

Curriculum Connection – Summer 2014

COASTAL HERITAGE **Curriculum Connection**

Explore Curriculum Connection guides, which are written to accompany each issue of *Coastal Heritage*, a quarterly publication of the S.C. Sea Grant Consortium.

Coastal Heritage, Summer 2014 issue: [The Global Plastic Breakdown: How Microplastics Are Shredding Ocean Health](#)

Focus Questions

Use the Curriculum Connection to address these South Carolina Standards!

- Name 5 common household items that are made of or contain plastic. Why can plastic be a problem? Why is plastic so popular?
- What is the definition(s) of microplastic? Describe two examples of how microplastics negatively impact coastal or marine wildlife.
- Where does most of the plastic in the ocean come from?
- What is the Great Pacific Garbage Patch?
- Explain how plastics both disperse and attract contaminants.

Kindergarten

K-5.2 Compare the properties of different types of materials (including wood, plastic, metal, cloth, and paper) from which objects are made.

3rd Grade

3-2.5 Summarize the organization of simple food chains (including the roles of producers, consumers, and decomposers).

5th Grade

5-2.2 Summarize the composition of an ecosystem, considering both biotic factors (including populations to the level of microorganisms and communities) and abiotic factors.

5-2.4 Identify the roles of organisms as they interact and depend on one another through food chains and food webs in an ecosystem, considering producers and consumers (herbivores, carnivores, and omnivores), decomposers (microorganisms, termites, worms, and fungi), predators and prey, and parasites and hosts.

5-3.5 Compare the movement of water by waves, currents, and tides.

5-3.6 Explain how human activity (including conservation efforts and pollution) has affected

the land and the oceans of Earth.

5-4.8 Explain how the mixing and dissolving of foreign substances is related to the pollution of the water, air, and soil.

9th – 12th Grade

(Chemistry) C-3.6 Identify the basic structure of common polymers (including proteins, nucleic acids, plastics, and starches).

(Earth Science) ES-5.5 Explain the results of the interaction of the shore with waves and currents.

(Earth Science) ES-5.8 Analyze environments to determine possible sources of water pollution (including industrial waste, agriculture, domestic waste, and transportation devices).

Lesson Links...

Educator's Guide to Marine Debris for the Southeast and Gulf of Mexico

Download a free copy of this marine debris educator's guide to use with your students! Topics that are covered in this resource include litter, abandoned crab traps and boats, plastics such as monofilament, and other types of debris. Access the guide by visiting the S.C. Sea Grant Consortium and Center for Ocean Sciences Education Excellence – SouthEast link: http://issuu.com/bqirsh/docs/sea_grant_pages. (K-12)

Keep Charleston Beautiful Programs

Visit the Keep Charleston Beautiful website <http://www.charleston-sc.gov/index.aspx?NID=811> and check out exciting FREE offerings for your students, including "Talking Trash," "Clean City Sweep," "Clean City Clara," or the "Artwork Contest." Activities are designed to teach students about the importance of reducing, reusing, and recycling to keep our waterways free of debris. Don't live in Charleston? No problem! Check out the national Keep America Beautiful for information on how you can get involved in your community: www.kab.org. (K-8)

National Oceanic and Atmospheric Administration Marine Debris Education Resources

Check out NOAA's Marine Debris website <http://marinedebris.noaa.gov> for information on ocean garbage patches, plastics, hazard debris, and other topics. Check out the Educator page for curriculum, posters, and other resources for use in your classroom. (K-12)

Center for Microbial Oceanography: Research and Education

The C-MORE Education Page provides educational lessons and resources related to marine debris, particularly plastics. The educational kits are geared for middle and high school students, however other resources on this page can be used for all grade levels. Check out their website at http://cmore.soest.hawaii.edu/education/teachers/science_kits/marine_debris_kit.htm. (K-12)

Community Involvement

Beach Sweep/River Sweep

Beach Sweep/River Sweep is South Carolina's largest one-day, volunteer-driven litter cleanup. Every 3rd Saturday in September, from 9 a.m. to 12 p.m., thousands of South Carolinians and visitors clear beaches, rivers, lakes, marshes, and swamps of aquatic debris. The cleanup is organized by the S.C. Sea Grant Consortium in partnership with the S.C. Department of Natural Resources and will take place in 2015 on September 19! The Sweep is held in conjunction with the International Coastal Cleanup, coordinated by the Ocean Conservancy <http://www.oceanconservancy.org/>. To find out how to get involved, check out the S.C. Sea Grant Consortium's Beach Sweep/River Sweep webpage: <http://www.scseagrant.org/content/?cid=49>. (K-adult)

Keep Charleston and America Beautiful

Keep Charleston Beautiful coordinates community events, including clean-ups, throughout the year. Check out their website at <http://www.charleston-sc.gov/index.aspx?NID=92> to find out more information on upcoming events. Keep America Beautiful, the national organization, has more than 600 affiliated organizations, so if you don't live near Charleston visit: www.kab.org/site/PageServer?pagename=community_find_an_affiliate_widget to find a location near you. (K-adult)

Marine Debris Trackers/Smart Phone Apps

The University of Georgia has a marine debris tracker app: <http://www.marinedebris.engr.uga.edu> that provides a way to report marine debris and assess the quantity and type found. In addition, the S.C. Sea Grant Consortium has an abandoned vessel and large marine debris app: <https://play.google.com/store/apps/details?id=mobsci.cleanmarine>. (K-adult)

Monofilament Recycling

Monofilament – the material that comprises fishing line – is made of plastic and often winds up in waterways. Get involved by recycling your monofilament line at receptacles located at boat landings and other public fishing access points. Want to adopt a monofilament bin? Contact the S.C. Department of Natural Resources to learn how you can collect and recycle monofilament line that has been disposed. The program is free! <http://www.dnr.sc.gov/marine/monofilament/form.html>. (K - adult)

Palmetto Pride Adopt-A-Highway

A great way to get involved in your community to prevent litter (including plastics) from reaching our waterways is to adopt a highway or road in your area. Check out the Palmetto Pride and S.C. Department of Transportation Adopt-A-Highway Program website to find out more: <http://palmettopride.org/adopt-a-highway/>. There are also education grants available! (K-12)

Surfrider Foundation

The Surfrider Foundation, <http://www.surfrider.org>, was formed for the sole purpose of protecting our oceans, beaches, and coastal areas through education and involvement. South Carolina has two Surfrider chapters: the Charleston Chapter <http://charleston.surfrider.org> and

the Myrtle Beach/Grand Strand Chapter: <http://surfridergrandstrand.org>. Check out both of these local organizations to learn about upcoming events and ways to get involved.

Last updated: 10/23/2014 3:02:15 PM

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