Unique insight into Chile's coastal ecosystem before and after 2010 earthquake

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Natural disasters like earthquakes and tsunamis are expected to have substantial ecological effects, but if researchers don't have enough data about the environment before the disaster strikes, as is usually the case, it is difficult to quantify these repercussions.

The 2010 earthquake and subsequent tsunami in Chile is a rare exception to this trend, and researchers were able to conduct an unprecedented report of its ecological implications based on data collected on coastal ecosystems shortly before and after the event. The study is published on May 2 in the open access journal *PLoS ONE*.

The researchers, led by Eduardo Jaramillo of Universidad Austral de Chile, found that Chile's sandy beaches experienced significant and lasting changes due to the earthquake and tsunami. These ecosystem changes depended strongly on the direction and amount of land level change, the type of shoreline and the degree of human alteration of the coast. The most unexpected results came from uplifted sandy beaches where intertidal species which had been excluded by the presence of coastal armoring before the earthquake, rapidly recolonized the new habitats.

The data they collected also provides some insight into the ecological effects of human-introduced alterations to the coastal landscape, which could help inform related projects in the future.

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