



## What You Learned

### > Section A) Multiple Choice Quiz

1. Damage to the ocean ecosystems can occur from:
  - a. tourism
  - b. fishing
  - c. scientific research
  - d. all of the above
  - e. a and b
2. Phytoplankton are:
  - a. tiny plants at the bottom of the marine food chain.
  - b. tiny animals at the bottom of the marine food chain.
  - c. tiny organisms that eat zooplankton.
  - d. tiny animals that grow in cold, nutrient-rich water.
3. Threats to whales in the Gully include:
  - a. chemicals from hydrothermal vents
  - b. sound pulses from air guns
  - c. busy shipping lanes
  - d. a, b, and c
  - e. b and c
4. Which of the following statements is true?
  - a. Cold water currents from the Endeavour Vents bring nutrient-rich water to the surface.
  - b. Busy shipping lanes may pollute the water or collide with whales that live near the Endeavour Vents.
  - c. Chemicals from hydrothermal vents help some species make food.
  - d. Fishers use airguns to send loud sound pulses to look for tuna, swordfish, halibut and squid.



Name: \_\_\_\_\_

5. Which of the following statements is false?
- Submersibles can damage the sensitive ecosystems of hydrothermal vents.
  - Crabs, worms and other plants and animals live in the superheated water around the hydrothermal vents.
  - Scientists need a license to conduct research in the Endeavour Hydrothermal Vents MPA.
  - The Endeavour Hydrothermal Vents are home to about 15 species of whales and dolphins, including the northern bottlenose whale.
6. MPAs:
- always include “no-take zones”.
  - usually help generate bigger and more plentiful fish populations.
  - always include outer zones where no tourists are allowed.
  - usually are great places to fish because they include spawning grounds.
7. Submersibles:
- heal sensitive plants and animals that live in the deep.
  - are used for deep sea fishing.
  - are used by the government to guard the borders of MPAs.
  - are sometimes used to transport tourists who wish to see hydrothermal vents.
8. In the Endeavour Hydrothermal Vents MPA, it’s against the law to:
- remove mineral structures
  - remove any living thing
  - conduct any scientific research
  - a and b
  - b and c

**Canon**



Name: \_\_\_\_\_

9. Airguns:
- a. damage the hulls of boats, causing oil spills.
  - b. are used to locate corals.
  - c. are used to locate undersea deposits of gas and oil.
  - d. are used to police the perimeter of the Gully MPA.
10. One long-term goal of MPAs is to:
- a. increase fish populations by protecting spawning grounds.
  - b. reduce fisher catches by preventing fishing in certain areas.
  - c. limit the use of oceans so only researchers with permits can explore the deep sea floor.
  - d. repair cracks in the earth's mantle to prevent chemicals emerging from hydrothermal vents.

**Canon**





Name: \_\_\_\_\_

3. Why can overfishing even one species affect an entire marine ecosystem? Can you think of examples to support your answer?

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4. Describe the different zones included in the Gully MPA.

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Name: \_\_\_\_\_

5. Fishers sometimes have mixed feelings about MPAs. If you were a fisherperson voting on creating an MPA in your fishing waters, how would you vote and why? In the boxes below, write one reason that you might support MPAs, and one reason that you might resist them.

<p>I Vote <b>Yes</b> to our new MPA</p> <p>Why: _____</p> <p>_____</p> <p>_____</p>	<p>I Vote <b>No</b> to our new MPA</p> <p>Why: _____</p> <p>_____</p> <p>_____</p>
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6. How can oil companies exploring for gas and oil damage ocean ecosystems?

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7. Has the author included his own point of view on the role of MPAs in ocean conservation? Is he for or against them? Where in the passage does he insert his own opinions?

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> **Section D) Scrapbook – Ocean Conservation in the News**

As fisheries collapse and we discover more about the environmental impact of human activity in the oceans, issues about ocean conservation are always in the news.

- i) Choose a current news topic that is being reported in newspapers, websites and magazines. It could be about water conservation, oilrigs, an MPA, overfishing, or a species in the ocean that is endangered. Track the story for a week.
- ii) Cut out all the articles that you can find and glue them into a notebook. Don't forget to visit websites for conservation groups like WWF-Canada ([www.wwf.ca](http://www.wwf.ca)) or WWF-International ([www.panda.org](http://www.panda.org)), to see where they stand on the issue.
- iii) Write a one-page summary of the issue in your scrapbook. Why is it currently in the news?
- iv) Create a page entitled "Varying Viewpoints". Include at least two boxes that describe different viewpoints on your chosen topic. For instance, if you're researching overfishing, local fishing communities might disagree with government policy. If you're researching an issue that involves international waters, different countries may have opposing interests. Oil companies and industry may disagree with conservation efforts.
- v) Create a poll. A poll records the results of interviews with people, to find out their opinions on an issue. Write down five questions that will help you determine how other people feel about the issue you've selected. Are they concerned about it? Do they agree with viewpoints reported in the news? Interview three different people using the same five questions. Record the answers in your scrapbook.
- vi) Write a one-page journal entry in your scrapbook that explains how you feel about the issue. What are your opinions? How does the issue make you feel? Do you have any solutions to this issue?

**Note:**

When writing the survey questions, make sure they are "bias" free. This means you don't want what you think to structure the questions.  
For example:

**Correct:** "What are some of the effects of smoking?"

**Incorrect:** "What are some of the bad effects of smoking?"





# Answers: What You Learned

## Section A) Multiple Choice Quiz

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|------|-------|
| 1. d | 6. b  |
| 2. a | 7. d  |
| 3. e | 8. d  |
| 4. c | 9. c  |
| 5. d | 10. a |

## Section B) Quiz- Short Answer

1. Open

- Protect species and habitat means protecting ecosystem and their important functions and processes.
- Protect species that are at risk or endangered.
- Help to safeguard and maintain biodiversity.
- Reduce or eliminate heavy ship traffic and pollution from these vessels.
- Prevent overfishing of commercial species or stocks by limiting or restricting fishing activity. The latter is achieved through the creation of no-take zones.
- Protect vital breeding/spawning grounds and nurseries to promote strong and healthy fish populations inside the MPA.
- Spillover effect can replenish fish populations or stocks outside of the MPA, leading to better and abundant catches.
- Prevent damage or destruction to fragile ocean environments by limiting or restricting access.
- Prevent industries like oil and gas companies from mining or surveying in important or sensitive ecological areas.

2. Open

- Canada's first MPA was the Endeavour Hydrothermal Vents.
- These vents are fragile so removing or disturbing any of the mineral structures or living things there could damage the entire ecosystem.

**Canon**



## Answers: What You Learned (continued)

- They support some of the richest areas in the ocean, with up to half a million tiny animals and bacteria per square inch, some endemic species.
  - Much remains unknown about this unique ecosystem and protecting it would allow scientists to conduct more research.
3. Open
- All species in the ocean are linked in a complicated web of life.
  - Even the loss of a tiny species, like plankton, would upset the balance of the whole ocean because so many larger fish and whales rely on them for food.
4. Open
- The plan divides the area into three zones, each with a different level of protection.
  - The core – the deepest part of the canyon – is a no-take zone.
  - The outer zones allow some human activity while protecting the most vulnerable parts of the ecosystem.
5. Open
- **Support:** In the long-term, they can increase fish populations or stocks, both inside and outside the MPA, by providing safe areas for fish to spawn and grow. The spillover effect would lead to better catches outside the MPA. They promote the health of ocean ecosystems, which benefits us all.
  - **Resist:** Restrict them from fishing in areas they've used for years. This would affect their livelihood, their income, and their way of life. They might not agree that fish stocks are declining.
6. Open
- To search for undersea deposits of gas and oil, companies use airguns to send loud sound pulses into the ocean floor and listen for their echoes.
  - They can harm marine mammals who use sound to locate their prey.
  - Oil spills can devastate an ocean ecosystem, both species and habitat.
  - Oil rigs and ships cause heavy traffic and pollution.

**Canon**



## Answers: What You Learned (continued)

7. Open

- His view – He supports them because MPAs have many benefits for ocean life, ocean ecosystems and for humans.
- The last two paragraphs outline the author’s positive opinion about MPAs, and his hope that our communities and government can work to continue creating and maintaining them.
- Humans sometimes have a negative role in the web of life in marine ecosystems.
- Governments, scientists, conservationists and community leaders must sit down together to try to agree on ways to protect marine ecosystems.

### Section C) What Do You Think?

1. Open – personal opinion
2. Open – personal opinion

