

<https://www.usnews.com/news/news/articles/2024-04-15/scientists-say-coral-reefs-around-the-world-are-experiencing-mass-bleaching-in-warming-oceans>

- **Scientists say coral reefs around the world are experiencing mass bleaching in warming oceans.**

A) This article discusses the impacts of water temperatures rising in our oceans. Coral bleaching occurs when temperatures become too high and coral releases symbiotic algae causing them to turn white. The article discusses how this is like a fever in humans. If we do not treat the fever, we will die. The same goes for coral. This can cause massive and permanent damage to the ecosystems and inhabitants that rely on the coral for survival. The article states that 90% of Australia's Great Barrier Reef was affected by bleaching in 2022. Ocean literacy's essential principles and fundamental concepts cover seven principles all should be familiar with. This article is directly related to the ocean literacy education that is needed around the world as well as essential principles 1-6. Coral reefs are pivotal to human life. They play a huge role in oxygen production and shape weather patterns around the globe (principles 1,2,3,4,6). The article mentions the effect bleaching has on ecosystems and life that is dependent on coral reefs (principle 5). Overall, the article is set to educate others on the impacts of coral bleaching and how these can be long-term and take years to recover if it is capable.

B) Ocean literacy is imperative for a case such as coral bleaching. As an individual who is willing to become ocean literate and wants to preserve our oceans, this article pushed me to further my research on the impact coral has on human life. The article mentions the importance of coral but does not go into specifics. Being ocean literate, especially about coral, can motivate individuals to research the impact coral makes outside of the ocean. I was not familiar with coral's role on Earth, but now can recognize the message from the article. Selina Stead, a marine biologist in the article said the world must work to reduce carbon emissions. Being ocean-literate, like Selina Stead, can help members of the public understand what is needed to be done to reverse the coral bleaching occurring in our oceans. Though this is not at a global scale, because it is not occurring in all of our major oceans, it is moving in that direction, and being ocean-literate can help reverse coral bleaching.

<https://www.usnews.com/news/us/articles/2024-04-11/scientists-are-grasping-at-straws-while-trying-to-protect-infant-corals-from-hungry-fish>

- **Biodegradable straws could prevent new coral from becoming expensive fish food.**

A) This is another article related to coral, but how biodegradable straws can protect lab-grown coral from being eaten by predatory fish. The article states that coral takes up less than 1% of our ocean but provides food and shelter for 25% of life. A researcher named

Kyle Pisano developed a Coral Fort with biodegradable drinking straws that have boosted the survival rate of transplanted coral to over 90%. The article focuses on principles 4,5 and 6. Researchers and scientists are working to support the diversity of life and ecosystems in coral reefs. Not only does this support life in coral reefs, but also throughout the ocean with species that rely on those living in coral reefs. This also supports humanity by creating more coral to produce oxygen for life above the earth. Coral is interconnected with life in the ocean and outside of it. The company Reef Fortify (created by Kyle Pisano) is hoping to work with reef restoration projects all over the world. These biodegradable straws help cut efforts of removing cages in half which allows for more placement of coral and less work for researchers to remove their protective cages. They hope to speed up the process of coral restoration.

- B) Ocean-literate individuals can be the next ones to invent something like Kyle Pisano. He took biodegradable boba straws and has developed protection for coral that is over 90% effective. He took an everyday item (straws) and was able to use them to protect the life of new, lab-grown coral. Looking through an ocean-literate lens can help individuals with creative ways to support our ocean, just as Kyle did. Using Kyle's story, members can see the impacts of protecting coral for ocean and land survival. One simple idea can be taken by an ocean-literate individual and grown into an effective way to restore coral.

<https://www.newsweek.com/new-species-discovered-underwater-mountains-easter-island-1890258>

- **Scientists discover 50 new deep-sea species near Easter Island.**

- A) Scientists have discovered over 50 new deep-sea species near Easter Island. The new species found include coral, fish, sea urchins, and mollusks. One of the species found was a wrinkle coral which set a new record for the deepest-ever photosynthesis-dependent animal in the world! Their research spanned an 1800-mile chain of underwater mountains. Essential principles 1 and 7 fall within this article. The vast underwater mountain ranges are one of the many features individuals do not hear about or see every day. So much of the ocean is not explored. This article shows how much can be discovered in a small, unexplored, patch of the ocean. The article continues with the need to preserve this newfound life. I recognized these two principles the most in this article, especially principle 7.
- B) Ocean-literate individuals can help members of the public understand the need to preserve these new creatures found in underwater mountain ranges near Easter Island. These creatures could provide researchers with new scientific discoveries that could benefit society. Keeping these creatures safe could lead to new discoveries in medicine, food, energy, and inventions that could mimic the adaptations of those animals. Educating members to work together to preserve these new findings can lead to scientific advances in many areas that impact human life.

<https://www.independent.co.uk/climate-change/news/pacific-ocean-garbage-patch-plastic-b2321349.html>

- The Great Pacific Garbage Patch is so large that tiny creatures are making it home.
- A) This article describes the Great Pacific Garbage Patch. Many individuals believe it is an island of plastic debris, but the article continues by describing it partly consists of microplastics. It educates individuals by describing its size, weight, and location. As this patch gets larger, tiny coastal species such as crabs, sea anemones, and minuscule invertebrates are surviving and reproducing in the Great Pacific Garbage Patch. It is acting like a life raft for creatures. This is fundamentally altering oceanic communities and ecosystems. Principles 1,4,5 and 6 are related to this article. The garbage patch is slowly becoming a feature of the ocean where it has no business being a part of it (P1). Debris is creating habitats for species in a way that could negatively impact ecosystems making Earth less habitable (P4). The ocean must support a great diversity of life and ecosystems, not a giant batch of plastic debris (P5). The ocean and humans are connected. The ocean is positively connecting with humans. We are creating stress and altering the ocean in negative ways (P6).
- B) The ocean-literate individuals who wrote this article do many things to help better understand the issue. They provided data describing the size of the Great Pacific Garbage Patch. They stated that the garbage patch weighs more than 500 jumbo jets and is twice the size of Texas. Ocean literacy helps individuals provide information in a way that is understandable to all. The article delivers a message that more must be done to prevent this patch. It states that it estimates \$175 billion each year to protect the global ocean but between 2015 and 2019 only \$10 billion was invested. They hope to motivate individuals to use less plastic, recycle, and support companies that are working to keep our oceans clean, such as The Ocean Cleanup.

<https://www.cnbctv18.com/india/environment/india-advocates-for-region-specific-ocean-observations-at-2024-ocean-decade-conference-19399767.htm>

- India advocates for region-specific ocean observations at 2024 Ocean Decade Conference.
- A) In this article, Indian Earth Sciences Secretary M Ravichandran urged, at the Indian Ocean Regional Decade Conference and Barcelona conference, the integration of observation systems across platforms to combat challenges posed by climate change. He pushed for NGOs to be a part of the conversation to bring traditional knowledge of deep-sea ecosystems. Through the involvement of NGOs, local communities, and industry partners this knowledge of ocean literacy can help with ocean resilience. This article aligns with every principle of ocean literacy. Secretary Ravichandran notices the impact climate change is having and wants to get everyone involved. He is pushing to work with other ocean-literate individuals to educate those who are not familiar with ocean literacy.

B) Being ocean-literate can help other members of the public support companies, leaders, and researchers to shift climate change. A lot has changed since I was a child growing up and climate change is a huge part of discussion nowadays, whereas before people didn't have enough proof. Our oceans hold a lot of proof that our climate is changing for the worse. Secretary Ravichandran is pushing for more education on ocean literacy and to work together with experts in all fields. He wants experts from NGOs, local communities, and legislators to work together to support coastal resilience. Members of the public can be more motivated to see individuals from different backgrounds working together to achieve the same goal.

<https://www.usaid.gov/news-information/press-releases/apr-17-2024-usaid-announces-commitments-protect-our-ocean-2024-our-ocean-conference>

- USAID Announces commitments to Protect our ocean at the 2024 Our Ocean Conference.

A) The USAID had a press release that discussed funding to conserve and protect our ocean at the 2024 Our Ocean Conference in Athens, Greece. They announced more than \$103 million in funding for several new programs and ongoing projects that strengthen marine preservation, build resilience, and address the impacts of climate change. The ocean provides food, jobs, and environmental benefits that can be drastically impacted if things do not change. The article breaks down some of the financial efforts. \$19.2 million is going to promote marine protected areas. \$9.9 million to foster sustainable blue economies in Central America, the Caribbean, and Africa. \$6.7 million to advance sustainable fisheries by educating and promoting better practices and conservation efforts. \$4.8 million is going to combat climate change through youth projects in the Pacific Islands. These efforts align with all the principles of ocean literacy. Funding is going to support the features of our ocean, making the earth more habitable, protecting and conserving the diverse life within the ocean, and working to keep us more connected with our ocean. Though there is still much work to be done, the USAID is taking steps in the right direction to combat the negative effects humans have on our oceans.

B) Ocean-literate people, like that in USAID, are working to educate individuals on being more ocean-literate. Funding is going to teach fishermen safer and more effective ways to properly fish. They are getting the youth involved with programs that teach ocean literacy. With the works of ocean-literate individuals, more education can be spread throughout different communities. These communities can better understand the impact we have on the oceans and ways to preserve and rebuild what has already been damaged. This education is imperative in changing the habits of those who are not aware of their impact. The promotion of better fishing practices is one way to help others become more aware of their practices and ways to change their normal habits.