



Khaled bin Sultan
Living Oceans
Foundation

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. Sylvia 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](#)

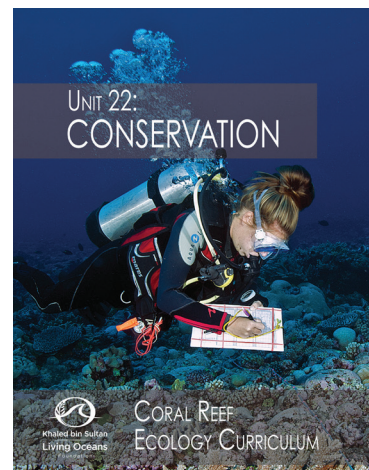
- Write a compelling letter that advocates for the creation of their proposed MPA to a stakeholder or group of stakeholders.

[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.



BACKGROUND INFORMATION

Once your Hope Spot becomes a Marine Protected Area (MPA), the difficult work begins. Actions must be taken to preserve and protect the MPA from current and potential threats. These actions are outlined in a **management plan**, a document that guides and controls the management of the protected area over a set period of time (e.g., 5, 10, 20 years). The plan should include realistic objectives that can be attained. A budget (cost and resources needed), timeline, parties involved, actions, and evaluating the identified actions are also components of the plan.

Here is a list of potential actions that can be taken to ensure that the MPA is safeguarded:

- **Promotion, outreach, and awareness:** Help everyone understand the purpose of your Hope Spot, so that they can aid in protecting and conserving it. Consider how to best promote the successes and remaining challenges of the Hope Spot. Ideas may include but are not limited to forming partnerships with other organizations, collaborating with other Hope Spots, and developing media (photography, films, social media, websites, etc.). It is also important to engage in direct outreach with stakeholders to listen their feedback (negative or positive) regarding the MPA. This could occur one-on-one or via stakeholder meetings. What people or groups do you need to provide this outreach and awareness (e.g., government, general public, fishers)?
- **Improving the management of your Hope Spot:** Once your Hope Spot is established, you will need to decide how you will manage it. Management plans must often balance the relationship between humans and nature. What types of human activities are taking place in your Hope Spot? Are any of those activities causing damage? Many times, management plans include one or more of the following items: reducing threats, involvement of the people using the resource, education and outreach, monitoring, enforcement, and restoration. What types of things would you include in your management plan to tackle day to day issues on your Hope Spot or support the implementation of the existing plan?
- **Monitoring and enforcement:** You will need to come up with a monitoring plan that uses standardized tools and methods to assess how well your Hope Spot is being protected. This can range from specific studies on species, to surveys and observations, repeated year after year. What aspects of your Hope Spot do you need to monitor to show success? For example, you decided that no fishing was allowed in the Hope Spot so that you could increase the number of all fish species. Did the number of all fish species increase? Once a new regulation is implemented, how will you enforce this regulation? Using the previous “no fishing” example, how will you ensure that people do not fish in your Hope Spot? You will need to decide how you will enforce regulations and laws in your Hope Spot. Will you need to hire enforcement officers (e.g., park ranger, game warden, fisheries officer)? If so, how many will you need? Where will they be located?
- **Science, research, and exploration:** What scientific surveys, studies, and/or exploration would support the protection of your Hope Spot? How and when will they be carried out? Who would conduct these surveys, studies, and explorations? What type(s) of information would you have to collect (e.g., determine the species, number of species, types of pollution)?
- **Government engagement:** Governments have the legal authority to put laws and policies in place that will protect your Hope Spot. Create a strategy to engage government and gain support for the actions necessary to protect your Hope Spot.
- **Industry support and engagement:** Create a strategy to engage local industry and gain their support for the agreed-upon actions. This can include creation or expansion of no-take areas, local vendors to cease selling sunscreens that are not coral-friendly, working with local eco-tourism operations on getting the message to the community.
- **Community engagement:** You don't have to protect the Hope Spot alone. Make sure to engage your community, so that they too will want to help protect your Hope Spot. Create a strategy and plan to engage

the community. Assess what the best options are for doing this. What groups make up the community (e.g., fishers, farmers, tourism, boaters, government, indigenous communities, conservationists)? What are the best ways to involve them? You could create citizen science programs, engage with local clubs and associations, and/or hold meetings and write newsletters that provide updates about the newest scientific discoveries. Keep in mind that multiple strategies must often be implemented because not everyone will be interested in the same activities.

- **Education:** Chances are that not everyone is educated about your Hope Spot. Create a plan to raise awareness of the Hope Spot and ocean conservation with different groups in your community. What groups make up the community (e.g., youth, fishers, farmers, tourism, boaters, government, indigenous communities, conservationists)? Develop an outline of the issues and the user groups that may be causing these issues. Activities can include educating youth in schools, creating curricula for individual classrooms, and developing fieldwork projects and visits, science lecture series, and volunteer projects.
- **Restoration:** Some Hope Spots may have ecosystems that have been damaged or destroyed. Restoration efforts can attempt to return an ecosystem to its original condition. Do you have any organisms or ecosystems that can be restored? Here are two examples of restoration: 1) growing and planting mangroves to replace ones that have been removed and 2) creating artificial reefs, which are man-made structures to promote the growth of coral reefs.

INSTRUCTIONS: A management plan can take up to a year to create because there are many steps involved. You and your team will be involved in the pre-planning phase, which is one of the most important phases. During pre-planning, you will come up with a management plan for your MPA that describes the three most important actions that need to be taken. Before you begin, reflect on your answers to questions #1-10 from **Lesson 1B: Nominate a Hope Spot**. Use the table below, to brainstorm and prioritize the top three actions that you will implement when your MPA is established. List your top three actions (second column) in order of importance (1, 2, and 3). Use the final column to explain the specific activities that you will take for these actions. You may use bullet points in this section. Don't forget to cite evidence where necessary. Your citations can be listed on a separate page.

Prioritize your top three actions	Action (can be from list above or an action that is not listed)	What activities will you plan or would like to plan to help achieve these actions?
1 (most important)		



Prioritize your top three actions	Action (can be from list above or an action that is not listed)	What activities will you plan or would like to plan to help achieve these actions?
2 (second most important)		
3 (third most important)		



INSTRUCTIONS: Now that you have identified your top three actions, it is time to write your management plan. Your plan will cover a 10-year period. You should include the following items in it:

1. **Action:** Describe the detailed activities that you will include in the plan to achieve the three most important actions that you identified. In most cases, there will be more than one activity that should be completed for each action. Make sure to fully explain these activities in your plan.
2. **Whose involved:** What stakeholders are involved in the management plan? Describe their role(s) and the activities that they will be involved in. Good management plans involve many different stakeholders, not just the people writing the plan or the managers who will implement it. Remember that involving stakeholders can provide them with a sense of “ownership” which may aid in their commitment to protecting the MPA and supporting the plan. Look at the stakeholders that you identified in **Lesson 1C: Advocate for MPA**. Think about what each stakeholder group could contribute to the plan. Who are the most important stakeholders that should be included in it?
3. **Timeline:** How long will it take for these activities to be carried out? Keep in mind that some activities may be ongoing. Make sure to include a timeline for each activity over the length of the plan (10 years). Keep in mind that budget constraints may determine how often activities are conducted.
4. **Budget:** Provide the cost for the resources needed to complete these activities. Resources could include the salaries of the people carrying out the plan, the equipment needed to conduct research, the boats needed for enforcement, creation of a public outreach materials, etc.
5. **Evaluation:** How will you evaluate the proposed activities? It is important to measure the positive and negative outcomes of the activities being conducted. If activities are not benefiting the MPA, then managers will need to come up with other solutions. For successful outcomes, managers will want to promote them to show how these activities are aiding in the protection of the MPA.

The management plan that you create should be realistic and achievable. Unrealistic plans will only set your MPA up for failure. Your management plan should be well-organized and professional, and written in a way that anyone can read it, not just managers. To aid in creating an understandable document, make sure to properly format and label the plan sections so that information is easily searchable. When writing your plan, do not include personal opinions and biases. Rather, write it in a formal and objective tone that does not include jargon. When you finish writing your plan, reread it and ask yourself, “Is this plan concise and comprehensive? Did I include enough information to fulfill the actions that I identified? Did I include unnecessary information that takes away from the plan?”

See the **Appendix A: Management Plan Grading Rubric** to understand how you will be graded for this assignment.



MANAGEMENT PLAN GRADING RUBRIC					
Criteria	Beginning 1	Developing 2	Achieving 3	Mastering 4	Score
Action	The activities were barely developed and didn't address the need of the MPA.	The activities were undeveloped and rarely addressed the need of the MPA.	The activities were developed and addressed the need of the MPA.	The activities were fully developed and completely addressed the need of the MPA.	
Parties Involved	Lacks enough stakeholders that were identified for few to none of the given activities.	A minimal number of stakeholders were identified for some of the given activities.	An adequate number of stakeholders were identified for most of the given activities.	All necessary stakeholders were identified for all the given activities.	
Timeline	The timeline was set up to cover the relevant time period for few to no activities.	The timeline was set up to cover the relevant time period for some activities.	The timeline was set up to cover the relevant time period for most activities.	The timeline was set up to cover the relevant time period for all activities.	
Budget	The suggested resources and budget estimate is not able to be determined or not present .	The suggested resources are unreasonable and an incomplete budget estimate is provided.	The suggested resources are reasonable and a budget estimate is provided.	The suggested resources are more than reasonable and a complete budget estimate is provided.	
Evaluation	Management plan implements a few to no evaluation methods for activities.	Management plan implements few evaluation methods for some activities.	Management plan implements a mostly detailed evaluation methods for most activities.	Management plan implements detailed evaluation methods for most or all activities.	
Achievable & Realistic	The proposed plan is not achievable and realistic.	The proposed plan is somewhat achievable and realistic.	The proposed plan is mostly achievable and realistic.	The proposed plan is achievable and realistic.	
Organization	The sections lack formatting or labelling and are not organized in an understandable way and/or are unprofessional .	The sections have multiple errors in formatting and labelling and is somewhat well-organized and professional.	The sections have few errors in formatting and labelling and is mostly well-organized and professional.	The sections are properly formatted, clearly labelled, well-organized, and professional.	

Criteria	Beginning 1	Developing 2	Achieving 3	Mastering 4	Score
Comprehensive & Clear	<ul style="list-style-type: none"> There is no apparent plan being communicated. Unable to follow and ideas are not discernible 	<ul style="list-style-type: none"> The plan is underdeveloped and rarely clearly communicated. Difficult to follow; ideas are mostly discernible but not obvious 	<ul style="list-style-type: none"> The plan is developed and mostly clearly communicated. Fairly easy to follow 	<ul style="list-style-type: none"> The plan is fully developed and clearly communicated. Easy to follow 	
Conventions	The text illustrates inaccuracy in standard English conventions of usage and mechanics.	The text demonstrates some accuracy in standard English conventions of usage and mechanics.	The text demonstrates standard English conventions of usage and mechanics.	The text intentionally uses standard English conventions of usage and mechanics.	
Voice	The plan is mostly influenced by personal feelings or biases, and never presents an objective and formal tone.	The plan is often influenced by personal feelings or biases, and seldom presents an objective and formal tone.	The plan is sometimes influenced by personal feelings or biases, and mostly presents an objective and formal tone.	The plan is not influenced by personal feelings or biases, and always presents an objective and formal tone.	
TOTAL SCORE					

