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STANDARDS

- **CCSS**: RI.6.8-8.8, RST.6-8.1, RST.6-8.8, RST.6-8.10, SL.6.1-8.1, SL.6.4-8.4, SL.6.5-8.5, WHST.6-8.8, WHST.6-8.9; RST.9-10.1, 2, 4, 5, 7, 8, 10; RST.11-12.1, 2, 4, 10; RI.9-12.8, SL.9.1-12.1, SL.9-12.4, SL.9-12.5, WHST.9-10.8, WHST.11-12.8, WHST.9-10.9, WHST.11-12.9
- **NGSS**: MS-LS2-3, MS-LS2-4, MS-LS2-5; HS-LS2-7, HS-LS-4.D, HS-ESS3-3, HS-ESS3.C, HS-ESS3.D, HS-ETS1.A-B, HS-ETS1-2, HS-ETS1-3
- **NGSS Practices**: 6, 7, 8
- **OLP**: (grades 6-8): 5.A.1, 5.A.3, 5.A.4, 5.A.6, 5.A.16, 5.A.21, 6.A.1-A.11, 6.B.1-B.4, 6.C.1-C.4, 6.D.1-6.D.21, 6.E.1-6.E.15; (grades 9-12) 6.A.1, 6.A.3-A.6, 6.B.1-B.6, 6.C.1-C.3, 6.D.1-D.19, 6.E.1-.14

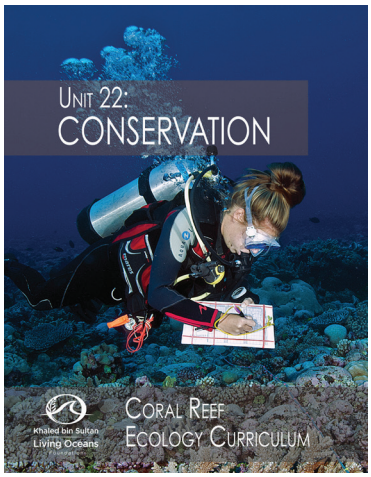
ONLINE CONTENTS

- *My Wish: Protect Our Oceans* Dr. Syvia Earle discusses the rapid decline of the ocean and the need for more protection.
- *Corals and MPAs* Learn about Marine Protected Areas and how they can help protect coral reefs.

CONSERVATION

This lesson is a part of the *Conservation* unit, which describes different actions that people can take to manage and conserve coral reefs. Below is a summary of what is included in the entire unit.

UNIT CONTENTS



A. Background Information
   - Introduction
   - Mitigating Threats
   - Stakeholder Involvement
   - Education & Outreach
   - Monitoring
   - Enforcement
   - Restoration

B. Lessons

Watch It! My Wish
- A worksheet to accompany the *My Wish: Protect Our Oceans* video

Watch It! Corals and MPAs
- A worksheet to accompany *Our Living Oceans, Episode 5: Corals and MPAs* video.

Lesson 1A: Explore a Hope Spot
- An activity that explores an existing Hope Spot. Students learn about ecosystem disruptions and services, and the reasons that make this place special.

Lesson 1B: Nominate a Hope Spot
- An activity where students nominate a new Hope Spot that needs protection. Students present their proposed Hope Spot to their classmates who act as the "Hope Spot Council," deciding if it should be approved.

Lesson 1C: Advocate for MPA
- Write a compelling letter that advocates for the creation of their proposed MPA to a stakeholder or group of stakeholders.

Lesson 1D: Manage an MPA
- An activity that creates a management plan for the three most important actions that are crucial to conserve their proposed MPA.

Read It! Maori Conservation
- A worksheet to accompany the *Traditional Māori Conservation Methods Help Protect Reefs in the Cook Islands* blog.

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WATCH IT! MY WISH

INSTRUCTIONS: Watch *My Wish: Protect Our Oceans* Ted Talk video (*https://bit.ly/MyWishEarle*). On this website, there are scripts offered in 31 languages. Answer the following questions.

1. List three of Sylvia Earle's accomplishments as an ocean explorer.

2. What are some of the life-support systems that astronauts and aquanauts need to survive?

3. Dr. Earle explains that no matter where we live, we are connected to the sea. What benefits do we receive from the ocean?

4. There are many ways that the ocean is threatened by people. Dr. Earle provides several examples. Describe three.

5. Scientists also saw threats to land ecosystems. How did the United States begin protecting the land?

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WATCH IT! My Wish

6. Are there similar protections for the ocean?

7. How much of the ocean was protected at the time of this film (2009)?

8. What is Dr. Sylvia Earle's wish?

9. Throughout the talk, Dr. Earle refers to the ocean as the "blue heart" of the planet. What does she mean?

10. After listening to Dr. Earle's talk, do you think that there are unlimited resources in the ocean? Explain.

11. List five ways that people can protect the ocean.

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WATCH IT! My Wish

INSTRUCTIONS: Watch *My Wish: Protect Our Oceans* Ted Talk video (*https://bit.ly/MyWishEarle*). On this website, there are scripts offered in 31 languages. Answer the following questions.

1. List three of Sylvia Earle's accomplishments as an ocean explorer.
   - **1970: led a team of aquanauts who lived underwater for a week**
   - **1979: Walked the ocean floor while using a personal submersible called "Jim"**
   - **Dove in 30 different kinds of submarines**
   - **Started three companies and a non-profit called Deep Search**
   - **Led a National Geographic organization called the Sustainable Seas expedition**

2. What are some of the life-support systems that astronauts and aquanauts need to survive?
   Water, air, food, and temperature

3. Dr. Earle explains that no matter where we live, we are connected to the sea. What benefits do we receive from the ocean?
   - **Most of the oxygen in the atmosphere is generated by the sea.**
   - **The planet's organic carbon has been absorbed and stored in the ocean.**
   - **The ocean drives climate and weather, stabilizes temperature, and shapes Earth's chemistry.**
   - **Water from the sea forms clouds that return to the land and the seas as rain, sleet, and snow.**
   - **The ocean provides a home for many different organisms.**

4. There are many ways that the ocean is threatened by people. Dr. Earle provides several examples. Describe three.
   - **We produce excess carbon dioxide that is not only driving global warming, but also changing ocean chemistry, making the sea more acidic.**
   - **We're putting hundreds of millions of tons of plastic and other trash into the sea.**
   - **We discard millions of tons of fishing nets and other gear into the ocean that continues to kill organisms.**
   - **We're overfishing by taking out hundreds of millions of tons of wildlife from the ocean.**
   - **By overfishing, we undermine food chains that shape planetary chemistry and drive the carbon cycle, the nitrogen cycle, the oxygen cycle, and the water cycle.**
   - **We're still killing endangered animals such as bluefin tuna.**
   - **We kill large oceanic fish using long lines, with baited hooks every few feet that may stretch for 50 miles or more.**
   - **We use industrial trawlers and draggers to scrape the sea floor like bulldozers, taking everything in their path.**

5. Scientists also saw threats to land ecosystems. How did the United States begin protecting the land?
   In 1872, the United States established the national park system.

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WATCH IT! My Wish

6. Are there similar protections for the ocean?
   Yes, the ocean is protected in a similar way. Globally the ocean is also protected through Marine Protected Areas (MPAs) and other parks in the sea, such as National Marine Sanctuaries in the United States.

7. How much of the ocean was protected at the time of this film (2009)?
   Less than 1% of the ocean was protected in 2009.

8. What is Dr. Sylvia Earle's wish?
   She wants to ignite public support for a global network of marine protected areas to ensure the health of our ocean, and in turn, the survival of humans.

9. Throughout the talk, Dr. Earle refers to the ocean as the "blue heart" of the planet. What does she mean?
   The Earth's surface is covered by approximately 70% water. As Dr. Sylvia Earle states in her talk, the ocean is the Earth's life support system because it drives all major global systems that makes Earth habitable. It shapes our climate and weather. Every second breath we take is created from creatures in the ocean. Carbon is absorbed and stored in the ocean. It also provides a home for many different organisms. We need a healthy ocean to survive.

10. After listening to Dr. Earle's talk, do you think that there are unlimited resources in the ocean? Explain.
    Students' answers will vary; however, they should understand that the ocean does not have infinite resources. Examples from the talk could be provided. For example, the oceans have been depleted of more than 90% of the large fish in the ocean. Other resources are encouraged when answering this question.

11. List five ways that people can protect the ocean.
    Students' answers will vary. Again, it is suggested that students use other resources to answer this question. A list of suggested actions can be found in *Lesson 2A: Explore a Hope Spot* in *Table 1*.