

Human induced dwarfing of Himalayan snow lotus, *Saussurea laniceps* (Asteraceae) . (Oral Presentation)

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Introduction

Anthropogenic activities, such as harvesting of wild plants, may lead to evolutionary change in natural populations. Harvesting select individuals in natural plant populations can bring about unforeseen impacts that may negatively affect fitness.

Objectives

To investigate if human harvesting has selected for smaller sized plants in the rare Tibetan Snow Lotus, *Saussurea laniceps*.

Methods

To test for the role of human selection on harvested plants, we paired herbarium studies with field sampling and paired congeneric plant species that have experienced different levels of unconscious human selection.

Results

Saussurea laniceps showed a significant decline in size over time (Fig. 2a, $r^2 = 0.4361$, $p < 0.001$) whereas *S. medusa* showed no significant change in size. Furthermore, we compared the size of flowering plants that grew in heavily harvested areas to those that were protected in Tibetan sacred areas where very little harvesting took place. We found that *S. laniceps* in the heavily harvested area were on average 9 cm smaller than plants found in low harvested areas ($Z = 4.91$, $p < 0.0001$).

Conclusion

With unconscious human selection, when a species possesses a certain trait that is valued by people (e.g., large size), individuals with that trait will be preferentially harvested, and this selection will leave individuals that possess less desirable traits (e.g. small plants).

Keywords: Harvesting, Threatened Plants, Herbarium

Selected References

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