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Monthly condensed analyses of crucial real estate and economic issues offered by the UCLA Anderson Forecast and UCLA Ziman Center for Real Estate. Here, Ryan Vaughn, Researcher for UCLA Ziman Center for Real Estate, discusses how storm water runoff mitigation increases beach attendance.

Pollution Controls Boost Beach Attendance

Study Shows a Cleaner Santa Monica Bay Attracts up to 40% More People

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The bulk of research on the value of improvements to environmental amenities ignores the one factor that should be of most concern: how those improvements impact the public use of those amenities. One of Southern California's most valuable amenities is its beaches, yet surprisingly few studies have shown that improving the environmental quality of a beach actually increases beach going. This study does, and the results are dramatic.

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There are multiple potential economic and public health consequences of dirty beaches. It is clear that increased attendance could increase tourism revenue. In California, proximity to beaches has a strong positive impact on property values, and it is no great assumption that this value is due to the desirability of those beaches. If a beach is no longer desirable, local real estate could suffer. Finally, beach goers have an increased risk of illness when swimming in contaminated runoff water. It is estimated that 80% of beach closures in California are due to storm drains directing contaminated runoff across the beach and into the surf zone. Clearly improvements to storm drains could have large and wide ranging impacts.

The long-term solution is to control pollution at its source so that it never reaches the storm drain system. Until these measures can be implemented, coastal communities can employ another strategy: The construction of storm-drain diversions, which keep urban runoff away from the mouth of the storm drain system and redirect it into the sanitary sewer system, where the contaminated runoff receives treatment at the sewage treatment plant before being discharged into the ocean.

A consortium of researchers sought to provide evidence that improvements to the quality of coastal beaches, such as storm drain diversions, have a measurable effect on attendance at those same beaches.

If the quality of the beach-going experience improves sufficiently, then the value of a day at the beach will surpass that of any alternative activity for some potential beach goers. And if beach goers value cleaner beaches, all else equal, beach attendance will increase more at beaches with environmental improvements than at other comparable beaches.

The study site was Santa Monica Bay from the years 1996 until 2006, an area consisting of 50 miles of coastline. Data routinely collected by a variety of agencies – including data on daily beach attendance, environmental conditions, and other variables – analyzed beach-going trends. The city of Santa Monica began to divert storm-water flows from several drains in the early to mid-1990s, making the diversions fully operational by the late 1990s and early 2000s. Thus the study period and location were ideal for analyzing the impact of a local environmental improvement on attendance.

The Bay's sandy beaches are heavily used as a recreational resource by tourists, as well as residents of Los Angeles and Ventura County. Because data for several sites over a 10-year period is available, beach attendance can be examined at sites with and without a policy intervention (e.g. storm-drain diversion). It is important to capture attendance both before and after the intervention in order to isolate its effect from other confounding factors, such as local population growth. In order to further isolate the impact of storm drain diversions on beach attendance, the study controlled for other factors including weather, and water quality after rainstorms.

The results of the study show a dramatic increase in beach attendance following storm-drain diversion. Even a cursory visual analysis of the data reveals that many beaches with at least one storm-drain diversion display higher attendance records within one year of the installation. The percentage increase, measured at different beaches in Santa Monica Bay, ranged from approximately 5% at Dockweiler North beach to more than 40% at Avenue C beach.

Coastal professionals are interested in estimating how society's welfare would change in response to various policy actions – how much will it decrease if a natural resource was lost or increase if it was better managed or its quality was improved or degraded. The primary objective of this study was to examine whether a statistically significant link exists between these policy actions and human behavior.

A better understanding of this link could lead to more informed decision-making and management of marine and coastal areas. Although this research focuses on marine and coastal resources, the lessons learned can have broader applications.