Title: LEGACY EFFECT OF *LEUCANTHEMUM VULGARE* ON NATIVE SOIL SEEDBANK: AN EXPERIMENTAL APPROACH

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Background:

Restoration of native communities to a pre-invasive state depends on the legacy effect of the invasive present.

Changes in the seed bank may pose significant barriers to site restoration.

The extent of these changes and their implications are not well understood.

Objective:

To examine the legacy effect of *Leucanthemum vulgare* on the soil seed bank in the Kashmir Himalayas.

Methods:

A pothouse experiment was conducted to compare the seed bank in four elevational gradients of sites with different treatments: intact invaded sites (more than 50% coverage by L. vulgare), cleared sites (upper part of L. vulgare removed 5 years ago), and uninvaded sites.

Soil samples were collected from at least 10 sites at each site type and divided into three parts.

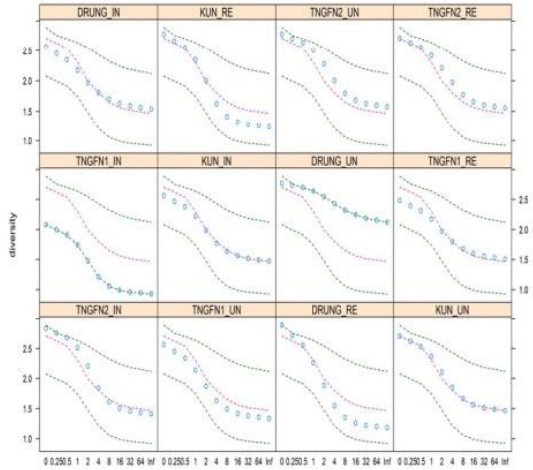
The soil from each site was placed in trays in a randomized fashion in the pothouse, and watered regularly to maintain moist soil conditions.

After 10 weeks, the soil was thoroughly mixed to bring new seeds to the surface.

Results:

The seed bank community composition differed significantly between the three site types. No significant differences were found between different elevational sites.

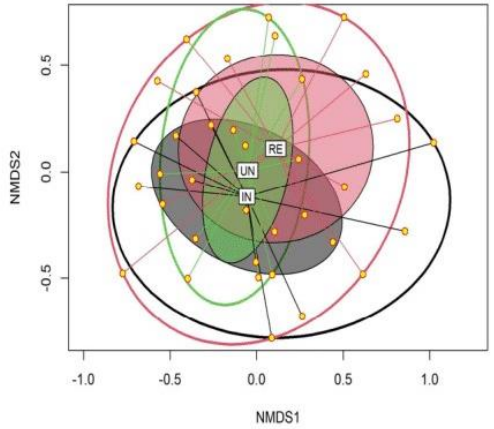
Cleared sites had a seed bank with varying elements that matched invaded and uninvaded sites, indicating a legacy effect of the invasive on the seed bank.



Discussion:

The study provides insights into the legacy effect of invasive species on the soil seed bank. The soil seed bank community composition differed significantly between the three treatments plots with uninvaded plots exhibiting a wide range of species pool among them.

The findings have clear implications for restoration strategies.



Conclusion:

The legacy effect of L. vulgare on the soil seed bank was found to vary across different soils.

Overall, the findings of our study highlight that the soil seed bank of removal treatment plots showed considerable difference from the seed bank of invaded treatments, with clear management implications.

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