Study shows the importance of coastal water quality to recreational beach users

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Coasts around the world are threatened by land-based pollutants, including sewage, which affect water quality, coastal habitats and human experiences. To capture the value people place on the coastal

environment, UH ecological economist Kirsten L.L. Oleson and former MS student Marcus Peng recently published a study in the journal Ecological Economics. Titled "Beach Recreationalists' Willingness to Pay and Economic Implications of Coastal Water Quality Problems in Hawai‘i," the study found that improvements in coastal environmental conditions could result in large benefits for beach users on O‘ahu, in some cases valued in the hundreds of millions of dollars. This could justify increased spending on management and restoration.

"The economic value of water quality isn't yet well understood in Hawai'i," says study lead author Marcus Peng, a former Master of Science student in the Department of Natural Resources and Environmental Management in the College of Tropical Agriculture and Human Resources who is now pursuing his PhD in Economics at UH Mānoa. "Quantifying the economic value of coastal water quality can help to inform policy decisions that impact the coast and help justify expenditures in water-quality improvements."

Coastal water is a critical habitat for many marine species, and it is the basis for many economic concerns important to society and local economies, including tourism, coastal recreation, fisheries and property values. The article argues that water-quality degradation presents real and serious costs to the environment and human welfare, and in destinations important for beach tourism, like Hawai'i, it could threaten an industry contributing trillions of dollars to the global GDP.

In a survey administered to 263 beach users across beaches on O‘ahu, Peng and Oleson surveyed participants' willingness to pay (WTP) for environmental attributes at different levels of quality. They asked about reducing the number of days a year when the bacterial count in the water exceeds safety standards, and increasing water visibility distance, coral reef cover and the number of different fish species. While beach users cared about all of these, their strongest preferences, based on the amount

they were willing to pay, were for water clarity and bacterial quality improvements.

In light of recent and repeated water-quality warnings and beach closures, echoing the serious and prolonged sewage spill in 2006, it is important that decision-makers recognize the significant value of the coastline and the serious harm to the economy that takes place when natural resources are poorly managed or neglected. This is especially true in a state heavily reliant on its natural resources for recreation and tourism. The authors suggest that further studies such as this should attempt to ascertain the economic costs of human impacts on the coastal zone, and these studies should then be used to set management priorities and allocate budgets. Dr. Oleson emphasized, "Reducing human impact on our environment is an investment that benefits society and supports and sustains our quality of life."

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