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A model for the ecological collapse of easter island caused by economic price fixing

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Easter Island, called Rapa Nui by its inhabitants, is an extremely isolated population, ideally suited for study as an ecosystem in isolation. Archeological evidence suggests that an initial group of around 50 people arrived on the island around 400 AD, at which time the island had an abundant supply of large palm trees supporting a vibrant ecosystem. The population grew in size and sophistication, creating the enormous and artistically complex statues for which the island is famous. By the 1700s, when the island was visited by explorers, the island was devoid of trees and the population seemed too small and poorly equipped to have built the statues. There have been many proposed 'causes' for the boom and crash of this population, including ecocide, genocide, and invasive species. In this presentation, we review some of the previous models and propose an ecological economics model showing that if the price of trees were effectively fixed, then the supply and demand interactions could have caused a boom in population, complete exhaustion of the trees, and subsequent collapse of the population.

Biography

Wesley Basener is a student researcher at the Piedmont Valley Community College. His areas of expertise include population modeling, population genetics, topology, data mining, and dynamical systems.

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