

Lesson 4 Act Now for Our Oceans!

The Guardian of the Blue Heart of the Planet

When most people were fascinated by the mysteries of exploring space, one remarkable individual appreciated the appeal of the ocean before many others, and eagerly explored the deep ocean. When people asked her, "Isn't it scary down there?" she would reply, "What's there to be afraid of? When I go down there, I delight in the life that I see." Long before others, this person recognized that not only is the ocean full of life, but that it also needs to be protected. She is the legendary marine biologist named Sylvia Earle.

Sylvia Earle was born in 1935 in New Jersey. Having moved to Florida at the age of twelve, she began exploring the beaches and observing the diverse marine life of the Gulf of Mexico. On her first birthday in Florida, her parents gifted her a pair of swimming goggles, perfect for someone who loved the ocean. Her father encouraged her, saying, "These will help you with your underwater explorations. Now all you have to do is dive in." With her goggles, Earle gained a clearer view of the ocean's wonders.

At 17, she took her first deep dive, descending 10 meters in a lake wearing the diving suit that belonged to her friend's father. Earle was thrilled to observe fish while breathing naturally underwater. As Earle experienced the excitement of diving, her desire to explore grew, and she eventually became one of the first marine scientists to use scuba equipment. Her innate sense of adventure and curiosity guided her academic journey, ultimately leading her to become a pioneer in ocean exploration and conservation.

Sylvia Earle's love for the ocean fueled her desire to explore further. In 1969, the same year astronauts first stepped on the moon, the Tektite Project allowed scientists to live in underwater habitats situated in the Virgin Islands. However, Earle was unable to participate in the project. "The people in charge just couldn't cope with the idea of men and women living together underwater," she said. The following year, having been chosen to lead the all female Tektite II Project, she spent two weeks living 15 meters beneath the ocean's surface, along with four other oceanographers. She pushed the boundaries of underwater exploration and challenged gender stereotypes.

Earle's residence on the reef allowed her to observe and understand the complexities of the ecosystem. Her scientific findings were published, including the biology of coral reef fishes. The all female Tektite II crew became heroes upon their return to Earth's surface, receiving attention similar to that of the astronauts' historic moon landing.

In 1979, Sylvia Earle accomplished a historic achievement off the coast of Oahu, Hawaii. Using the JIM suit, she dove 381 meters deep and walked on the ocean floor unattached for two hours. It was marked as the world's deepest solo dive at that time. It earned her the title "Her Deepness." As she descended, Earle was charmed by the glowing creatures that flashed like stars against the darkness. Among them were some species she had studied but never seen before, such as the deep sea squid that emits a glowing liquid to defend itself.

During the dive, Earle planted a flag on the seafloor to symbolize the significance of ocean exploration in comparison to space exploration. She associated the moment with Neil Armstrong's first steps on the moon and noted "These accomplishments had a few parallels.

The modern world had two 'final frontiers' yet to explore: deep space and the deep ocean." Her achievement in Hawaii was one small step towards the day when human beings would come to know and respect the vast world of life underwater.

Earle was appointed the first female chief scientist at the National Oceanic and Atmospheric Administration (NOAA) in 1990. She aimed to shift NOAA's focus from exploiting the ocean's resources to prioritizing ocean research and conservation. Despite her efforts, Earle, as a senior official of the government, faced restrictions on her freedom of speech and action. Therefore, she resigned two years later to become a more active environmental activist. Returning to the private sector granted Earle the freedom to express herself. Through her work in science and technology businesses, public lectures, and writing books and articles for the mass media, Earle has been able to use her expertise and experience to campaign for the ocean's conservation.

Earle has committed herself to a lifetime of raising public awareness about the importance of the ocean. In 2009, her efforts gained prominence through three key events. She played an important role in initiating a global digital platform, which allows users to explore underwater worlds virtually, fostering appreciation for marine ecosystems. She was also awarded the TED Prize, a distinguished annual award that grants winners a wish to change the world, along with financial support.

Earle's wish was to create a global network of marine protected areas, or "Hope Spots," which serve as refuges from pollution, overfishing, and other threats. Finally, this wish led her to establish Mission Blue, a non-profit organization that aims to inspire action to explore and protect the ocean. Since its establishment, protected ocean areas have increased from less than 1% in 2009 to approximately 8% in 2023. Mission Blue's goal is to protect 30% of the ocean by 2030, in line with the International Union for Conservation of Nature's recommended target for maintaining ocean health.

For Earle, Mission Blue represents not only an organization, but also a movement, driven by a shared passion for the ocean and dedication to its preservation. As an oceanographer, author, and lecturer, she consistently inspires individuals to acknowledge the ocean's significance. Earle said, "Since the 1980s, about half of the world's coral reefs have disappeared. Ten percent of the sharks remain. They are not all gone. However, there is hope of preserving endangered marine species. There are more whales and turtles today than when I was young because most nations are protecting them from harm." Although humans are largely responsible for many of the stresses on the ocean, Earle believes that we also have the power to ensure its survival. Earle reminds us of the importance of the ocean by saying, "If you think the ocean isn't important, imagine Earth without it. No ocean, no life."

With over 7,000 hours underwater and more than 100 expeditions, Sylvia Earle has made significant contributions to the field of marine science. Her lifelong journey will undoubtedly continue to inspire future generations to protect and preserve the ocean, the blue heart of the planet.

4과 Further Reading

The Ocean: A Key to Solve Climate Change

Climate change is causing significant harm to the ocean, increasing its temperature and acidity.

However, recent scientific insights position the ocean not merely as a victim, but as a potential remedy to this global crisis. Covering 70% of Earth, the ocean plays an essential role in capturing carbon dioxide from the atmosphere. For thousands of years, marine ecosystems like kelp forests and marshes have been found to exceed plants on land in trapping and storing carbon. According to Dr. Carlos Duarte, a marine expert, the ocean holds 16 times more carbon than the land. This captured carbon is commonly known as "blue carbon," absorbed from the atmosphere and stored in the ocean. Blue carbon is mainly carbon dioxide that has dissolved directly in the ocean. While "black carbon" is a harmful material produced by burning fossil fuels and a significant contributor to climate change, blue carbon is stored in the ocean, preventing global warming.

Nevertheless, the ocean's ability to perform this planet saving function depends on its health. Dr. Duarte and his team propose a practicable action plan to restore ocean health and aid in the planet's decarbonization. Their urgent recommendations include protecting at least 30% of the ocean by 2030, rethinking industrial fishing practices, restoring damaged ecosystems like mangroves and coral reefs, and reducing pollution entering the sea. By prioritizing ocean health, we can unlock its potential as a remedy to climate change and work towards a more sustainable future.