

Applying Environmental Science

by Sophia





WHAT'S COVERED

In this lesson, we're going to cover the topic of applying environmental science. We will discuss environmental science and technology, what applying environmental science looks like in different contexts, and what scientific application can look like in the big picture. Specifically, this lesson will cover the following:

1. Science and Technology

Science is the process of understanding or knowing the world around us. Technology is a way of applying what we know. Science addresses and observes what exists in the natural world, while technology deals with what can be manipulated in the natural, or non-human environment, to meet human needs and wants.

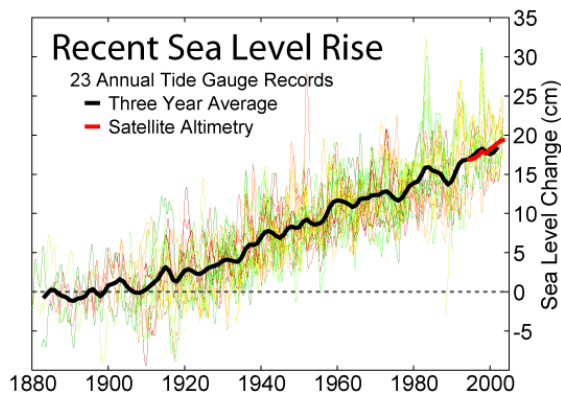
Science	Technology
	
What exists in the natural world	What can be changed in the natural world

2. Applications of Environmental Science

Let's discuss what applying environmental science looks like in a few different realms.

2a. Scientists

Scientists apply environmental science by doing different things, such as measuring pH levels in various states to understand acid rain deposition and identify the regions impacted. As you can see in the graph below, scientists have measured sea level rise over time around the world to understand if global climate change has impacted sea levels—and it has.



2b. Government Agencies

Government agencies use environmental science to conduct things like the Bureau of Land Management (BLM) study, which focused on the impacts of motorized vehicles on elk populations. As a result of the study, it was determined that Slate Creek in Wyoming needed to be shut down to motorized vehicles to protect wildlife in the winter.

The Environmental Protection Agency (EPA), a government agency, researched the impact of industry activities on wetland ecosystems. Then, through the Clean Water Act, the government made it illegal to dredge wetlands, an act which resulted in certain companies having to pay reparations.



2c. Private Organizations

Private organizations also utilize environmental science to make decisions. The outdoor gear manufacturer Patagonia researched the impact of manufacturing and shipping on global climate change and structured their supply lines to minimize CO₂ production. Monsanto, an agricultural chemical and technology company, used scientific research to state that produce from genetically modified organisms (GMOs) was not dangerous to human health.



2d. Nonprofit Organizations

Nonprofits, like the Natural Resources Defense Council, studied the human and ecological impacts of water resource



degradation and decided to promote safe drinking water in developing nations. The Nature Conservancy studied the importance of undeveloped land to ecosystem health and spent time and money securing a wilderness area in Maine for protection.

2e. The Public

The public can use environmental science to inform their decisions.

- A person studying the impact of climate change can make informed decisions about donating or electing a candidate who supports policies that help reduce climate change.
- People can discover, through a scientific report, that a nearby company's practices are polluting waterways, and they can then get others to sign a petition to make the company stop its pollutive activities.

In the end, science can point us to the facts, but it is up to humans to interpret and take action on those facts.

➔ **EXAMPLE** Electricity was discovered through science; however, it was through the ingenuity and initiative of people that this discovery was turned into power for lighting and a grid system to power entire countries. These developments also led to countless other technologies, such as computers.



SUMMARY

In this lesson, we talked about **science and technology**, what it means to **apply environmental science** in various contexts, such as the activities of **scientists, government agencies, private organizations, nonprofit organizations**, and the **public**.

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