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Travel Industry, Fisheries Depend on Threatened Coral Reefs

MARIO RITTER: Welcome to EXPLORATIONS in VOA Special English. I'm Mario Ritter. This week, we hear from a prize-winning expert on bees. May Berenbaum has studied ways to help protect the insects from bee diseases and other threats. Last year, she won the Tyler Prize for Environmental Achievement.

We also tell about efforts to study the spread of plastic waste in the world's oceans. But first, we hear how human activities are threatening coral reefs and the sea life they support.

(MUSIC)

AP
Snorkelers swim with sharks on a reef in Bimini, Bahamas, in 1995

CHRISTOPHER CRUISE: The world's coral reefs are increasingly being threatened, mostly because of human activities. A group of environmental organizations released a report on the issue. The "Reefs at Risk Revisited" report used new information and improved satellite mapping systems to study the world's coral reefs. For the first time, it also considered the effect of climate change on these threatened sea organisms. Jane Lubchenco is administrator of the National Oceanic and Atmospheric Administration, or NOAA. She says the problem is serious.

JANE LUBCHENCO: "Approximately 75 percent of the world's coral reefs are currently threatened by a combination of local and global pressures."

Lubchenco says the threat to coral reefs will continue to increase unless something is done to save them.

JANE LUBCHENCO: "If the current trend persists, the projections in this report tell us that 20 years from now, roughly half the reefs globally will experience thermal stress sufficient to induce severe bleaching in most years. Within the next 50 years this percentage is expected to grow more than 95 percent."

Nancy Knowlton is with the Smithsonian Institution. She says the threat to coral reefs could have a major effect on sea life.

NANCY KNOWLTON: "It's been estimated that about one - at least one quarter, maybe as much as one third, of all species that live in the ocean live associated with coral reefs. So perhaps it is not too surprising that even more recently an analysis was done that suggests that one third of all coral species are actually at risk of extinction. This makes corals the most endangered animal on the planet, even more endangered than frogs."

Millions of species of sea life depend on coral reefs for their survival. This makes them an important source of food for millions of people around the world.

Coral reefs also protect coastlines from storms and flooding. And, they provide economic security for many countries.

LAURETTA BURKE: "Tourism is an important economic contributor in over 95 countries and territories around the world. It contributes over 20 percent of GDP in over 20 countries."

Lauretta Burke is with the World Resources Institute. She was one of the lead writers of the report. She says more than 275-million people are dependent on the resources from coral reefs, mostly in Southeast Asia and the Indian Ocean.

The report noted overfishing and climate change as two of the most serious threats to the world's oceans. It said higher acidity levels caused by carbon dioxide emissions are also a problem. Other threats include the use of explosives for fishing, as well as the run-off of toxic materials and other pollution.

LAURETTA BURKE: "Overfishing is the most widespread threat affecting about 55 percent of the world's reefs. The threat is particularly high in Southeast Asia. Watershed based pollution and coastal development affect roughly a quarter of the world's reefs."

Burke says while the reefs around Australia are the best preserved, those in Southeast Asia are the most threatened. Ninety percent of them are at risk, largely because of overfishing.

The report says coral reefs are critically important. It says better management practices and policies must be established to reduce the threats to these valuable ecosystems. I'm Christopher Cruise.

(MUSIC)

MARIO RITTER: Next, we turn to environmental activist Marcus Eriksen. He goes sailing in search of objects floating near the ocean's surface. But, as Shirley Griffith explains, he is not hoping to catch fish.

SHIRLEY GRIFFITH: Marcus Eriksen is not really fishing. He is catching plastic in the Atlantic Ocean. Eriksen wants to publicize the growing buildup of plastic waste in our oceans and to study its effects.

MARCUS ERIKSEN: "These are five sub-tropical gyres in the world where the majority of the plastic in the world accumulates."

ANNA CUMMINS: "The gyre is formed by ocean currents that couple with the spinning of the Earth, the Earth's rotation. And what happens is that you have, effectively, a massive whirlpool, this large spinning system, where debris can accumulate."

Anna Cummins and her husband Marcus Eriksen set up a not-for-profit group called the 5 Gyres Institute. It helps researchers with studies of plastic pollution in the oceans. Cummins says plastic bags and bottles have little or no value after they are used. Most plastic waste can be found in solid-waste landfills or along rivers. A lot of this waste also washes out to sea.

ANNA CUMMINS: "This becomes a problem in the marine environment because plastics are designed to last forever. They don't break down, they can't be digested by marine organisms and they persist in the ocean for thousands of years."

When sailing, Eriksen and Cummins gather objects from the ocean's surface. Hundreds of things they caught have gone to a California laboratory for testing.

ANNA CUMMINS: "What shocked me the most on all these trips is to cross an ocean, to cross for thousands and thousands of miles, and find that every single sample we pull up has plastic."

Some plastics stay in large pieces for a long time. But many break down into smaller particles.

MARCUS ERIKSEN: "The plastic out there. It's not a condensed island of trash. It's really spread out. And it's this plastic soup, that is from continent to continent."

Animals mistakenly eat the smaller pieces of plastic or feed them to their young.

ANNA CUMMINS: "Roughly 43 percent of all marine mammals, 86 percent of all sea turtle species and 44 percent of sea bird species have been found with plastics in or around their bodies. Thirty-five percent of the samples of fish that we collected in the north Pacific had plastic in their stomachs."

5 Gyres Institute and its partners are now studying how plastics enter the ocean's food supply and their effects on human health.

MARCUS CUMMINS: "I had a chance to do what's called a 'body burden analysis' on my own blood. We looked into my blood serum to find, do I have the same chemicals that we know stick to plastic. And we found in my blood trace levels of PCBs, DDT, PFCs and higher levels of flame retardants. We don't know how these chemicals entered my body. As a woman, I know that these chemicals in my body will pass on to the next generation."

Marcus Eriksen and his partners used 15,000 empty plastic bottles to build a boat they called "JUNKraft." In 2008, they sailed from California through the North Pacific Gyre.

MARCUS ERIKSEN: "The North Pacific Gyre, it's surprising if you go only 1,000 miles off the coast of California, which is 7,000 miles from Japan, you still get a lot of Japanese and Chinese plastic."

Eriksen and Cummins say the seas of plastic waste will be with us for a long time. But they believe there are solutions.

ANNA ERIKSEN: "The solutions, they don't begin on the ocean. They begin on land."

MARCUS CUMMINS: "We also need to improve our recycling infrastructure. Here in this country, in the United States, we only recover and recycle roughly five percent of our plastics."

Re-using plastics is one way. The husband and wife team say they support the wider use of biodegradable materials. They want more products re-designed so they can be used again and again. And they believe that people around the world need to understand the problem of plastic waste and its effect on the environment and our health. I'm Shirley Griffith.

(MUSIC)

MARIO RITTER: You are listening to EXPLORATIONS in VOA Special English.

(MUSIC)

CHRISTOPHER CRUISE: Bee expert May Berenbaum knows that many people have an uneasy feeling about bees because they sting.

MAY BERENBAUM: "But on the other hand, people all over the world have developed a dependency on the honey bee because it is really the world's premier managed pollinator. And here in the US, for example, over 90 crops depend on honeybees for pollination services."

Farmers depend on bees to help them grow crops. But many bees have died in recently because of what scientists call colony collapse disorder. Berenbaum says there are many reasons for this. One is the long-distance transport of bees to pollinate crops. This has helped spread bee diseases. Another reason is the build-up of insect-killing pesticides in bee colonies. Researchers like Berenbaum are studying the problem. Yet she says all of us can help.

MAY BERENBAUM: "You can buy local honey. Local honey is available at stores only because there is a local beekeeper who went to the trouble of harvesting it. So the more beekeepers there are, the more honey there is. We've, over the last 25 years, seen an alarming decline in the number of beekeepers. It's starting … the interest is resurging, which is the best news for America's bees … actually more beekeepers!"

She says people can help by planting flowers and learning to live with weeds, some of these provide food for bees. Berenbaum was in Los Angeles to receive the Tyler Prize for Environmental Achievement. She says the prize of $200,000 will help a project involving "citizen-scientists."

MAY BERENBAUM: "We have one project called bee-spotter, which is now restricted to Illinois, where we ask people to go out with a digital camera, even a cellphone, and photograph either bumblebees or honey bees."

She is pleased with the project.

MAY BERENBAUM: "A citizen-scientist outside Peoria actually sent in a photograph of a species of bumblebee, the rusty patched bumblebee, bombus affinis, that was thought to have gone extinct in that area, and was recovered by a private citizen with a digital camera."

Berenbaum says we should not forget that bees are also important for the honey they produce. So in addition to pollinating crops, the honey bee makes our lives a little sweeter. I'm Christopher Cruise.

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MARIO RITTER: This program was written by George Grow and June Simms. Our announcers were Shirley Griffith and Christopher Cruise.

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