

UCSB Bren School of Environmental Science and Management

Group Project Title:

Vessel Speed Reduction, Air Pollution, and Whale Strike Tradeoffs in the Santa Barbara Channel Region

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Abstract:

The economic and ecological values of the Santa Barbara Channel (channel) are threatened by two persisting environmental problems, whale strikes and air pollution. Regional stakeholders have spent years addressing the issue of whale strikes - collisions between container ships and whales - as the channel is an important migratory pathway and feeding ground for endangered blue, fin and humpback whales. The channel is also a high-traffic route used by the commercial shipping industry. Air pollution emissions from container ships degrade onshore air quality and make it difficult for Santa Barbara County to meet air quality standards meant to protect human health. To date, neither existing legislation nor voluntary measures have mitigated these two problems. Federal and County resource managers are considering incentive-based, non-regulatory solutions. One such solution is vessel speed reduction (VSR), or the intentional slowing of ships, as they transit through the channel. Slower ship speeds yield benefits for whale populations and air quality, thus VSR can simultaneously mitigate these two seemingly distinct problems. The purpose of this project was to identify and assess funding sources that can sustain a long-term, voluntary, and incentive-based VSR program. To meet this objective, we estimated the expected benefits of VSR by conducting three different valuations including: (1) improved human health, (2) increased whale conservation, and (3) existing market solutions. The results of our analyses suggest that VSR is a cost-effective and comprehensive mechanism for mitigating shipping industry externalities. Our results could be used to support future implementation of a VSR program in the channel, and inform other regions facing similar challenges.