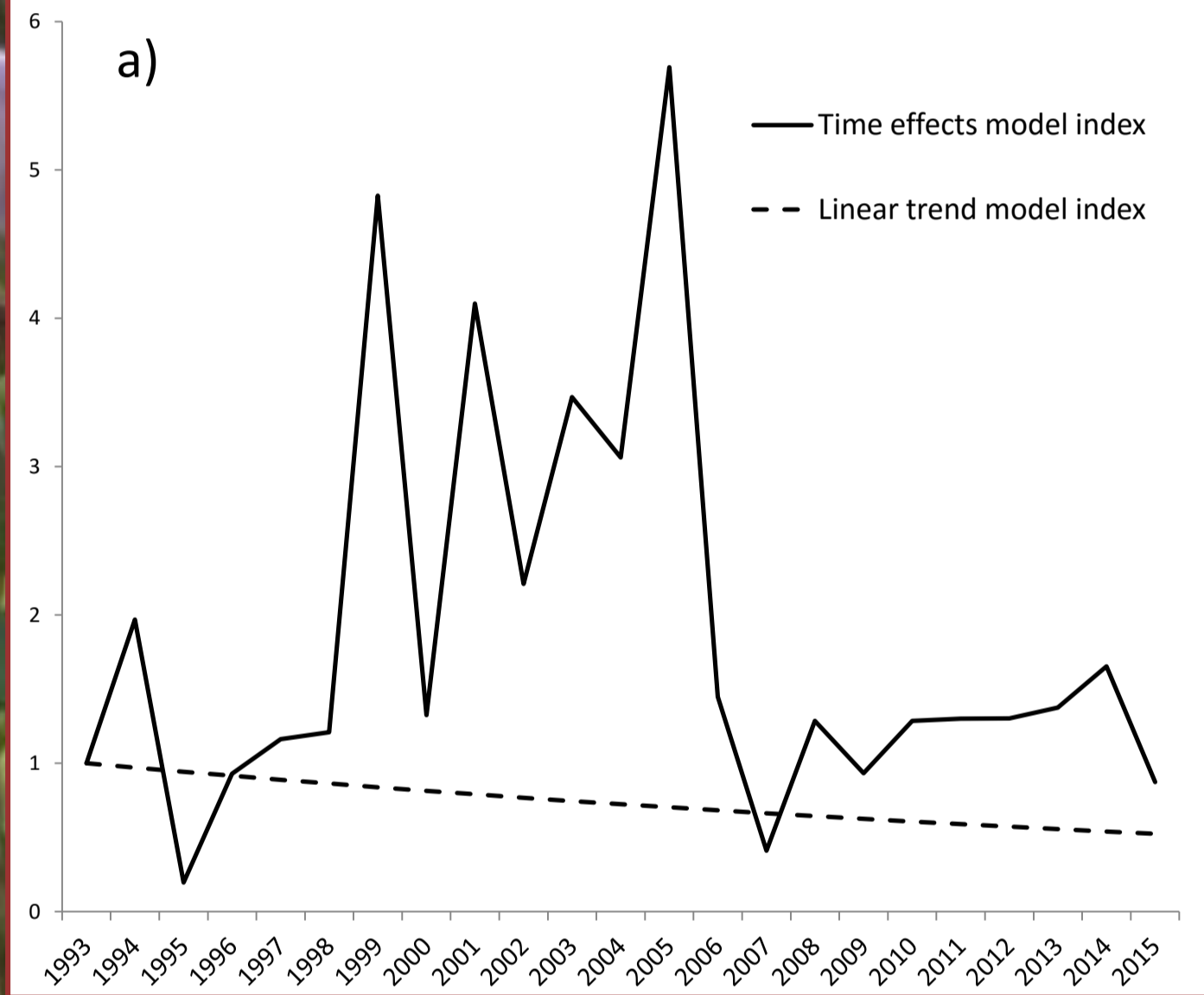
Result

The field gentian population show large between-year fluctuations but has generally decreased during the last 22 years (fig a). The same pattern can be seen in individual localities (fig b).

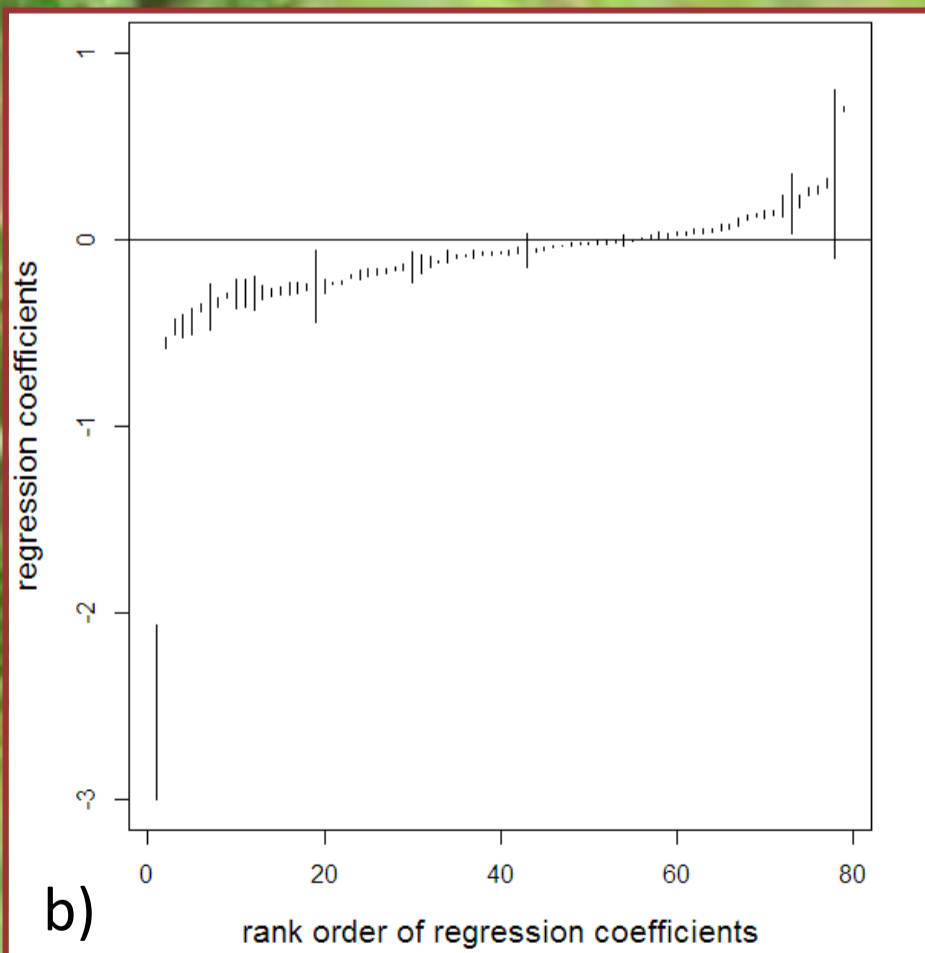
There has been a significant decrease in connectivity for almost all field gentian localities (fig c). The field gentian population increase with increasing connectivity

Conclusion

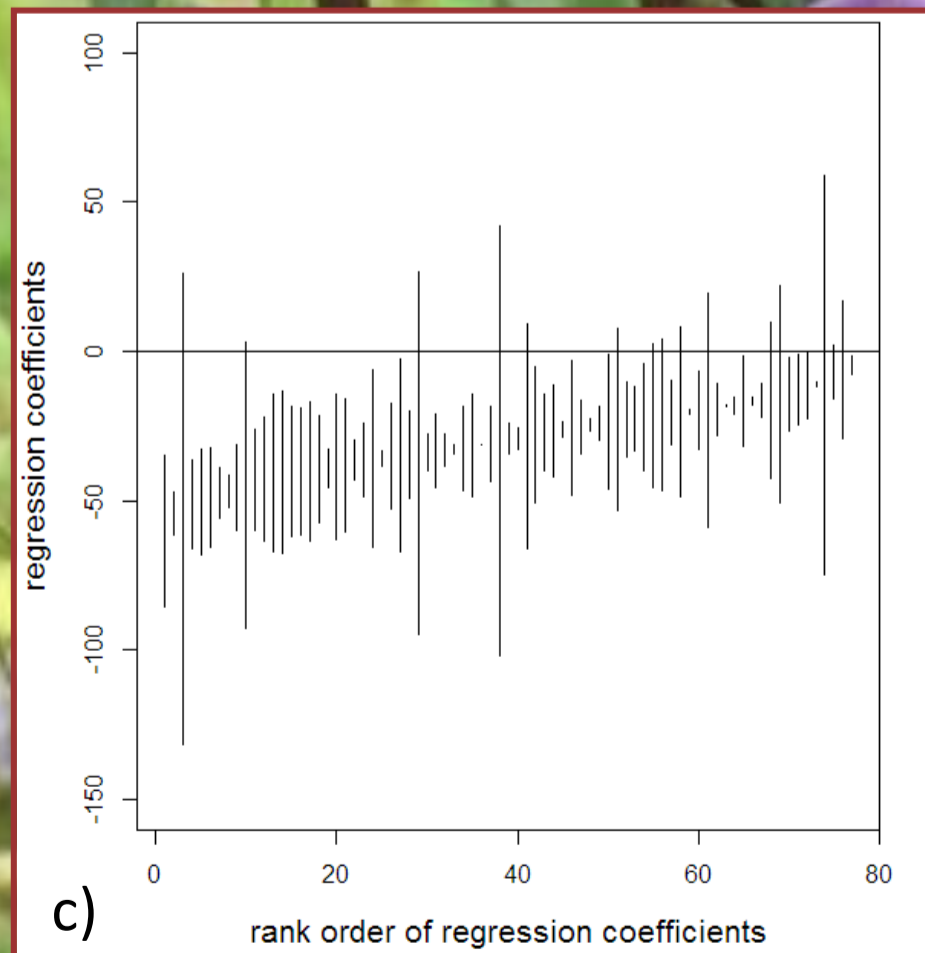
The declining field gentian population can partly be explained by changes in the surrounding landscape which has led to decreased connectivity of semi-natural grasslands.



a) Time effects model index and linear trend model index for field gentian populations in Östergötland, Sweden between the years 1993-2015. Analyzed using TRIM software (N=130).



b) Regression coefficients of the population trend for field gentians in Östergötland, Sweden between the years 1993-2015, with standard errors (represented by the length of each line) for each locality sorted from the lowest estimate to the highest (N=79).



c) Regression coefficients of the connectivity trend based on data from Blockdatabasen in 1999, 2008 and 2015 with standard errors (represented by the length of each line) for each locality sorted from the lowest estimate to the highest ($\alpha = 1500$, N=79).



Contact

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