

The Ocean in the News – Content Option 2

Six articles were chosen from a variety of news outlets that focused on current issues such as mapping the sea floor, mining, fishery, pollution, and conservation of our ocean. These mainstream articles raise ocean literacy levels could protect marine environment. Most of the 7 principles of ocean literacy are integrated into these articles.

Antarctica is Melting Three Times as Fast as a Decade Ago

By Kendra Pierre-Louis

June 13, 2018

Between 60 and 90 percent of the world's fresh water is frozen in the ice sheets of Antarctica. If all the ice melts it would be enough to raise the world's sea levels approximately 200 feet. The rate at which Antarctica is losing ice has tripled since 2007. Scientist say that this will contribute to 6 inches (15 centimeters) to sea level rise by 2100. Flooding will rise in areas such as Brooklyn which typically floods once a year to 20 times a year if the levels rise to 15 centimeters. Between 1992 and 2017 Antarctica has shed at least three trillion tons of ice this has led to an increase in sea levels. Greenland has lost an estimated loss of one trillion tons of ice between 2011 and 2014. As our oceans warm the waters expand and occupy more space consequently sea levels have risen. This melting of ice and warmer waters have all been driven by human emissions of green house gases. Some claim that parts of Antarctica appear to have made gains. Satellites have been used to prove conclusively that Antarctica is losing ice/mass.

This article relates to *Ocean Literacy and The Essential Principles and Fundamental Concepts of Ocean Sciences* in many ways. The following Principles and fundamental concepts are covered in this article (1.) The Earth has one big ocean with many features. (d)The seas level changes as ice caps on land melt or grow. It also changes as sea water expands and contracts when ocean water warms and cools. (2.) The ocean and life in the ocean shape the features of the Earth. (b) Sea level changes over time have expanded and contracted continental shelves, created and destroyed inland seas, and shaped the surface of land. (3.) The ocean is a major influence on weather and climate. (a) The ocean controls weather and climate, (e) the ocean dominates the Earth's carbon cycle, (f) The ocean has had and will continue to have an influence on climate change. (6) The ocean and humans are inextricably interconnected. (e)Humans affect the ocean in a variety of ways. (f) Coastal regions are susceptible to natural hazards, and (g) Everyone is responsible for caring for the ocean.

https://www.nytimes.com/2018/06/13/climate/antarctica-ice-melting-faster.html?ref=collection%2Ftimestopic%2FOceans&action=click&contentCollection=science®ion=stream&module=stream_unit&version=latest&contentPlacement=1&pgtype=collection

Oxygen Levels in Oceans Are Dropping Dangerously

By Jeff Nesbit, Contributor Jan. 26, 2018, at 5:12 p.m.

According to a study published in *Science* where a comprehensive look at “dead zones” have increased four times and “low oxygen zones” have increased ten times since the 1950’s. These areas are now more than 12 million square miles of ocean and extend as much as 200 meters below sea level. Much of this is caused by climate change and industrial pollution. This study was conducted in part with the UN’s Global Ocean Oxygen Network. This reduction in the ocean’s oxygen not only affects the species in those “low oxygen zones” but could possibly cause entire ecosystems to collapse. There seems to be a lack of concern for the ocean oxygen levels when compared to oxygen levels in cities (i.e. Beijing or Los Angeles). These oxygen levels are detrimental to the oceans but also ultimately land organisms.

While reading this article there are definite connections to *Ocean Literacy and The Essential Principles and Fundamental Concepts of Ocean Sciences* from (1) The Earth has one big ocean with many features, (h) the ocean is finite, and resources are limited. (4) The ocean makes Earth habitable. (a) Most of the oxygen in the atmosphere originally came from the activities of photosynthetic organisms in the ocean. (6) The ocean and humans are inextricably interconnected (a) The ocean affects every human life. It supplies freshwater, and nearly all Earth’s oxygen. (g) Everyone is responsible for caring for the ocean.

<https://www.usnews.com/news/at-the-edge/articles/2018-01-26/oxygen-levels-in-oceans-are-dropping-dangerously>

Striving To Reduce Ocean Pollution, EU Proposes Ban Of Everyday Plastic Items

By Dominique Mosbergen 05/29/2018 07:21 am ET Updated May 29, 2018

The European Union (28 countries) have proposed a ban to eliminate 10 single use everyday plastic items (cotton buds/Q tips, plastic cutlery, balloons/sticks, food containers, cups, beverage containers, cigarette butts, bags, crisp packets/candy wrappers, and wet wipes). The EU have targeted the top 10 plastic products most often found on European beaches. According to the European Commission 500,000 tons of plastic waste ends up in the seas every year. Once these new rules have been enacted there will be numerous economic and environmental benefits. By 2030 consumers will see the benefits from saving 7.6 billion per year, a substantial number of jobs will be created, as well as environmentally 3.7 million carbon dioxide emissions would be avoided. There is expected “push back” from the plastics industry to the proposed ban of single use items.

The connections to *Ocean Literacy and The Essential Principles and Fundamental Concepts of Ocean Sciences* relate to the following principles and fundamentals (6) The ocean and humans are inextricably interconnected. (c) The ocean is a source of inspiration, recreation, rejuvenation, and discovery. (e) Humans affect the ocean in a variety of ways. Human development and activity leads to pollution. (g) Everyone is responsible for caring for the ocean.

https://www.huffingtonpost.com/entry/eu-single-use-plastic-ban_us_5b0cecc8e4b0fdb2aa561ef8

Even The Bottom Of The World's Deepest Ocean Trench Is Not Safe From Plastic Bags

By Dominique Mosbergen 05/14/2018 09:16 am ET

A single-use plastic bag was recently found at a depth of almost 36,000 feet in the Mariana Trench, this trench is the deepest part of the world's ocean. Scientist say it's the world's deepest known piece of plastic trash. Researchers have used data and videos from nearly 5,000 dives over the course of 30 years and have found trash clogging deep-sea environments including the Japan Trench, deep-sea areas in the Indian, Pacific and Atlantic oceans. Plastic debris can be in oceans all over the world. Scientist say that from these videos/images 3,400 pieces of debris recorded one third is plastic and of that 89 percent is single-use plastic items. In environments deeper than 19,000 more than half of the debris logged is plastic. The debris is harming organisms from entangling them to burying them. Every year approximately 19 billion pounds of plastic enters our oceans and single-use plastic is considered the main culprit. With all this garbage entering our ocean public concern has mounted as well as state, and national governments are pushing for improved regulation. In 2015, Hawaii was the first state to ban plastic bags. California soon followed with this ban and New York is considering restrictions. The European Union has recently announced a plan to ban the sale of single-use plastics earlier this year.

The connections to *Ocean Literacy and The Essential Principles and Fundamental Concepts of Ocean Sciences* are many from the principles that (1) The Earth has one big ocean with many features. (h) The ocean is large, it is finite, and resources are limited. (6) The ocean and humans are inextricably interconnected. (c) The ocean is a source of inspiration, recreation, rejuvenation, and discovery. (e) Humans affect the ocean in a variety of ways. Human development and activity leads to pollution. (g) Everyone is responsible for caring for the ocean.

https://www.huffingtonpost.com/entry/plastic-bag-deepest-ocean-mariana-trench-deep-sea-pollution_us_5af95668e4b032b10bfc4664

3 Incredible Inventions That Are Cleaning Our Oceans

By Carla Herreria 06/08/2017 08:31 am ET Updated Jun 09, 2017

Plastics, chemical and oil spills are polluting beaches, killing marine animals and poisoning our seas. Three inventions stand out in making a difference. The sea bin created by 2 Australian surfers is a bucket with a pump and water filtration system that is designed to suck in debris. The bucket includes an optional oil and water separator system that will pull oil out of the ocean then spit out cleaner water through the other side of the pump. This technology is already at work in California and Finland. The second invention is from Boyan Slat a teenager who developed a plan to clean up the trash located between California and Hawaii. In just 3 years Slat's organization The Ocean Cleanup has raised 31.5 million dollars to develop a drifting V-shaped system designed to collect plastic pollution at the ocean's surface as the current pushes it along. In May 2017 Slat released an updated prototype that would begin work the following year. The last groundbreaking invention is from a British recycling company executive and a team of engineers. They have created a machine to break down a variety of plastic products and turn them into energy producing oil.

The connections to *Ocean Literacy and The Essential Principles and Fundamental Concepts of Ocean Sciences* are many from the principles that (1) The Earth has one big ocean with many features. (h) The ocean is large, it is finite, and resources are limited. (6) The ocean and humans are inextricably interconnected. (c) The ocean is a source of inspiration, recreation, rejuvenation, and discovery. (e) Humans affect the ocean in a variety of ways. Human development and activity leads to pollution. (g) Everyone is responsible for caring for the ocean.

https://www.huffingtonpost.com/entry/inventions-that-clean-the-ocean_us_5938be94e4b0b13f2c66ee01

The Deep Sea May Soon Be Up for Grabs

By Julie Packard and Chris Scholin June 8, 2018

As pollution, overfishing and climate change sap the productivity of surface waters many countries and companies are scouting new territory and deeper parts of the ocean. These areas are rich in marine life, gems, metals, minerals and ore. With an estimated 10 billion metric tons of marine life including fish, shrimp, and squid, the depths offer a huge endless bounty of resources. Nations are looking at this region of the sea, the Mesopelagic known as the twilight zone, harvesting just one percent of this zone would double overall fisheries catch. Beyond this area is the sea floor 71 percent of Earth's surface and only 15 percent of it has been mapped. We know more about the surface of Mars, this area appears to contain precious metals, rare earth minerals, and ore-resources that have tremendous commercial value. De Beers, the world's largest diamond producer recently spent 157 million on a vessel that will search 2,300 square miles of the Atlantic Ocean seafloor just off the coast of Namibia for gems and vacuum up what it finds.

The International Seabed Authority which regulates deep-sea mining has recently allowed companies from dozens of countries to explore for minerals in the Clarion-Clipperton Zone, a region of the Pacific Ocean extending from the west coast of Mexico to Hawaii that contains deposits of nickel, manganese, copper, zinc, cobalt, and other minerals.

Marine scientist and engineers are busy using sonar, manned submersibles as well as ROVs and AUVs and drones to map the oceans sea floors to protect these fragile environments from exploitation.

The connections to *Ocean Literacy and The Essential Principles and Fundamental Concepts of Ocean Sciences* are many from the principles that (1) The Earth has one big ocean with many features. (h) The ocean is large, it is finite, and resources are limited. (6) The ocean and humans are inextricably interconnected. and discovery. (e) Humans affect the ocean in a variety of ways. Human development and activity leads to pollution. (g) Everyone is responsible for caring for the ocean. (7) The ocean is largely unexplored. (a) The ocean is the last and largest unexplored place on Earth -less than 5 percent has been explored. This is the great frontier for the next generation's explorer and researchers, where they will find great opportunities for inquiry and investigation. (c) Over the last 40 years, use of ocean resources has increased significantly, therefore the sustainability of ocean resources depends on our understanding of those resources and their potential and limitations. (d) New technologies, sensors and tools are expanding our ability to explore the ocean. (f) Ocean exploration is truly interdisciplinary.

https://www.nytimes.com/2018/06/08/opinion/the-deep-sea-may-soon-be-up-for-grabs.html?ref=collection%2Ftimestopic%2FOceans&action=click&contentCollection=science®ion=stream&module=stream_unit&version=latest&contentPlacement=3&pgtype=collection

References:

http://www.coexploration.org/oceanliteracy/documents/OceanLitConcepts_10.11.05.pdf