

Not attempting to answer questions on expeditions will result in point deductions on course workbook (**two or more blank answers** will result in a deduction of 2-4 points; a 5 point deduction will be assessed if **more than five answers** are left blank).

**Objective:** Students will about some of the methods to manage fish stocks and what you can do as a consumer to address the decline in impacted marine fisheries. Discuss with your classmates the demise of the salmon along the west coast of the U.S., which may serve as a model for the decline of local fisheries in many parts of the world.

**How should the government manage or restrict commercial fishing in order to reverse the decline of marine fish populations? It is more complicated than you think!**

- Why not simply catch less fish by reducing the size of the catch?
- OK then, stop fishing depleted fish stocks altogether?
- Manage the entire ecosystem rather than individual fish?
- Do we catch only the big ones and throw the small ones back?
- Why not farm fish? We learned about in the last expedition.
- Set up marine protected areas or preserves in critical areas?

### 1. Introduction

What is the objective of this expedition?

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What is fish stock management (make sure you understand the difference between stock assessment and stock management)?

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## 2. Reducing the Size of the Catch - Quotas on the Cod (6 minute-long audio)

Here are some diagrams and a news segment that will help you to understand some of the subjects that were touched on in your reading assignment, *Twilight of the Cod*.

What is the disagreement between government scientists and members of the fishing industry?

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What are the economic and social impacts of the new closures on the fishing industry?

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## 3. Stop Fishing Altogether? Moratoriums - The Courts Get Involved (5 minute-long audio)

Here you see two maps that will help you to better understand the reading assignment, *Twilight of the Cod*, and a diagram of the juvenile forms of various species on the Georges Bank. Next you will learn about the moratorium on cod fishing in the region - if quotas do not work, then what will stop the decline in the cod?

If quotas are not enough then what management method is next....

Listen to the situation after a recent court ruling on overfished stocks along New England. If the government does not enforce a moratorium, should the courts take over?

What is meant by a moratorium? \_\_\_\_\_  
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**4. Rockfish Moratorium on the West Coast (7 minute-long video)**

Listen (and watch video) to the situation on rockfish on the west coast that was instituted only a few years ago. **What is the key point or points of the video?**

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**5. Fishing, the Enviro-Friendly Way (4 minutes and 30 seconds)**

How is fish stock management moving away from single stock management, but what are some of the issues?

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**6. Watch to "SeaFacts: Sustainable Ecosystem Management - The Alaska Pollock Example?" - (3 minute-long video)**

Why is stock assessment and management more complicated than simply counting fish in the commercial catch?

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**7. What about these new regions designated as Marine-Protected Areas? (9:40 minute-long video)**

Undersea Wilderness: Creating Marine Protected Areas - going beyond a moratorium.

**What are marine-protected areas and what do you think of this idea?**

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**8. How is the Fish Stock Assessment Being Conducted in Marine-Protected Areas? (5 minutes)**

How are scientists using a different type of research survey to assess the effectiveness of marine protected areas?

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**9. Is There Any Hope? Fish and Fishermen Go To Market" from KQED Quest (6 minutes)**

**Describe this new method of managing the fishing industry, Catch-Share Management - Cap and Trade in Fish (an improved version of ITQs described in Ocean of Trouble).**

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**10. (Some) Imperiled Fisheries Make A Comeback, Study Shows (4 minutes)**

What are some of the methods being used to re-establish fish stocks?

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An answer key is not provided for this expedition since this material is not covered on an exam, however, you are encouraged to post any questions that you have on the material in the "Exped. 4 - Fisheries Management - Any Questions?" discussion area.

**1 minute essay - Summarize what you learned in this expedition - Avoid the "I learned a lot about" syndrome -- show some insight**

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In order to receive credit for completing this expedition,

Go to Desire2Learn Discussion "Expedition 4 - Fish Stock Management Learning Group" and list and define six methods of fish stock management, two of which should be methods introduced in the last few years, and discussed in the reading assignments from expeditions 2 and 3.

Work with your learning group members to make sure that your fish stock management list is accurate and includes material from reading assignments.

Do not email a "Bye Don" for this expedition, since your participation in the learning group discussion provides the confirmation that you have completed the expedition.