



Marine Defenders Lesson Plan

Grade Level: **College**

Subject: **Environmental Science or Biology**

Duration: **60 Minutes**

Written by: **Capt Walt Nadolny, 2012**

For more information about oil pollution,
visit MarineDefenders.com

Marine Defenders is an educational project created by SUNY Maritime College and Common Good Productions with funding from the National Fish and Wildlife Foundation.



**MARINE DEFENDERS
60-MINUTE LESSON PLAN
COLLEGE ENVIRONMENTAL SCIENCE OR BIOLOGY CLASS**



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Credit and Disclaimer

What is the Marine Defenders Project?

While the media tends to focus on dramatic accidental discharges of oil like the recent Deep Water Horizon spill in the Gulf of Mexico, most of the oil spilled into the world's oceans by humans actually comes from intentional spills from ships.

One recent study estimated that more than 88 million gallons of oil is intentionally spilled into US waters each year – nearly eight times more than the amount of oil spilled by the Exxon Valdez into Alaskan waters.

Because chronic oil pollution is intentional, it represents the single most easily controlled aspect of oil pollution in US waters. Changing mariners' attitudes about illegal dumping will decrease the amount of oil entering our waters and improve the health of our coastal environment.

Marine Defenders is an educational program designed to reduce chronic oil pollution along US coastal waters in New Jersey and New York.

The goal is to teach mariners aboard US-registered vessels about the extent of chronic oil pollution, its impact on the marine environment, and the key laws that govern oil pollution.

Marine Defenders has created lesson plans for college students about chronic oil pollution as well as a short educational film and a mobile reporting tool that turns concerned citizens into Marine Defenders.

The Marine Defenders mobile reporting tool allows real-time reports of oil spills and marine debris to be mapped geospatially on the Marine Defenders website and reported to the Coast Guard via the National Reporting Center.

National Fish and Wildlife Credit

Marine Defenders is a public educational project created by the SUNY Maritime College and Common Good Productions with funding from the National Fish and Wildlife Foundation.

National Fish and Wildlife Disclaimer

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Marine Defender Lesson Plan for Environmental Science or Biology Class

Developed by Captain Walter Nadolny, August, 2012
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Grade Level: College

Length of Lesson: 60 Minutes

Materials Required:

- Internet access for Marine Defenders website
- “Oil in Our Waters” video is online as a streaming video or download at:
<http://marinedefenders.com/educators/lessons.php>

Preparation:

- Explore oil pollution facts and law at www.marinedefenders.com
- Download “Oil in Our Waters” video
(<http://marinedefenders.com/educators/lessons.php>)

Goals of the Lesson:

- To define the problem of chronic/ intentional oil pollution
- To gain an understating of the toxicology of oil and the impacts of oil pollution on the environment
- To raise awareness within students about the issue of intentional dumping of oil from ships.

Suggested Lesson Plan:

- Establish the problem of chronic oil pollution **(5 min)**
 - Give a brief introduction to the issue of chronic oil pollution.
 - Define chronic oil pollution for students
 - Outline the extent of the problem
- Sources of oil in the water **(10 min)**
 - Overview the sources of oil in the water using the graph here:
(<http://marinedefenders.com/oilpollutionfacts/sources.php>)
 - Discuss how big accidents garner media attention, but intentional and chronic oil pollution cause far more oil in the water.
- Watch the documentary “Oil in Our Waters” Environmental Version **(10 min)**
 - Students watch “Oil in Our Waters” to gain a better understanding of the issues related to intentional oil pollution

- Oil is a toxin **(15 min)**
 - Using Dr. Stegeman's section in the film as a launch point, give a more comprehensive overview of the toxicology of oil.

- Oil and Marine Life **(10 min)**
 - Explain the different ways in which animals are affected by large scale and chronic oil pollution.
 - Many examples of the health impacts of oil can be found here:
<http://marinedefenders.com/oilpollutionfacts/marinelife.php>

- Discussion (10)
 - Engage the students in a discussion about chronic oil pollution.
 - Present the Marine Defenders website as a resource for further exploration into the topic of marine oil pollution