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Perpetuating the "ecocide": the invasion of Rapa Nui (Easter Island, South Pacific) by recently introduced species

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Rapa Nui (Easter Island), one of the most remote inhabited islands on Earth, is famous for its ancient Polynesian civilisation collapse and past forest destruction, sometimes designated as an "ecocide". Vegetation degradation was aggravated by extensive sheep farming between 1870 and 1952, fires, and more recently by overgrazing by cattle and horses. As a result, the native flora and fauna of this small volcanic island (166 km²) is extremely depauperate with no surviving native bird, and ca. 46 vascular native plants left. By comparison, the introduced biota is composed of more than 370 alien plants including ca. 180 naturalized species, and five established alien birds. During a field-survey conducted in 2008, we identified a total of 36 major invasive plants and weeds causing ecological and/or archaeological impacts, and 38 potentially invasive plants or "sleeper weeds". Many of these plant invaders were recently (i.e. during the last 30 years) and intentionally introduced to the island for reforestation (e.g. the thorny tree *Robinia pseudoacacia*), soil erosion control (e.g. the Pampas grass *Cortaderia selloana*), fodder (e.g. the molasses grass *Melinis minutiflora* and the leguminous shrub *Crotalaria grahamiana*), or ornamentals (e.g. the thorny shrub *Lantana camara*); others were accidentally introduced (e.g. the milkweed *Asclepias curassavica* and the spiny thistle *Cirsium vulgare*). With the recent burst of its tourism industry, and in the absence of a strong biosecurity system, Rapa Nui is experiencing an unprecedented rate of biological invasions by well-known Pacific-wide aggressive plants and animals (e.g. the Argentine ant *Linepithema humile*). A strategic action and management plan is urgently needed for Rapa Nui, to protect the surviving native biota and to try to restore or rehabilitate the last stands of native vegetation in this World Heritage Cultural Site. A major component of this plan should address biological invasions, emphasizing prevention, early detection and eradication.

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