

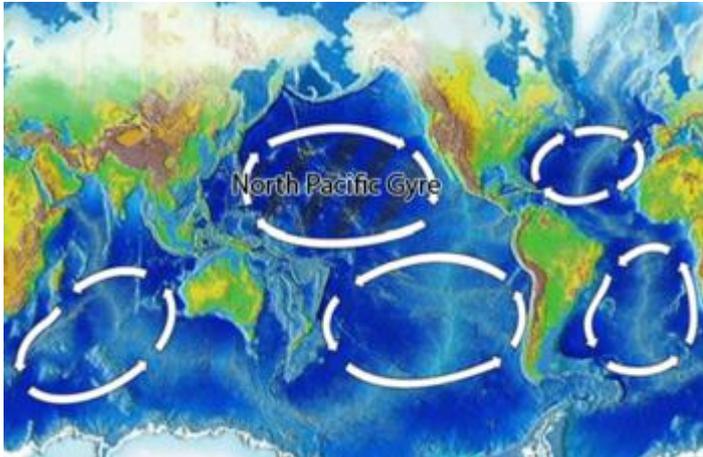


## Litter in our Waterways – Factsheet

- Marine litter poses a vast and growing threat to the marine and coastal environment. Around 8 million items of litter enter the marine environment every day. <sup>1</sup>
- An estimated 70 per cent of marine litter ends up on the sea bed, 15 per cent on beaches and the remaining floats to the surface. <sup>1</sup>
- An estimated 80% of marine debris is from land based sources 20% sea based. These sources fall into four major groups: <sup>1</sup>
  - Tourism related - food/beverage packaging etc
  - Waste/stormwater - ex stormwater drains, sewer overflows etc
  - Fishing related - lines, nets etc
  - Ship/boat related - waste/garbage deliberately or accidentally dumped overboard
- It is estimated three times as much rubbish is dumped into the world's oceans annually as the weight of fish caught. <sup>5</sup>
- Around 7 billion tonnes of plastic litter enter the ocean every year. <sup>2</sup>
- It is estimated that over 13, 000 pieces of plastic litter float on every square kilometre of ocean and this figure continues to grow. <sup>8</sup>
- Plastics make up about 60% of marine debris, with an estimated 100,000 marine mammals and turtles killed by plastic litter every year around the world. <sup>5</sup>
- Entanglement and ingestion are the primary types of direct damage to wildlife caused by marine litter; it can smother sea beds and it is a source of toxic substances in the marine environment. <sup>1</sup>
- Available information indicates at least 77 species of marine wildlife found in Australian waters and at least 267 marine species worldwide, are affected by entanglement in or ingestion of marine debris, including 86% of all sea turtles species, 44% of all seabird species and 43% of all marine mammal species. <sup>7</sup>
- Seals and sea lions are particularly affected by derelict fishing gear, nets and six pack rings, probably due to their inquisitive nature. An estimated 58% of seal and sea lion species are known to have been affected by entanglement including the Hawaiian monk seal, Australian sea lions, New Zealand fur seals and species in the Southern Ocean. <sup>3</sup>
- Researchers found one third of turtles studied in the eastern areas of Moreton Bay in Queensland had eaten discarded plastic. <sup>9</sup>
- The remains of dead flesh-footed shearwater fledglings from Lord Howe Island contained substantial quantities of plastics: up to 37 cm<sup>3</sup>, equivalent to at least 31% of capacity, whilst the contents of near-fledged birds, showed that 79% contained plastics, in volumes of up to 18 cm<sup>3</sup>. <sup>10</sup>
- Plastic bags on the ocean floor take 10-20 years to decompose. Plastic bottles take much longer. Because of this, one piece can kill more than one animal. An animal killed by swallowing plastic will decompose long before the plastic does, leaving the plastic free to kill again. <sup>1</sup>
- A survey by Ocean Watch Australia on Australian beach debris attributed 14% of debris to commercial fishing and 8% to recreational fishing activities. <sup>6</sup>

## About the Great Pacific Garbage Patch <sup>4</sup>

The Great Pacific Garbage Patch is located within the North Pacific Gyre, one of the five major oceanic gyres.



The **Great Pacific Garbage Patch**, also described as the **Pacific Trash Vortex**, is a gyre of marine litter in the central North Pacific Ocean located roughly between 135° to 155°W and 35°N to 42°N.

The patch extends over an indeterminate area, with estimates ranging very widely depending on the degree of plastic concentration used to define the affected area.

The Patch is characterized by exceptionally high concentrations of pelagic plastics, chemical sludge, and other debris that have been trapped by the currents of the North Pacific Gyre.

Despite its size and density, the patch is not visible from satellite photography since it primarily consists of suspended particulates in the upper water column. Since plastics break down to ever smaller polymers, concentrations of submerged particles are not visible from space, nor do they appear as a continuous debris field. Instead, the patch is defined as an area in which the mass of plastic debris in the upper water column is significantly higher than average.

The North Pacific Gyre (The Great Pacific Garbage Patch) is a debris convergence zone and was found to contain maximum levels of Floating micro debris, representing near to a million items per square kilometre. <sup>1</sup>

### Sources

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- 2: *Australian Marine Conservation Society*
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- 4: *Wikipedia*
- 5: *Faris, J& K. Hart (1995) Seas of Debris: A summary of the Third International Conference on Marine Debris, Alaska Fisheries Science Centre, National Oceanographic and Atmospheric Administration*
- 6: *Queensland Department of Environment & Resource Management*
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- 8: *Derraik, J.G.B. 2002: The pollution of the marine environment by plastic debris: a review. Marine Pollution Bulletin*
- 9: *Earthwatch: Dr Kathy Townsend*
- 10: *Plastic ingestion by Flesh-footed Shearwaters (puffinus carneipes) by Ian Hutton, Nicholas Carlile and David Priddel*