Remove Watermark Now

Background: Reductions of genetic diversity and phenotypic changes in invasive plants are often observed to occur at high elevations. Genetic/phenotypic changes of invasive plants along elevation help to understand mechanisms of the presumed resistance of mountain ecosystems to invasion.

Aims: To assess genetic variability and phenotypic plasticity along an elevation gradient of *Eschscholzia californica* in the Andes, central Chile.

Methods: Eleven microsatellites were used to describe the genetic structure and the allelic diversity individuals, distributed at three elevations and two sites. We assessed the number of flowers per plant, floral biomass, leaf area, number of leaves, vegetative biomass and plant height of plants at each elevation.

Results: Genetic diversity as genetic structure did not decrease with elevations. Plant height and flower numbers decreased while leaf number and vegetative biomass increased with elevation. The ratio of the number of flowers to vegetative biomass, decreased significantly with elevation.

Conclusions: Strong genetic differences among elevations and similar genetic diversity along elevation do not suggest dispersal limitation to higher elevation. Reduction of reproductive and vegetative traits concomitantly with an increase of the reproductive cost suggests reproductive stress with increasing elevation, reducing the invasiveness of this species to higher elevation.

iSkysoft