

## MARINE DEBRIS POLLUTION



Students from California Santa Monica High School's "Team Marine" 7' x 21' art installation contains 34,727 bottle caps.

***"Despite global treaties to prevent dumping at sea and minimize land-based sources, and increasing efforts worldwide to protect water quality, the quantity of marine debris in the world's oceans is increasing."*** – California Ocean Protection Council, Marine Debris Resolution 2007.

An estimated 80% of marine debris comes from land-based sources, while only 20% comes from sea-based sources. Roughly 60–80% of all marine debris, and 90% of floating debris is plastic.<sup>1</sup> The lifetime of plastics in the marine environment is unknown.<sup>2</sup> Marine debris is ubiquitous; the North Pacific Gyre is home to the world's largest floating island of trash that is estimated to be more than 5 million square miles—larger than the entire United States. A study conducted by the Algalita Marine Research Foundation in the North Pacific Gyre found six more times the mass of plastic particles than plankton.<sup>3</sup> California's "ocean economy" is valued at \$43 billion, and local governments spend millions annually on beach and litter cleanup and on waste disposal.<sup>4</sup> Marine debris has also

<sup>1</sup> U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Office of Public and Constituent Affairs, (1999) "Turning to the Sea: America's Ocean Future;" United Nations Environment Programme (1995) "Global Programme of Action for the Protection of the Marine Environment from Land-based Activities." Note by the secretariat. UNEP (OCA) /LBA/IG.

<sup>2</sup> Coastal Commission at 22; H. Kanehiro, T. Tokai, K. Matuda, "Marine litter composition and distribution on the seabed of Tokyo Bay," *Fisheries Engineering* 31 (1995): 195-199.

<sup>3</sup> 4C.J. Moore et al., (2001) "A Comparison of Plastic and Plankton in the Pacific Central Gyre," *Marine Pollution Bulletin* 42: 297-1300.

<sup>4</sup> National Ocean Economics Program, *California's Ocean Economy*, 2005.

injured or killed at least 267 species worldwide, primarily through ingestion and entanglement.<sup>5</sup>

Accordingly, on February 8, 2007 the California Ocean Protection Council adopted a resolution on marine debris that outlines specific actions for California to prevent and reduce marine debris. The Council's resolution called for a statewide plan, which was developed on November 20, 2008: *The California Implementation Strategy for the Ocean Protection Council Resolution to Reduce and Prevent Ocean Litter*.<sup>6</sup> The plan targets the reduction of plastic fast-food and convenience packaging such as plastic bags and polystyrene, and prioritizes an Extender Producer Responsibility program for the state.



Trash in California's Ballona Creek. Photo courtesy of the CA Coastal Commission.

The Clean Seas Coalition, spearheaded by Lt. Governor John Garamendi, is a coalition of environmentalists, scientists, lawmakers, students, and community leaders pushing to implement the plan recommendations, and strengthen laws reducing trash in California's seas and on beaches.<sup>7</sup>

For more information about the Clean Seas Coalition, contact Leslie Tamminen at [Leslie.Tamminen@gmail.com](mailto:Leslie.Tamminen@gmail.com).

<sup>5</sup> California Coastal Commission, (2006) "Eliminating Land-based Discharges of Marine Debris in California: A Plan of Action from The Plastic Debris Project."

<sup>6</sup> [http://www.resources.ca.gov/copc/docs/0811copc\\_03\\_ocean\\_litter\\_strategy.pdf](http://www.resources.ca.gov/copc/docs/0811copc_03_ocean_litter_strategy.pdf)  
<sup>7</sup> [www.cleanseascoalition.org](http://www.cleanseascoalition.org)