



ORANGE COUNTY COASTKEEPER®



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Marine Debris

What is Marine Debris?



Marine debris is a major problem affecting the coastal environment, estuaries, and oceans around the world. Marine debris is trash and man-made solid material that is blown, dumped or abandoned directly into the ocean by sea vessels and platforms or blown, dumped, or washed into local storm drains and waterways eventually feeding to the ocean. Coastkeeper is committed to ongoing research to better understand local marine debris

issues, and involving the public in cleanups to raise awareness and help change behaviors. Since Fall 2011, Coastkeeper has hosted [monthly beach cleanups](#) that continue to bring out more and more volunteers each month!

2003 – 2010 Coastkeeper Marine Debris Study

As a part of the Ocean Conservancy's [National Marine Debris Monitoring Program](#), Coastkeeper volunteers from VQ Orthocare have monitored a 200-meter stretch of beach near Pelican Point in Crystal Cove State Park for the last seven years. Although the national study ended in 2006, VQ Orthocare has committed to continuing their work at Crystal Cove. Some key findings of the [study](#):

- Over 5,500 pieces of marine debris discovered between January 2003 and April 2010
 - 75.5% land-based debris: 2400+ straws, 1300+ balloons
 - 17.9% general-source debris: 850+ plastic bottles, 130+ plastic bags
 - 6.6% ocean-based debris: 85 plastic sheets, 73 light sticks, 74 pieces of rope

- The overall trend displays significant increases in observed debris during the first half of each year, peaking during the months of spring, which coincides with the rainy season.

More Information About Marine Debris...

Sources

There are three primary sources of marine debris: land-based debris, ocean-based debris, and general-source debris:

1. LAND-BASED DEBRIS

- **Individuals:** Individuals contribute to marine debris through accidental and deliberate actions. When visiting beaches and piers individuals carelessly leave trash or toss items into the ocean. Individuals inland improperly dispose of trash which may be washed into storm drains and local waterways during storm events.
- **Facilities and Construction:** Industrial and manufacturing facilities as well as construction and demolition sites are major producers of marine debris. Industrial and manufacturing facilities may generate marine debris as a result of improperly managed waste disposal, production, and equipment. Plastic resin pellets are a primary example of marine debris generated by manufacturing facilities and are an increasing problem around the world.

Similarly, construction and demolition sites also generate a substantial amount of marine debris. This occurs when waste and other materials are improperly disposed of and equipment and supplies are left unsecured.

- **Municipalities:** Municipalities are a primary source of marine debris. Storm water and snow melt can carry street litter into storm drains, local waterways and the ocean. Debris generated from landfills and waste collection vehicles are also key sources of marine debris resulting in additional street litter as well as possible medical waste.
- **Natural Events:** Natural events such as floods, hurricanes, tsunamis, and tornados may generate and carry marine debris to storm drains, local waterways or the ocean.

2. OCEAN-BASED DEBRIS

- **Vessels and Other Structures:** Recreational, commercial vessels, platforms and other sea structures are the primary sources of ocean-based debris. Ocean-based debris is the result of improperly secured equipment, lost or abandoned gear, poorly managed waste, or the deliberate dumping of waste at sea.
- **Natural Events:** Similarly to land-based debris, ocean-based debris is also the byproduct of natural events such as storms and hurricanes.

3. GENERAL-SOURCE DEBRIS:

General-source debris is man-made litter with no clearly defined source. The debris may have been generated by either land or ocean-based actions. Examples of general source items include: plastic bags, plastic bottles, and straps.

Impacts

1. DIRECT ENVIRONMENTAL IMPACTS



- **Ingestion:** Animals such as marine mammals, seabirds, turtles, and whales often confuse marine debris for prey. These animals will often

consume plastic items such as plastic bottle caps and plastic lighters, in the case of seabirds regurgitating the plastic items to feed their young. The plastic is indigestible and leeches toxic chemicals into the animals; this results in the animals starving to death.

- **Entanglement:** Marine animals often become entangled in marine debris such as lost or abandoned fishing nets, rope, even six-pack rings. Entanglement can lead to starvation, suffocation, injury and infection, increased vulnerability to predators, and death.
- **Ecosystem Altercation:** Marine debris such as lost/ abandoned crab pots, nets, and rope can damage vital marine habitats, scouring and breaking off pieces of coral reefs. Other marine litter such as plastic bags can smother and kill coral reefs as well as photosynthetic sea plants such as kelp and seagrass.

2. INDIRECT ENVIRONMENTAL IMPACTS

- **Invasive Species:** Marine debris is a potential vector for the transport and introduction of non-native species. Marine creatures such as shellfish may attach to floating pieces of plastic and travel hundreds of miles across the ocean.
- **Ecosystem alteration:** Marine debris cleanups can potentially further harm already damaged habitats. Mechanical equipment such as rakes pulled by tractors can disrupt shoreline habitats such as aquatic vegetation and nesting birds.

3. ECONOMIC IMPACTS

- **Tourism:** Marine debris creates an unsightly and unwelcoming environment to beachgoers and in severe cases may even result in

beach closure. The loss of beachgoers severely impacts neighboring business dependent upon tourism.

- **Fishing:** Fisheries are subjected to significant economic loss due to impacts from marine debris. Lost/ abandoned fishing nets, crab pots, as well as other gear often kill a significant amount of commercial fish and shellfish every year. Over fishing combined with lost gear greatly decreases long-term sustainability.
- **Navigation:** Floating marine debris creates a navigational hazard to sea vessels. Debris such as rope may entangle propellers; other debris may impact cooling systems and intake valves. This can result in vessels being stranded at sea and costly repairs.
- **Human Health/ Safety Hazard:** Marine debris poses a major public health hazard to beachgoers. Debris such as broken glass, metal cans, and syringe needles can lead to cuts and infection. Swimmers and divers can become entangled in abandoned nets and rope. Vessels can strike or become entangled in marine debris causing injury to passengers and disabling motors.

Take Action

Help Make a Difference at Monthly Beach Cleanups

Every 2nd Saturday at Huntington State Beach

Join Coastkeeper and [Coastal Playground](#) from 9 – 11 am at Huntington State Beach to clean the beach! We provide you with everything you need – gloves, trash bags, trash pickers, but we encourage you to bring your own reusable gloves, bags/buckets. Get all the info on how to participate in one of our cleanups [here](#).

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Upcoming Events

Coastkeeper Cleanup

January 10, 2015 at 09:00 AM

[View Event](#)

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OC Coastkeeper @OCCoastkeeper 15 Dec
Remember to not give [#corral](#) as a gift this year. It's already a gift from [#nature](#) in its habitat [@NOAAHabitat1.usa.gov/1BLsYp4](#)

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OC Coastkeeper @OCCoastkeeper 15 Dec
If you didn't hear, we teamed up with [@Coastalplygrnd](#) and 140 [#volunteers](#) to pick up over 1000 lbs of [#trash](#) last Saturday! [#cleanwateroc](#)

Expand



OC Coastkeeper @OCCoastkeeper 11 Dec
New studies show that there is now 5 trillion pieces of [#plastic](#) in our [#oceans](#). [bzfd.it/16b1Cyu](#)
[#cleanwateroc](#) [#trashfree](#) [#buzzfeed](#)

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