ABSTRACT OF DISSERTATION

Collecting and Using Economic Information to Guide the Management of Coastal Recreational Resources in California

by

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Coastal tourism and recreation is the largest sector of California’s ocean and coastal economy and generates large economic impacts that can be measured in the market economy. Coastal recreation also creates large non-market values. Most of the research on non-market values of coastal recreation in California has focused on beach going. There are other niche recreational activities such as surfing, diving, and paddle boarding that have small populations of highly avid coastal users that are difficult to survey. These groups make choices regarding their recreation based on different beach attributes and have distinct behavior patterns and different economic impacts and values associated with their recreational choices. The inability to survey these users limits our understanding of how coastal management decisions affect them and may in result decisions
that negatively impact public welfare. The lack of knowledge about these users has also led to coast management agencies (e.g., California Coastal Commission) to consistently undervalue the impact of decisions on coastal recreation both when making project-specific decisions and when setting mitigation fees. Internet-based survey instruments provide a new and effective way to capture these users. However, Internet-based surveys have advantages and disadvantages that are different than more traditional survey modes.

This dissertation a) uses Internet-based surveys to provide one of the only empirical valuations of surfing, b) develops, tests, and applies an Internet-based survey approach to quantify the values of this niche coastal use, and c) examines the recent history of beach mitigation policy in California to show how coastal recreational and ecosystem values could be better incorporated into the determination of mitigation fees. First, I use an opt-in Internet-based survey to estimate the non-market value of surfing at the Trestles surfing area. I find an average consumer surplus of surfing at Trestles to be $138 per person per visit, which is an order of magnitude higher than values used for past decision making. Second, I compare the use of an opt-in Internet-based survey instrument with an on-site intercept survey to measure the demographics, recreational behavior and consumer surplus of surfers at Trestles. Survey mode is shown to affect the demographic and visitation attributes but consumer surplus values for surfing are similar, regardless of the method used.
Third, I examine the use of non-market values by the California Coastal Commission to mitigate the adverse impacts to beach ecosystem services from the permitting of shoreline protection devices. Shoreline armoring on eroding beaches causes the beach to narrow over time, resulting in the loss of beach ecosystem services, including non-market recreation values. Even when empirically derived consumer surplus values are available, decision makers often do not consistently or rigorously incorporate economic values into project analysis or to establish mitigation fees. I develop a conceptual model to consider the total economic value of beach ecosystem services and compare five case studies to show that the Coastal Commission has used inconsistent methods to estimate the non-market values of lost beach ecosystem services. I recommend improvements on existing methods to more accurately and consistently estimate lost recreational values. A framework is provided to ensure that all sandy beach ecosystem services are considered and make explicit those values that are not being considered.