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Learn about environmental issues, in your community and how you can get involved.



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Terri Reed presents a check to Anna McCartney for half the proceeds from a gift basket auction at the Beach Glass Festival in May.

Beach Glass Festival donates to 2 groups

The second Great Lakes Beach Glass Festival, organized by Relish Jewelers owners Jennifer and Terri Reed on Memorial Day weekend, drew international beach glass artisans and local lecturers to showcase Lake Erie's economic, historical and ecological importance and to highlight the Great Lakes, especially Lake Erie, as precious jewels that need our protection.

The festival was not only an economic boost for the region but proceeds from gift basket auctions were

donated to Pennsylvania Sea Grant and to the Erie Homeless Veteran Community Employment Service.

Pennsylvania Sea Grant will use the funds locally for research, education and outreach efforts to protect the Lake Erie watershed. HVCES will use the donation to help homeless veterans develop the skills required by local business and to assist them in all aspects of job placement. Local veterans can call 860-2038 for information.

— Anna McCartney



CENTER FOR GREAT LAKES LITERACY

Sherri "Sam" Mason, right, an associate professor of chemistry at State University of New York at Fredonia, collects water samples from the Environmental Protection Agency's research vessel Lake Guardian during a July Lake Erie teacher workshop. The EPA and the Center for Great Lakes Literacy sponsored the workshop, facilitated by Pennsylvania and Ohio Sea Grant programs. Mason shared her research on effects of plastic pollution on aquatic life with educators from around the Great Lakes.

Plastic havoc

Accumulated pollutants harm Lake Erie

By ANNA MCCARTNEY
Contributing writer

No place in the world is left untouched by plastic pollution.

Researchers are finding plastics everywhere they look, including the ocean, the Great Lakes, on out-of-the-way uninhabited islands and even trapped in remote Arctic sea ice.

Just look around you. How many things can you find that aren't made from plastic or packaged in plastic? Because it's durable, lightweight and cheap and can be made into virtually anything, it now makes up the majority of every product that touches our daily lives, including facial scrubs and toothpaste.

Beaches and waterways are littered with the discarded plastic products of human society: water bottles, cigarette lighters, cigarette butts, food containers and utensils, toothbrushes, straws and more. Studies show these items end up thousands of miles from the nearest civilization and that most of the worldwide plastics waste ultimately ends up in the ocean.

However, until Sherri Mason, a SUNY Fredonia chemistry professor, led the study of plastics pollution in Lake Erie in 2012, no one was documenting plastic in freshwater. Since then, she has found plastic in water samples taken from all the Great Lakes, with the highest concentrations found in Lake Erie and Lake Ontario.

Plastic debris does not biodegrade, so it can remain for centuries and cause untold havoc in ecosystems. Whether in the ocean or the Great Lakes, the most worrisome marine plastic debris cannot easily be seen because it includes microplastic resin pellets used to manufacture plastic products, microbeads added to personal care products, and the breakdown of plastic bags, bottles and other products.

Plastics pollution kills untold numbers of fish, seabirds and sea turtles, seals



CHRIS JORDAN/Contributed photo

The remains of dead baby albatrosses reveal the far-reaches of plastic pollution on Midway Atoll, 2,000 miles from any mainland.



DAVID BOUGHTON PA SEA GRANT

The most worrisome plastic debris cannot easily be seen. Sherri Mason looks for plastic microbeads in Lake Erie water samples.



5 GYRES INSTITUTE

Researchers found plenty of micro-plastics less than 1 millimeter in diameter. Some broke off from larger pieces over time. Tiny round pieces could be body scrub and toothpaste micro-beads that slide right through wastewater treatment plants.

and other marine mammals each year after they ingest plastic or get entangled in it. Ninety percent of Laysan Albatross chick carcasses and regurgitated stomach

contents have been found to contain plastics. Mason has also documented plastic in Great Lakes fish and birds, including perch, lake trout, muskie and cor-

GET INVOLVED

For more information about the PA Lake Erie International Coastal Cleanup and to register for the Sept. 20 event, visit <http://nie.goerie.com/coastal-cleanup>.

morants. Researchers are finding the plastics and seeing them increase at every trophic level up the food chain.

Furthermore, as plastic fragments float in the water; they act like sponges that accumulate manufactured poisons that are not water-soluble, such as DDT, PAH and PCBs. These pollutants are known to bioaccumulate and biomagnify up the food chain and find their way into the foods we eat. The plastic pieces will likely make this problem worse.

Perhaps plastic pollution has reached this level because most people never see the accumulating amount of marine debris and the serious threat it poses. But studies by Mason, the National Oceanic and Atmospheric Administration, the Ocean Conservancy, the 5 Gyres Institute, the United Nations and others will, it is hoped, demonstrate that the impacts and quantity of marine debris are significant. These pollutants have increasingly negative effects on our economy, costing huge amounts in beach cleanups, tourism losses and damage to fishing and aquaculture industries.

Eliminating marine debris and its staggering costs to the environment, wildlife, navigation safety, human health and the economy will require every citizen to take action. You can start by volunteering for the PA Lake Erie International Cleanup, and by joining us next week to learn what others are doing to prevent this problem.

ANNA MCCARTNEY, a communications and education specialist for Pennsylvania Sea Grant, can be reached by e-mail at axm40@psu.edu.



ANNA MCCARTNEY/Contributed photo

Join volunteers in the Erie region for the Sept. 20 International Coastal Cleanup.

Clean up our waterways

Whether you live along the coast or miles inland, you are ultimately connected to the waterways that provide you with water, food and recreation. Register to keep our local waterways and the entire ocean environment clean, identify the sources of debris and help change the behaviors that cause the

problems. Visit <http://nie.goerie.com/coastal-cleanup/> for a map and photos of local cleanup sites, meeting locations and contact information. You can also register for the Sept. 20 event. Schools can hold cleanups anytime this month. See "your space" for details.

— Anna McCartney



CONTRIBUTED PHOTO

Students from Our Lady's Christian School collect trash and data in 2012.

Host cleanup at school

The PA Coastal Resources Management Program and Pennsylvania Sea Grant invite teachers and students to make a difference in their community by hosting a school cleanup anytime this month.

Teachers can decide on a convenient day when school meets. After the

cleanup is complete, you will share the data with PA Sea Grant to be added to the Lake Erie Intercoastal Cleanup data and worldwide totals. To reserve bags, gloves, data cards and instructions, contact Anna McCartney at axm40@psu.edu to register your school.

— Anna McCartney

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Check out these websites to learn more:

http://5gyres.org/see_global_research/
<http://marine.debris.noaa.gov/>
<http://blog.oceanconservancy.org/tag/ocean-plastic/>
www.paseagrant.org/

Beverage bottles, food wrappers, cigarette butts, toys, straws and fishing line are all made of plastic, and body scrubs and toothpaste contain plastic microbeads. This plastic is polluting the Great Lakes and the ocean. Learn more about plastics in the environment by visiting today's Web sites. Write a letter for "your space" encouraging your fellow students, parents and neighbors to use less plastic to keep it out of our environment. E-mail it with your photo to axm40@psu.edu.

