

Georgia's 2018

# CLEAN WATER HEROES

Dr. Jenna Jambeck

## THE WORLD'S OCEANS

UGA Environmental Engineer Searching for Solutions to Plastic Pollution

### INTRODUCTION:

For lovers of wildlife and water, the photos and videos on social media are heart-wrenching: sea turtles with plastic straws stuck in their noses; dead whales with plastic bags found in their stomachs; rivers of plastic trash flowing into oceans in the Philippines; a giant plastic garbage gyre swirling in the Pacific. Yet despite these dire visuals, until 2015, no one had attempted to quantify exactly how much plastic pollution was entering our oceans. That's when the University of Georgia's Dr. Jenna Jambeck teamed with researchers from the National Center for Ecological Analysis and Synthesis in California to discover just how badly we were polluting our oceans. The results of their research: 8 million metric tons of plastic trash find their way to our oceans each year—the equivalent of a garbage truck filled with plastic dumped in the ocean every minute of every day for 365 days. That research and Jambeck's other work has thrust her to the forefront of the global effort to stem plastic pollution, and today the impact of her work is felt in Georgia and across the globe.

### THE WATER BODY:

Oceans cover 71 percent of the Earth's surface and contain 99 percent of the living space on the planet. These vast spaces cradle the life upon which we depend, from shrimp and tuna to phytoplankton. The country's commercial fish and shellfish harvests amount to around 9 billion pounds annually, and the tiny phytoplankton in our oceans produce half the oxygen that we and other land mammals breathe. In Georgia, the Savannah, Ogeechee, Altamaha, Satilla and St. Mary's drain to the Atlantic Ocean along the state's 100-mile coastline while the northern and western portions of the state ultimately drain to the Gulf of Mexico via the Tennessee, Alabama, Apalachicola, Ochlocknee and Suwannee rivers. These rivers connect Georgia's 10 million residents—and their trash—to the world's oceans.

### THE CLEAN:

Plastic trash has taken Dr. Jenna Jambeck to virtually every corner of the planet, and along the way she has become one of the world's leading scientists for the management and reduction of plastic waste.





In 2010, she helped develop the Marine Debris Tracker, a smartphone app that allows citizens to document and report plastic trash from any place in the world. Since its creation, 1.3 million items have been logged. The Georgia Sea Turtle Center on Jekyll Island uses the tool in its shore cleanup program, and interestingly, the individual who has logged the most litter lives in Omaha, Nebraska, illustrating the point that the majority of plastic pollution in our oceans comes from land-based sources.

“Mismanaged waste on land is blown or washed into our waterways and ends up in our ocean. What happens inland is very important,” she said.

Her research showed that the U.S. produces 270 pounds of plastic waste per person annually. And, while the vast majority of that is disposed of properly in landfills or recycled, as much as five pounds per person winds up in the ocean as a result of littering, both along the coast and inland.

In 2014, Jambeck traveled for 19 days across the Atlantic Ocean as part of the all-woman crew of eXXpedition, a sailboat voyage to study and bring attention to global plastic pollution, and earlier this year, the National Geographic Society awarded her one of its Explorer grants for her work on reducing plastic litter in Vietnam. She has testified before Congress and the United Nations on the subject, and in 2017 her notoriety led the U.S. State Department to enlist her talents as a “plastics ambassador.” During the past year she has travelled from the Middle East to East Asia, touring waste management facilities, educating youth and advising local governments on plastic waste reduction.

Back home in Athens at the UGA’s New Materials Institute, she works with other researchers and students to identify and develop alternatives to plastics in packaging and consumer products.

While Jambeck’s research indicates that the plastic pollution problem in our oceans will grow over the next several years, she says programs that she has helped implement overseas are beginning to make a difference. She is optimistic that change is afoot because trash is something that everyone can see.

“Compared with other environmental problems, this is very visible,” she said. “People can see it and understand it. They can advocate for change and they can make changes themselves. Governments are certainly listening and industry is stepping up as well.”



*Top: Dr. Jenna Jambeck’s work with the U.S. State Department has led to advances in how developing countries manage their waste streams. While developing economies use less plastic per person than the U.S., a greater percentage of that plastic is not properly disposed of and ends up in our oceans. Above: Dr. Jenna Jambeck’s travels to research and understand the impacts of plastic pollution have taken her across the Atlantic Ocean on a 19-day sailing expedition as well as to other locations across the globe.*



#### For More Information Contact:

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