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Ecosystem response to regulatory and management actions: The southern California experience in long-term monitoring

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ABSTRACT

Billions of dollars have been invested over the past 35 years in reducing pollutant emissions to coastal environments. Evaluation of the effectiveness of this investment is hampered by the lack of long-term consistent data. A rare opportunity exists in southern California to evaluate the effectiveness of management actions by analyzing long-term monitoring of effluent, sediment, benthos, and fish and comparing this trend data to periodic regional surveys of environmental condition. In this paper, we ask the question “have improvements in effluent quality in response to environmental regulation translated into improvements in the receiving environment?” Results indicate that management actions directed at reducing mass emissions from wastewater treatment plants (POTWs) have resulted in substantial improvement in aquatic communities. However, the magnitude and timing of response varies by indicator suggesting that use of multiple assessment endpoints is necessary to adequately interpret trends. Reductions in the effect of POTW effluent have allowed managers to shift resources to address other contaminant sources such as stormwater and resuspension of legacy pollutants.

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