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Global Expedition to Study Marine Plastic Pollution in the Five Subtropical Ocean Gyres Ends in the South Pacific

(SANTA MONICA, CA) APRIL 25, 2011—Capping the most extensive study of marine plastic pollution ever undertaken, pioneering researchers with the 5 Gyres Institute have completed their fifth expedition through all five subtropical gyres, the massive oceanic current systems where plastic pollution accumulates.

The most recent expedition through the South Pacific Gyre covered 2,300 miles, beginning in Valdivia, Chile on March 24th and ending on Easter Island April 9th. Scarce data existed previously on plastic pollution in this region

“We had no idea what to expect, though we knew that the South Pacific Gyre has a more dense accumulation zone than the other gyres”, explained Anna Cummins, who with Marcus Eriksen, PhD, co-founded The 5 Gyres Institute in 2009. “We found little plastic until we approached the center of the gyre, where we suddenly began seeing more large and small plastic fragments floating past the hull of our vessel.”

This expedition completes the first global study of plastic pollution in all five subtropical oceanic gyres. Co-founders Dr. Marcus Eriksen and Anna Cummins began The 5 Gyres Institute after recognizing a tremendous gap in the current understanding of plastics’ global distribution, as well as unanswered questions about the chemical burden of ingested plastic on marine life, the ultimate fate of plastic pollution, and changes in the amount of plastic pollution in the ocean over time. Over the course of 2 years and an estimated 25,000 miles across the North Pacific, North Atlantic, South Atlantic, Indian Ocean and now the South Pacific, The 5 Gyres Institute has observed plastic pollution in the majority of the hundreds of sea surface samples they’ve collected. Following laboratory analysis of the surface samples, 5 Gyres will release the results on plastics’ density and global distribution in the marine environment.

Plastic pollution is known to harm marine life, to be a navigational hazard, and is thought to impact human health. 5 Gyres’ goal is to document the problem and bring it to international attention, promoting effective solutions that focus on source reduction.

“We want to show that this is a global problem and to inspire international cooperation,” says Dr. Marcus Eriksen. “Every country in the world contributes to the problem and thus needs to be actively involved in solutions that reduce the flow of plastic to our oceans.”

Much of this plastic marine pollution consists of minute plastic fragments resulting from degraded consumer products or derelict fishing gear. Sea turtles, marine mammals, birds and fish can become entangled by large pieces, or ingest microplastic particles. These particles are known to absorb other pollutants in the ocean, including DDT and other pesticides, PCBs, and other petroleum-based hydrocarbons. Some pollutants are known to transfer from ingested plastic into the tissues and organs of marine life, potentially becoming more concentrated as they travel up the food chain.

The 5 Gyres Institute, in collaboration with other scientists, is working to determine if marine life and the fisheries we harvest to feed the world are impacted by plastic pollution.

While the plastic pollution problem is typically misrepresented as a well defined “garbage patch,” a better analogy is a thin, diffuse soup of microplastic particles with a few large plastic objects and derelict fishing gear. It cannot be cleaned up at sea by any practical means.

“If we stop allowing plastic waste to leave land, the ocean will eventually regurgitate plastic pollution from the gyres onto the beaches of islands. Beach cleanup is gyre cleanup,” Eriksen explains.

Efficient solutions, the researchers stress, must begin on land, stopping the problem at its source. They advocate reducing consumption of the most polluting plastic products, legislation requiring companies to take responsibility for recovery and reuse of plastic products, and better materials and design for single-use throwaway products.

About 5 Gyres: the 5 Gyres Institute is a nonprofit organization committed to meaningful change through research and education. 5 Gyres disseminates its findings through lectures and traveling exhibits, and raises awareness of ocean plastic pollution through expeditions, including the JUNKraft, the boat built in 2008 of 15,000 plastic bottles. 5 Gyres collaborates with the Algalita Marine Research Foundation and Pangaea Explorations, providing it with a marine laboratory and research vessel, respectively, and works with the United Nations Safe Planet Campaign. After studying the five subtropical gyres, 5 Gyres will monitor these vortexes through continued expeditions, and the Traveling Trawl Program, which loans research equipment to volunteer “citizen scientists.”

Photos and images from the South Pacific Expedition:
<http://www.flickr.com/photos/5gyres>

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