

Cryptic invasions by ecological engineers conceal profound changes in nature

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A new study reveals that the salt marsh plant *Spartina alterniflora*, which grows on more than 9,000 km of the Atlantic coastline of South America, is not native to the area and was in fact introduced 200 years ago.

In these 2 centuries, immense shifts that would have been described at the time as catastrophic alterations, had scientists been present to observe them, have occurred in ecosystem productivity, biodiversity, and [species interactions](#).

"Even our most trusted perception of nature is not infallible—in fact it can easily be completely illusory, a condition we call Ecological Mirage, or Espejismo Ecológico in Spanish," said Dr. Alejandro Bortolus, leader author of the *Diversity and Distributions* study. "Finding isolated historical events where [species](#) were introduced may reveal unexpected radical shifts in the evolution of ecosystems as they have progressed to their current state."

"What this discovery tells us is that, without question, other landscape- and seascape-altering species were introduced by humans around the world centuries ago, but are now erroneously interpreted as 'native' species," added Dr. James Carlton, co-author of the study. "These species are then studied, often confidently, from the point of view of how [natural ecosystems](#) evolved and are structured, and how animals and plants interact with each other in a pristine world, untouched and unsullied by the 'hand of man,' when in fact quite the reverse is the

case."

More information: Bortolus, A., Carlton, J. T., Schwindt, E. (2015), Reimagining South American coasts: unveiling the hidden invasion history of an iconic ecological engineer. *Diversity and Distributions*. [DOI: 10.1111/ddi.12377](https://doi.org/10.1111/ddi.12377)

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