

NOAA economic study shows marine debris costs California residents millions of dollars

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Marine debris found on Seal Beach, Orange County, California. Credit: NOAA

Southern California residents lose millions of dollars each year avoiding littered, local beaches in favor of choosing cleaner beaches that are farther away and may cost more to reach, according to a new NOAA-funded Marine Debris Program economics study.

Reducing marine debris even by 25 percent at beaches in and near California's Orange County could save residents roughly \$32 million during three months in the summer by not having to travel longer distances to other beaches.

The study, led by Cambridge, Massachusetts-based Industrial Economics Inc., known as IEc, is the first of its kind to look at how marine debris influences decisions to go to the [beach](#) and what it may cost.

The study showed that having no marine debris on the beach and good water quality were the two most important factors in deciding which beach to go to. Given the enormous popularity of beach recreation throughout the United States, the magnitude of recreational economic losses associated with marine debris has the potential to be substantial.

In July and August 2013, IEc assessed 31 popular Southern California public beaches from San Onofre Beach to Zuma Beach, collecting data on beach characteristics, including amenities such as bathrooms and parking, the amount of marine debris, and whether or not the beach was regularly cleaned. The researchers found that the amount and type of marine debris varied from beach to beach, although the majority of the debris was plastic.



Beach characteristics ranked by importance. Credit: NOAA

NOAA and IEC also surveyed Orange County residents on their recreation habits, including how many day trips they took to the beach from June - August 2013, where they went, how much it cost them, and which beach characteristics are important to them.

"This study shows that beachgoers are worried about marine debris and will seek out cleaner beaches for recreation at a cost," said Nancy Wallace, NOAA Marine Debris Program director. "Reducing or eliminating marine debris from our beaches is critical, because littered shorelines are costing people more than we anticipated. We can use these kinds of data to prioritize beaches for debris prevention and removal activities."

REDUCING DEBRIS ON BEACHES

Beachgoers may actively avoid using certain beaches because those areas are littered with marine debris. By choosing to avoid beaches with debris, individuals will likely spend more time and money to find cleaner beaches. At 31 beaches in Southern California, NOAA estimated how much money Orange County residents could potentially save by reducing marine debris.



Communities save money by reducing litter on beaches. Credit: NOAA.

IEc used a common travel cost model that estimates the value of beach recreation to the public and how marine debris may influence that value. Some of the travel costs considered include gas money, parking fees, and value of time spent traveling to and from the beach. Using the public survey information combined with collected beach data, IEc estimated how much Orange County residents would potentially benefit, including how often they visit beaches and how much they would save in travel costs, over a summer season by reducing marine debris at some or all of the 31 beaches. For example:

- Implementing an urban litter program that reduces marine debris by 75 percent from the beaches near the outflow of the Los Angeles River would benefit users of those beaches \$5 per trip and increase visitation by 43 percent.
- Reducing marine debris by 100 percent at all 31 beaches would save \$65 per person, or \$148 million for all 2.28 million Orange County adults.
- Reducing marine debris by 25 percent at all 31 beaches would save \$14 per person, or \$32 million for all 2.28 million Orange County adults.
- Eliminating all marine debris from the five beaches with the highest levels would save \$28 per person, or \$63 million for all 2.28 million Orange County adults.

The study is focused on Orange County because of the number and variety of beaches, their importance to permanent residents, ease of access, and likelihood that [marine debris](#) would be present. Researchers believe that, given the results, the study could be modified for assessing similar coastal communities in the United States.

Provided by NOAA Headquarters

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