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often hear the idea that people go cruising for the "freedom." But all freedom comes with responsibility. For all the beauty, lessons and joys we get from the ocean each time we go sailing, we can give back in a fun and valuable way by being citizen scientists. Scientists often conduct research by using amateur scientists, called citizen scientists, to collect data. Citizen scientists are concerned citizens, often without any scientific study or training in their background, who volunteer their time to further scientific study and understanding of the

Citizen Oceanographer

Help the world's oceans while you sail

By Teresa Carey

ocean and coasts. This lends reliable research to conservationists who use it to advocate for protection of the natural resources through new policies, regulations, programs and clean-up efforts.

Since it is usually expensive for research vessels to conduct ongoing data collection from an abundance of ocean locations, it is important for cruisers to get involved. Sailors are out on the water because we enjoy it and recognize that there is something special about the ocean. Why not take a few notes, photographs or samples to further the study and protection of the world's oceans? The best results from a citizen scientist opportunity are those that further the research and enrich the individual. Here are four programs that will do just that.

1) 5GYRES www.5gyres.org

5Gyres is an organization that is studying the accumulation of plastic pollution in the oceans. They are on a national campaign to educate the public of problems the oceans are now facing due to the accumulation of plastic trash. Used in many disposable products such

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as cups, straws, packaging, bottles or bags, plastic is designed to last decades and is not biodegradable. Plastic waste breaks apart into tiny pieces but never decomposes completely. Some plastics are recycled, but many eventually find their way to the ocean. The amount of plastic accumulating in the ocean gyres is growing. The Pacific Garbage patch has been described as a "floating island" of plastic trash, trapped by the currents of the gyre.

The next time you are planning an ocean crossing, get in touch with 5Gyres. They will send you a small trawl designed for sailboats to tow and collect samples of plastic. When you are finished, you simply mail the samples to 5Gyres and the trawl to the next sailor. They will do the rest. You can enjoy your passage and at the same time contribute to an ongoing study of the ocean.

2) REEF CHECK www.reefcheck.org/

Scientists agree that the health and state of coral reefs is a direct reflection on that of the ocean as a whole. Unfortunately, our coral reefs have suffered significant degradation due to human impact such as overfishing, pollution and climate change.

Reef Check is an organization that monitors coral reefs worldwide. In 1997 they conducted the



first global coral reef survey that resulted in data showing that coral reef's health is even more fragile and in trouble than previously thought. Following this study, they conducted similar research in 2002 resulting in a 5-year report called "The Global Coral Reef Crisis—Trends and Solutions." It was the first scientific study that showed a global decline in coral reef health over five years. They claim that no reef in the world remains untouched by humans. Over 80 coun-



tries and thousands of volunteers contributed to this significant study.

The next time you sail to an island and strap on your fins and snorkel or scuba gear to gaze at a beautiful coral reef, consider doing so with a team of others. By joining a Reef Check EcoDiver team, you will be helping to monitor and collect data on the coral reefs worldwide.

3) SEANET www.tufts.edu/vet/ seanet

The Seabird Ecological Assessment Network (SEA-NET) began with collaboration between the Tufts Center for Conservation Medicine and the Lloyd

Center for Environmental Studies in Massachusetts in 2002. It is an ongoing effort to collect data that will help scientists identify and address threats to migratory birds. By organizing the efforts of citizen scientists, SEANET provides data about bird mortality and its relation to oil spills, algal toxins and disease outbreaks. Monitoring bird mortality rates can teach us about the health of the marine environment as a whole because bird health often serves as an indicator of ecosystem health. Sarah Courchesne, SEA-NET's Project Coordinator calls seabirds, "sentinels of ocean health-a window into what is happening in



the depths."

Currently, hundreds of volunteer citizen scientists for SEANET participate in year-round beached bird surveys along the east coast of the United States. Coastal sailors who spend most of the time sailing regionally, such as in the Chesapeake, Long Island Sound or the Florida Coast can create a more intimate relationship with their environment by volunteering for SEANET. Set the anchor in your favorite cove, grab your binoculars and notebook and row ashore for an evening walk along the beach to

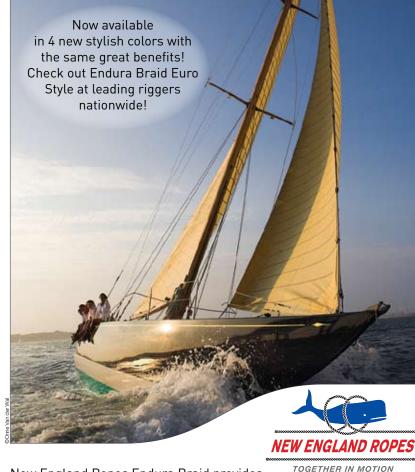


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make observations and collect data.

4) ADVENTURERS AND SCIENTISTS FOR CONSERVATION www.adventureandscience.org Adventurers and Scientists for Conservation is an organization that pairs people planning an outdoor expedition with scientists needing data from the same region. It is the only citizen scientist organization that utilizes the unique skills of outdoor adventure enthusiasts such as sailors or mountaineers. Their mission is "to improve the accessibility of scientific knowledge through partnerships between outdoor enthusiasts and scientists." Cruising sailors and day sailors can lend a hand by collecting the data scientists need on their next sail.

Volunteering for Adventurers and Scientists is simple and free. All you have to do is complete their online registration form and explain what your voyage entails. Adventurers and Scientists will then find a project to perfectly compliment your cruise and add to the experience, rather than be a burden. They welcome groups with children and will find a project for you anywhere on earth.

Volunteer citizen scientists who want to make more out of their expeditions are not required to have special skills. Instead, each volunteer meets with the scientist they are paired with via phone calls, Skype or in person to go through the protocols and training the sailor needs to become an adventure-scientist. They will equip the sailor with the tools needed for collecting and preserving samples or measuring and recording variables. When planning your next voyage, get in touch with Adventurers and Scientists for Conservation to see how you can help. BWS