Students for Zero Waste Week PowerPoint Presentation Notes

SLIDE 1: Intro Slide

SLIDES 2-8: **There is one global ocean system** - visit National Ocean Service
http://oceanservice.noaa.gov/facts/howmanyoceans.html

> The ocean covers 71 percent of the Earth's surface and contains 97 percent of the planet's water. More than 95 percent of the underwater world remains unexplored.

SLIDES 9 – 12: **Thank You Ocean Report** – "The ocean takes care of us. Let's return the favor." http://www.thankyouocean.org/ "The ocean is a vital resource that provides food, water, commerce, recreation, medicine and even the air we breathe. Today, our ocean faces unprecedented threats from pollution, trash, declining fisheries and multiple impacts from climate change."

For more information about the ocean, visit **National Ocean Service**, America's coastal and ocean agency - http://oceanservice.noaa.gov/about/

SLIDES 12 – 17: National Marine Sanctuaries, http://sanctuaries.noaa.gov/
FAQs, http://sanctuaries.noaa.gov/about/faqs/welcome.html
History, http://sanctuaries.noaa.gov/about/history/welcome.html

> The sanctuaries range in size from the one quarter square mile of tropical coral reef of Fagatele Bay in American Samoa (an unincorporated territory of the U.S. – "owned" by the U.S. but not governed by the U.S.) to the 6,000 square miles of Monterey Bay National Marine Sanctuary.
> In 2006, nearly 140,000 square miles in the northwestern Hawaiian Islands were designated as the **Papahanaumokuakea** (Hawaiian name meaning 'a sacred name, a sacred place') **Marine National Monument.** This underwater monument is larger than all of the U.S. National Parks combined!

SLIDE 18: NOAA - http://www.noaa.gov/
NOAA history - http://www.history.noaa.gov/index.html

> The National Oceanic and Atmospheric Administration (NOAA) is a federal agency that is within the Department of Commerce. Similar to NASA, where NASA focuses on space and aeronautics, NOAA focuses on the ocean and atmosphere.
> NOAA is concerned with the conditions of our ocean and atmosphere and informing people about the changing conditions around them. NOAA's missions include:
> - Science, Service, and Stewardship.
> - To understand and predict changes in climate, weather, ocean, and coasts,
> - To share that knowledge and information with others, and
> - To conserve and manage coastal and marine ecosystems and resources.
>
> NOAA's line offices include:
> - National Weather Service
> - National Marine Fisheries Service
> - National Environmental Satellite Data, Information and Service
> - National Ocean Service
> - Office of Oceanic and Atmospheric Research
> - Office of Program Planning and Integration

http://oceantoday.noaa.gov/knowyourocean/
http://www.whoi.edu/know-your-ocean/

Earth is Blue: http://sanctuaries.noaa.gov/earthisblue.html

When you look at our planet from space, one thing is abundantly clear: ***Earth Is Blue***. Our planet is an ocean planet, and whether you live near the coast or a thousand miles from it, the ocean is part of your life. From providing the food we eat to determining our weather, the ocean matters to each of us -- and the National Marine Sanctuary System protects this vital resource.

With that in mind, the photos and videos of Earth Is Blue bring these ocean treasures directly to smartphones and computers all over the world, where they can serve as a tangible reminder that no matter where you are, the ocean and Great Lakes are in your hands. We hope these images inspire you to help care for our ocean and to spread the word that Earth isn't green -- it's blue.

SLIDES 20 – 22: Introduction to Marine Debris

What is marine debris?
Our oceans are filled with items that do not belong there. Huge amounts of consumer plastics, metals, rubber, paper, textiles, derelict fishing gear, vessels, and other lost or discarded items enter the marine environment every day, making marine debris one of the most widespread pollution problems facing the world's oceans and waterways.

Marine debris is defined as any persistent solid material that is manufactured or processed and directly or indirectly, intentionally or unintentionally, disposed of or abandoned into the marine environment or the Great Lakes. It is a global problem, and it is an everyday problem. There is no part of the world left untouched by debris and its impacts. Marine debris is a threat to our environment, navigation safety, the economy, and human health.

Learn more about marine debris through NOAA's Marine Debris Program:
https://marinedebris.noaa.gov/discover-issue

What we currently know about plastic marine debris:
https://marinedebris.noaa.gov/sites/default/files/Gen_Plastic-hi_9-20-11_0.pdf

Types and sources of Marine Debris: https://marinedebris.noaa.gov/discover-issue/types-and-sources

SLIDE 23: What are Gyres?

An ocean gyre is a large system of circular ocean currents formed by global wind patterns and forces created by Earth's rotation. - National Geographic

To learn more about types of gyres and how they form, check out:
http://www.nationalgeographic.org/encyclopedia/ocean-gyre/

These whirlpools of water attract floating pollutants, acting as an epicenter for marine debris in the ocean.
Check out 5 Gyres to learn more about the impacts of plastic pollutants in these gyres: https://www.5gyres.org/

SLIDE 24: How long until it's gone?
These numbers are a rough estimate of how long these items will remain in the environment. At the moment we truly don't know how long these stick around, but it is important to note that we do know they will be around much longer than we will.

SLIDE 25-27: What is the difference between a macroplastic and a microplastic? What are their impacts?

Microplastics are **small plastic pieces** less than five millimeters long which can be harmful to our ocean and aquatic life.

To learn more about microplastics: http://oceanservice.noaa.gov/facts/microplastics.html

Whereas, macroplastics are any plastic pieces larger than five millimeters long. Both forms of plastic pollution can be harmful to our environment. To learn more about the impacts of plastic pollutants on marine organisms, check out: http://www.cleanwater.org/problem-marine-plastic-pollution

SLIDE 28: How can plastic ingestion harm humans?

It is still unknown whether plastic pollutants can move up the food chain and onto our very own plates. However, scientists speculate that this may not be unlikely. A great informational PDF created by Nate Seltenrich goes into more detail about this uncertainty: https://ehp.niehs.nih.gov/wp-content/uploads/123/2/ehp.123-A34.alt.pdf

SLIDES 29 – 30: Where do microplastics originate from?

Plastics do not biodegrade, instead they photodegrade:
Once exposed to wave action and sunlight, large plastic pieces (such as a water bottle or floating plastic fragment) break down into smaller and smaller pieces. Specifically, when exposed the UV light and infrared radiation (from the sun) the polymer in the plastic piece becomes brittle causing it to break down into ever diminishing pieces. This process takes time, but with the abundant amount of plastics in our ocean – it doesn't take long for macroplastics to create microplastics.

The problem with plastic microbeads:
Macroplastics are not the only thing contributing to the microplastic issue. Many microplastics start out as just that – a microplastic. Plastic microbeads are microplastics that are often used in cosmetics as an exfoliator. Your toothpaste, face wash and body soaps can potentially contain these little pollutants. Due to their design, these microbeads wash down the drain and make their way to your local wastewater treatment facility. At these facilities, the microbeads make their way through the filtration system and back out into local rivers, streams and the ocean.

To learn more about the issues surrounding plastic microbeads, check out: http://storyofstuff.org/plastic-microbeads-ban-the-bead/

SLIDES 31 – 44: What can YOU do?

SEA Change: a wonderful example of how environmental education, collective action, and positive change can help to restore the health of the ocean.

What we do on land has a direct impact on our local watersheds and ocean. What can you do on land to better protect marine environments?

First, start out by learning more about what exactly "Zero Waste" means: http://zerowasteworld.org/zero-waste-faq/

For more tips on how to reduce waste at school, in your community and at home, check out the EPA's webpage on how to reduce waste in several aspects of your life:
https://www.epa.gov/recycle/reducing-waste-what-you-can-do

Make art, not trash: turning your trash into art is a great way to repurpose items that would otherwise end up in the landfill. For your students' next art project, consider using the trash on campus as their medium.

For ideas and examples of artwork, check out the following links:
http://time.com/4358434/world-oceans-day-art-marine-plastic/
http://magazines.scholastic.com/news/2016/09/Turning-Trash-Into-Art

For additional ideas on what types of activities to include in your Zero Waste Week, check out the *Students for* Zero Waste Week Activities list: http://sanctuaries.noaa.gov/education/ocean_guardian/zero-waste-week/school-activities.pdf

SLIDE 45: YOU have the power to make a change…
Students for Zero Waste Week is an excellent time to inspire your students to make a difference in the overall health of the ocean. Melati and Isabel's story is just ONE example of how students can make a difference in their community. Inspire your students to be the next example!

For more information on Melati and Isabel's story, check out their webpage: http://www.byebyeplasticbags.org/

SLIDES 46 – 51: Examples of what previous participants have executed during their Zero Waste Week

Your students' efforts can be featured on our webpage! As they celebrate Zero Waste Week, please share pictures/stories of their experiences with us.

If any pictures contain students, please be sure to have their parents sign the following photo release form:
http://sanctuaries.noaa.gov/education/ocean_guardian/zero-waste-week/photo-release-form.pdf

Scanned photo release forms can be sent via email to Alyssa Nally at alyssa.nally@noaa.gov

We look forward to seeing what your students have in store for Zero Waste Week!
Go green, think blue!