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Protecting Blue Whales and Blue Skies

Report on the 2014 Vessel Speed Reduction Incentive Trial in the Santa Barbara Channel

In 2014, the Channel Islands National Marine Sanctuary, the Santa Barbara County Air Pollution Control District, and the Environmental Defense Center launched a trial incentive program to slow ships down in the Santa Barbara Channel to reduce air pollution and protect endangered whales. The trial was successfully completed November 30, 2014.

Highlights

- Seven global shipping companies participated
- Slowed 27 cargo ship transits to 12 knots or less from July through November for \$2500 per trip incentive
- 50 percent reduction from baseline emissions:
 - 16 tons of ozone-forming nitrogen oxides (NO_x)
 - 500 metric tons of regional greenhouse gases
- Ship strike on a whale up to 50 percent less likely to be fatal at speeds below 12 knots
- Most transits occurred July-October; benefits during peak ozone season and peak whale season
- Unique application of speed reduction in a non-port program



Issue

Each year, thousands of large container ships going to and from the Ports of Los Angeles and Long Beach travel in designated shipping lanes through the Santa Barbara Channel.

Air emissions

In Ventura and Santa Barbara counties, these vessels are a significant source of:

- ozone-forming nitrogen oxides
- sulfur dioxide
- greenhouse gases
- diesel particulate matter
- other toxic air pollutants hazardous to human health

Fatal Ship Strikes

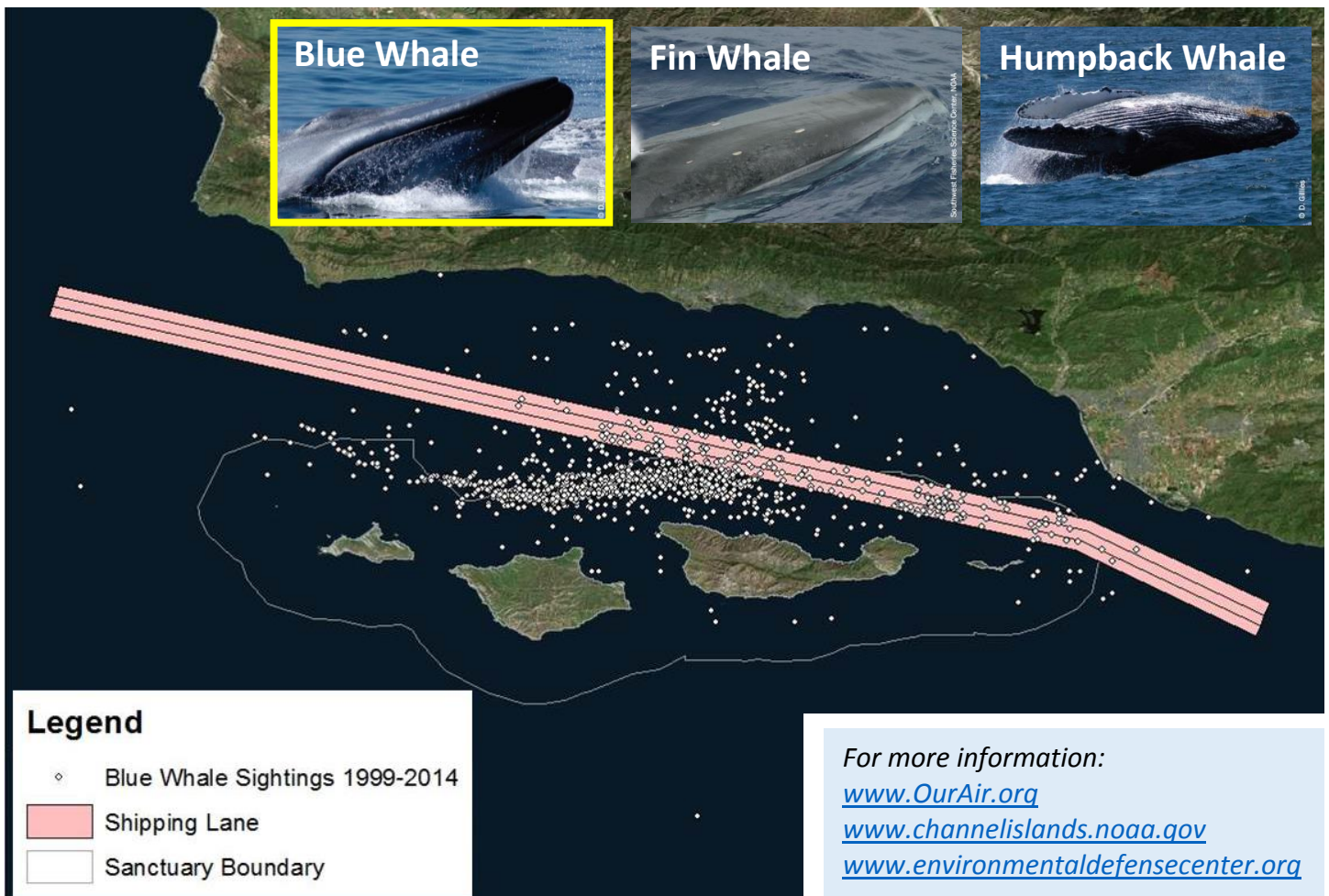
Endangered whale species feed and travel in and around the shipping lanes seasonally:

- Blues
- Fins
- Humpbacks



Increased Future Vessel Traffic

Within the Channel, pollution and endangered whale concerns from ship traffic may become more pronounced as the number of annual transits increases. There may also be changes in Channel traffic related to North American Emissions Control Area fuel requirements that took effect January 1, 2015.





Goals for the Vessel Speed Reduction (VSR) Trial

- Assess potential air quality and whale protection benefits from a voluntary speed reduction program in the Santa Barbara Channel
- Test the shipping industry's willingness to participate in this kind of a program
- Refine data collection and tracking mechanisms
- Lay the foundation for establishing a larger-scale program in the future

Criteria for VSR Trial

- Vessel must have a documented speed of 14 knots or higher in previous trips through the Santa Barbara Channel
 - Ensures Trial achieves at least a 2 knot speed reduction
 - Previous baseline speeds ranged from 14 knots to 18.67 knots
- Vessels must be participating in one of the VSR programs at the Ports of Los Angeles/Long Beach
 - Prevents Trial from competing with Ports programs
 - Ensures a continuous slow-speed zone from Ports through Channel

Seven global shipping companies participated:

- COSCO
- Hapag-Lloyd
- K-Line
- Maersk Line
- Mitsui O.S.K. Lines
- Matson
- United Arab Shipping Company

Trial Implementation

The VSR Trial was developed and implemented by staff from the partner agencies and organizations:

- The National Marine Sanctuary Foundation served as a fiscal agent for receiving funds and making incentive payments.
- Funding was provided by:
 - Santa Barbara Foundation
 - Santa Barbara County Air Pollution Control District
 - Ventura County Air Pollution Control District



Speakers and Participants in a 9/10/14 forum on the Trial Program.

- More applications for eligible transits (40) than could be incentivized
- In total, 35 transits enrolled in the VSR Trial and 27 of these qualified for an incentive payment
- Ship speeds through the Channel were verified by using Automatic Identification System (receives vessel speed and location data from transponders on all ships)
- Total incentive payout amount of \$67,500
- 5.1-knot average reduction from baseline speeds for the 27 eligible transits

Next Steps

The VSR Trial's design, enrollment process, and data collection/processing mechanisms were refined throughout, and a solid foundation is in place for establishing a larger-scale program.

Benefits of a Large-Scale Program in the Santa Barbara Channel

(Estimated 2,500-5,000 transits per year)

- 1,500-3,000 tons of NOx emissions reductions per year
- 47,500 -95,000 metric tons of regional GHG emissions reductions (expressed as carbon dioxide equivalent, or CO₂e)
- Assuming similar incentive, cost approx. \$6-12 million/year
- Immediate emission-reduction and whale-protection benefits
- Potential for a statewide program: benefits could be expanded along the California coastline

Urgency

- Proposed stricter federal ozone standard could put our region out of attainment; more important to reduce NOx emissions
- Projected increase in annual transits through the Channel to the Ports
- Possible changes in Channel traffic related to North American Emissions Control Area fuel requirements that took effect on January 1, 2015
- Ship strikes are one of the leading causes of whale mortality and may be affecting recovery

