First analysis of invasive plant impacts worldwide

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This week the scientific journal *Ecology Letters* has published a synthesis of the ecological impacts of invasive plants worldwide. This global analysis has been based on more than one thousand studies that in total describe the impacts of 135 invasive plant species. The lead author, Dr. Montserrat Vilà, a professor at the Spanish Higher Research Council (CSIC) adds: "This assessment would have been impossible to achieve ten years ago, because the evidence was anecdotal, it has only been in the last decade that well designed field studies have been conducted".

Twenty-four impact types have been considered. Alien plants can for example affect the activity of animal species feeding on them and even the microorganisms in the soil where they growth. The most extreme impacts affect the resident vegetation. In invaded sites, the abundance of native plants is reduced more than 40% and species diversity decrease more than 50%. These changes can have tremendous implications for the functioning of ecosystems such as alien nitrogen fixers doubling soil N pools. This study reveals that by the time changes in nutrient cycling are detected, major impacts on the performance of plant populations are likely to have already occurred.

It is important to notice that even within an impact type, the magnitude and even the direction of the effect is not always the same, that is, an alien species can decrease the growth of a particular native species but increase the growth of another. These differences might be due to differences in the traits of the invasive species; but they might also depend on how dominant they are, for how long they have been present

in the invaded ecosystem, and even on the invaded ecosystem type. All these are aspects require more research and highlight that the impact of invasions is highly context-dependent.

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