

# The Simple Economics of Easter Island: A Ricardo-Malthus Model of Renewable Resource Use

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# Introduction

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Considering its relatively small size and remote location, Easter Island (also called Rapa Nui) is a remarkably well-known and well-studied place. The island is in the Pacific Ocean about 3700 km. (2300 mi.) off the coast of Chile.

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For the past two centuries, Easter Island has been regarded as a major archaeological and anthropological mystery, and has figured prominently in numerous popular books and television specials, and at least one feature film.

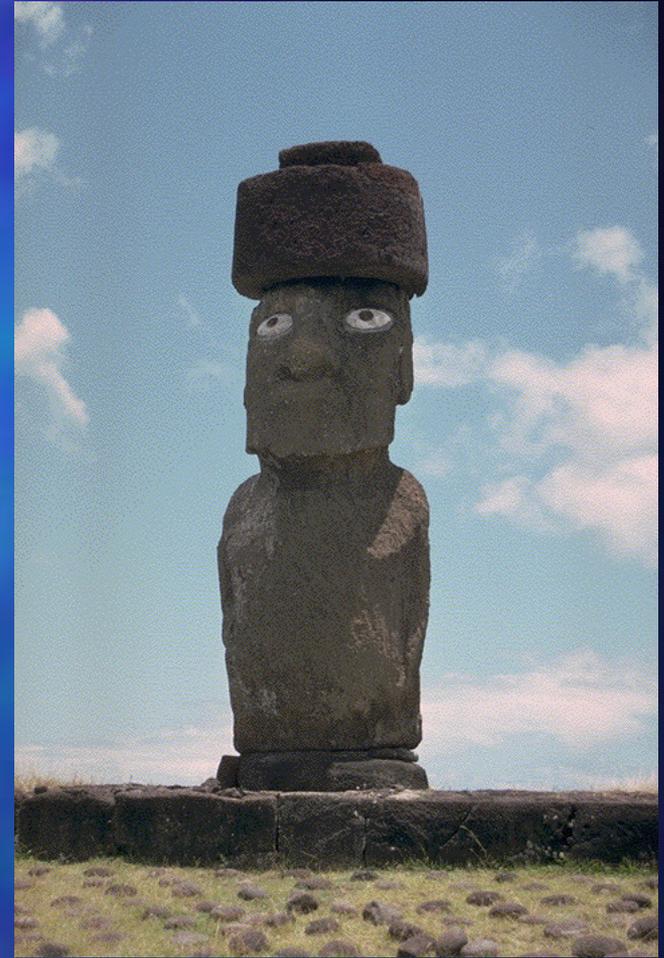
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- One of the striking features of Easter Island is that the Polynesian civilization in place at the time of first European discovery in 1722 is now known to have been much poorer and much less populous than it had been a few hundred years earlier.

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- The archaeological record suggests that Easter Island suffered a sharp decline after perhaps a thousand years of apparent peace, prosperity and continuity in cultural tradition.

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- The population of Easter Island rose well above its long run sustainable level and the subsequent fall in population occurred simultaneously with disintegration of the existing social order and a rise in violent internecine conflict.

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- Noted archaeologist P.V. Kirch suggests that “Easter Island is a story of a society which - temporarily but brilliantly surpassing its limits - crashed devastatingly”.

- The most visible evidence of Easter island's more prosperous past is the presence of enormous statues (called "moai"), carved from volcanic stone. Many of these statues rested on large ceremonial platforms at various locations on the island.



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- These platforms are themselves impressive, but most of the attention has been attracted by the moai. The largest "movable" statues weigh more than 80 tons.

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- The largest statue of all remains unfinished and in the quarry where it was carved, and weighs about 270 tons.

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- The puzzling feature of the statues and platforms is that the late stone age Polynesian culture found on Easter Island in 1722 seemed incapable of having created such monumental architecture.

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- First, the statues were moved substantial distances from the lone quarry on the island to their final destinations, but the population, estimated to have been about 3,000 in 1722, seemed too small to have provided enough labor to move the statues.

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- Secondly, the culture seemed too poor to have supported a large artisan class devoted to carving the statues. Certainly no such group existed in the 18th century.

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- Third, local residents had no knowledge or oral history relating to how such statues might be moved. The dominant legend was that the statues walked to the platforms themselves under the influence of some spiritual power.

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- Finally, the construction and movement of statues almost certainly would have required the use of levers, rollers, rope, and wooden sleds but the island at contact was devoid of any trees suitable for construction of such tools.

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- Our paper develops a simple economic model of island (or local area development) where humans are the predators and the environment is the prey. We use this model to provide a plausible explanation for the rise and fall of the Easter Island civilization

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- , and show how the island's boom and bust development pattern could have arisen from the interaction of overpopulation and resource degradation.

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- Boom and bust cycles are not inevitable though and we link their existence to resource growth rates, technology, and demographic variables. We also suggest that other early civilizations (the Maya, Anasazi, and Mesopotamian) may have followed a similar boom and bust pattern.

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- Other more current applications may include some countries in Sub-Saharan Africa (Rwanda for eg. ) and we present some tentative implications for resource management in the modern world.

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- In any event, I hope you have a chance to read on. Comments are more than welcome.