

iFAST: The International Forum on Advanced Environmental Sciences and Technology

A series of distinguished seminars by eminent scientists

7 p.m. CST; 8 p.m. EST; 1 a.m. GMT (Dec. 3); 9 a.m. Beijing (Dec. 3)

Wednesday, Dec. 2, 2020



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Peter Vitousek has been on the faculty at Stanford University since 1984 and is the Clifford G. Morrison Professor of Population and Resource Studies. His research interests include evaluating the global cycles of nitrogen and phosphorus and how they are altered by human activity; determining the effects of invasive species on the workings of whole ecosystems; and understanding how the interaction of land and culture contributed to the sustainability of Pacific Island societies before European contact. He is a Fellow of the National Academy of Sciences and the American Academy of Arts and Sciences and was awarded the 2010 Japan Prize. He is co-director of the First Nations Futures Institute and of the Hawai'i Ecosystems Project.

Pacific Islands as Model Systems for Understanding Ecosystems and Human-Environment Interaction

Oceanic islands have long been models for understanding many aspects of environmental science, including the patterns in nutrient availability and cycling, and their controls. In this talk, I build upon the biophysical features of islands to show that Polynesian societies offer an extraordinary opportunity to understand how human societies and islands interact in the context of integrated social/environmental systems. The Polynesian people journeyed across much of the Pacific on deliberate and quite recent voyages of discovery and colonization, between ~800 and >2000 years ago. In their voyaging, Polynesians discovered many previously uninhabited islands in the great Pacific triangle bounded by Hawai'i in the North, Rapa Nui (Easter Island) in the Southeast and Aotearoa (New Zealand) in the Southwest. The islands they discovered included large versus small islands, islands with fertile versus infertile soils, and islands derived from oceanic and continental volcanism, from coral and from the drifting remnants of continents. Specific examples include coral atolls like the Tuamotus, poor in terrestrial but rich in marine resources; diverse volcanic high islands like Hawai'i, with some fertile soils and well-watered valleys, small and infertile volcanic islands like Rapa Nui (1% the size of Hawai'i); and the large, highly seasonal subcontinental landscape of Aotearoa. The common origin of Polynesian societies, together with the unusually well-defined features of the islands they discovered, makes Polynesian islands and societies wonderful models for understanding social/environmental systems.



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