



# WEEK 4 ENVIRONMENT: WATER



**Position:**  
-17.12, -25.4133  
**Time:** 2016-11-23  
20:52:00 UTC

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## Marine Pollution

By Rich Wilson, Skipper  
Great American IV

Today is a beautiful day at sea. We are 300 miles east of Recife, Brazil, the blue sky has fluffy clouds, and the sea, cresting with an occasional whitecap, is a deep blue glittering with sunlight. Does the ocean look polluted? No, it looks beautiful.

But just because it doesn't look polluted, doesn't mean it isn't. I only see a narrow swath, on either side of the boat, and only in daytime, and only if I'm on deck. To answer the question properly, we need to Ask an Expert. If we were buying a house, we'd consult a real estate expert, if we were sick, we'd consult a medical doctor. We need trained, data driven, environmental scientists to guide us by their research, not just opinions.

And what do the experts say? They say that the oceans are polluted, and are getting more polluted. Is there a Great Atlantic Garbage Patch so densely polluted that you could walk across it? No, not in the way that the media portrays it. But there is a large area of high concentration of microplastics that are there only because we humans let them get into the ocean, and then they found their way there through ocean currents.

The plastics are a problem because they get into the food chain of fisheries, and we need fish as a protein source. Oil pollution along coasts is problematic due to contamination of wetlands. Chemical pollutions of rivers and stream is problematic for drinking water and fishing.

To create solutions for these problems, first we need to know the extent and characteristics of the problem. And for that we need data-driven research, the skilled scientists to interpret that data, and for the non-expert public to listen to the experts.



## Plastic in Our Oceans

by Dr. Kara Lavender Law

Do you ever wonder what happens to a plastic drinking straw after you are finished using it and throw it away? Where is "away"? Where does it end up?

The answer depends on where in the world you live. In some places, the straw is probably buried in a landfill, or burned to produce energy in a power plant. In other parts of the world where there may not be enough garbage cans, or garbage trucks, or places to safely contain this trash, the plastic straw might end up in a river, or on a beach, or in the ocean.

An estimated 8 million metric tons of plastic waste enter the oceans each year. That's enough plastic trash to line the entire coastline of the world with a stack of 5 plastic grocery bags chock-full with plastic garbage. What happens to this plastic?

Most of the plastic packaging that we use breaks down into floating fragments, smaller than your pinky fingernail, that collect in vast regions of the oceans often referred to as "garbage patches". These are not giant landfills, or plastic islands made of trash, but instead consist of millions of tiny pieces carried by ocean surface currents to dead-end collection zones in the oceans.

Marine animals as small as plankton and as large as whales can eat these small plastic bits, and so can the fish and shellfish that we enjoy as seafood. We're not sure what effect the plastic has on the animals, or if there is any harm to humans who eat them, but surely you wouldn't choose to eat plastic for dinner!

The best way to stop this plastic pollution is simply to use less plastic. Skip the straw. Choose reusable containers and bags instead of those designed to be thrown away after one use. Recycle when you can. And teach your friends and family about this pollution problem that we

can all help solve by making small changes in our daily lives.



## NEWS EXPLORER

**Freshwater is essential for life on Earth, yet there are communities and ecosystems that do not have enough of it. Research an issue covered in the news that involves a lack of clean freshwater. What is the problem and what are some potential solutions? Write an editorial to a local newspaper about it.**



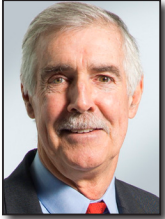
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# WEEK 4

## ENVIRONMENT: WATER

Position:  
6.01667, -27.8533  
Time: 2016-11-17  
13:54:00 UTC

Next Week:  
Invisible Places.  
**sites  
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