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Reviews

How well do we understand the impacts of alien species on ecosystem services? A pan-European, cross-taxa assessment

Montserrat Vilà^{1*}, Corina Basnou², Petr Pyšek³, Melanie Josefsson⁴, Piero Genovesi⁵, Stephan Gollasch⁶, Wolfgang Nentwig⁷, Sergej Olenin⁸, Alain Roques⁹, David Roy¹⁰, Philip E Hulme¹¹, and DAISIE partners. ¹²

Recent comprehensive data provided through the DAISIE project (www.europe-aliens.org) have facilitated the development of the first pan-European assessment of the impacts of alien plants, vertebrates, and invertebrates – in terrestrial, freshwater, and marine environments – on ecosystem services. There are 1094 species with documented ecological impacts and 1347 with economic impacts. The two taxonomic groups with the most species causing impacts are terrestrial invertebrates and terrestrial plants. The North Sea is the maritime region that suffers the most impacts. Across taxa and regions, ecological and economic impacts are highly correlated. Terrestrial invertebrates create greater economic impacts than ecological impacts, while the reverse is true for terrestrial plants. Alien species from all taxonomic groups affect “supporting”, “provisioning”, “regulating”, and “cultural” services and interfere with human well-being. Terrestrial vertebrates are responsible for the greatest range of impacts, and these are widely distributed across Europe. Here, we present a review of the financial costs, as the first step toward calculating an estimate of the economic consequences of alien species in Europe.

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¹² List of DAISIE (Delivering Alien Invasive Species Inventories for Europe) project partners in [WebPanel 1](#).

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