Water Pollution

by Sophia

	WHAT'S COVERED

In this lesson, we will cover the topic of water pollution. We will discuss the impacts and sources of water pollution, focusing on the two types of water pollution: point and nonpoint source. We will also cover several historical examples of water pollution. Specifically, this lesson will cover the following:

1. Impacts of Water Pollution

Negative impacts of water pollution include the following:

- Shortage of safe drinking water for human use
- Increased risk to human health, whether it be from consumption or recreational water activities
- Disruption of life cycles or reproductive cycles of organisms
- Poor health or death of organisms
- Alteration of species and disruption of balance in ecosystems

2. Types of Water Pollution

There are two main types of water pollution: point source water pollution and nonpoint source water pollution.

2a. Point Source Water Pollution

Point source pollution is easy to track and account for because it is affixed. The following are some examples of point source pollution:

- Landfills
- Polluted waste storage lagoons
- Underground storage tanks
- Septic tank systems
- Municipal and industrial wastewater treatment plants
- Ocean-linked dumping of waste

Landfill

Wastewater Treatment Plant

2b. Nonpoint Source Water Pollution

Nonpoint sources of water pollution are often difficult to identify because they are caused by a wide variety of distributed sources. The following are some examples of nonpoint source pollution:

- Runoff of heavy metals, chemicals, and other pollutants from mining operations
- Runoff of soil and pollutants from forestry operations
- Runoff of oil, grease, and other such contaminants from roads and paved surfaces, like concrete and asphalt
- Runoff of pollutants and even simple soil erosion from construction sites
- Runoff from oil, gasoline, pet feces, litter, and even salt to melt the ice and snow in urban and suburban settings
- Runoff of pesticides and fertilizers from agricultural farms or even domestic lawns

Copper Mine

Road Construction

Agricultural Runoff

IN CONTEXT

Ocean pollution is another large problem that is caused by both point and nonpoint sources.

Most of the pollution in oceanic and marine locations is the result of point sources of industrial wastewater, sewage, and offshore oil operations, while nonpoint sources are primarily agricultural runoff, air pollution, and maritime transportation.
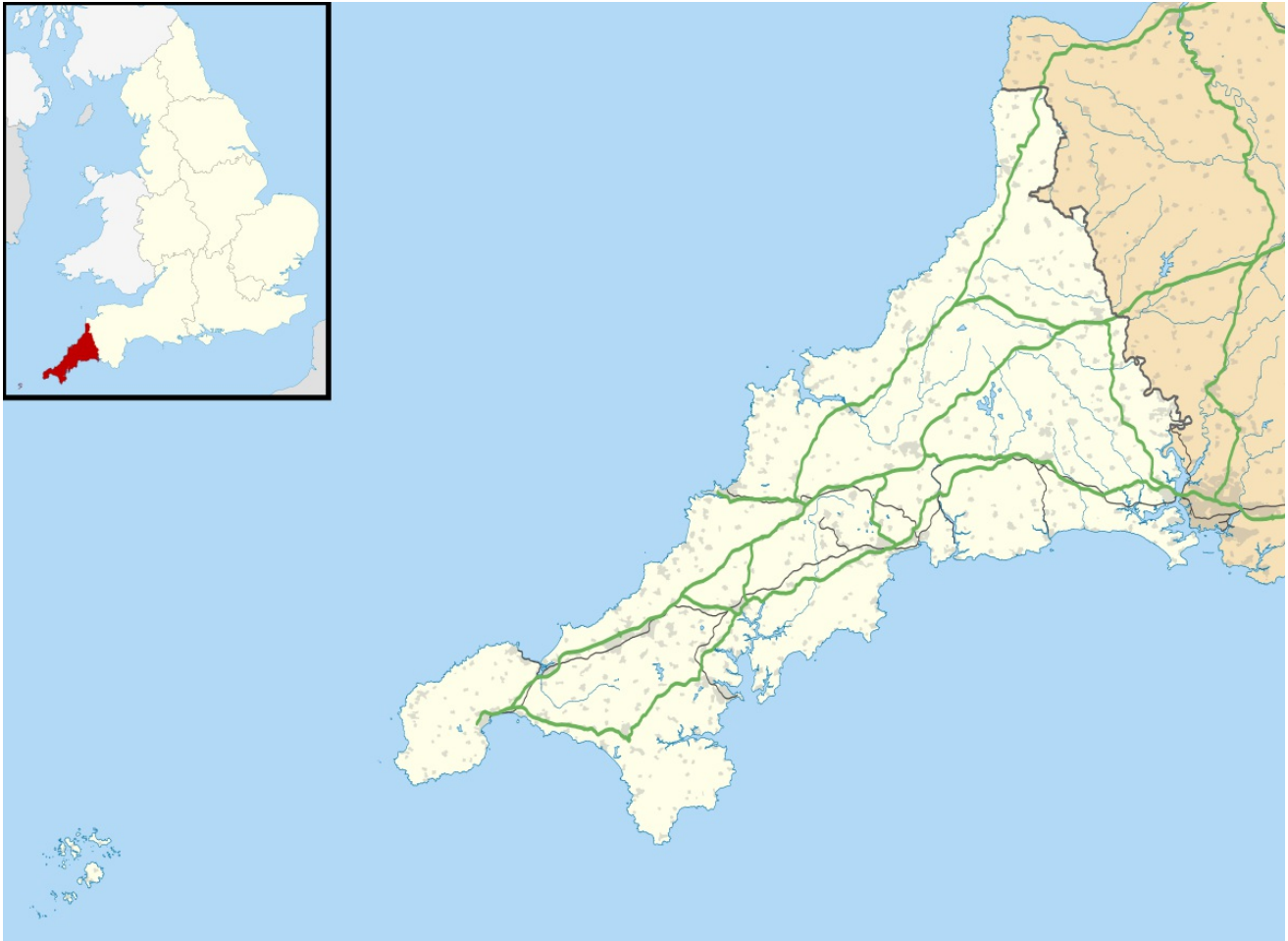
3. Historical Examples of Water Pollution

Let's discuss some real-world examples of water pollution and its far-reaching effects.

3a. Camelford

In 1988, in Camelford, Cornwall, England, 20 tons of aluminum sulfate were accidentally introduced to the public drinking water system, an amount which is 3,000 times higher than legally permitted. It is considered to be one of England's worst large-scale poisonings and has had a multitude of short- and long-term effects on human health, such as memory loss and dementia. Victims of the incident who died many years later were discovered to have dangerously high levels of aluminum in their brains.
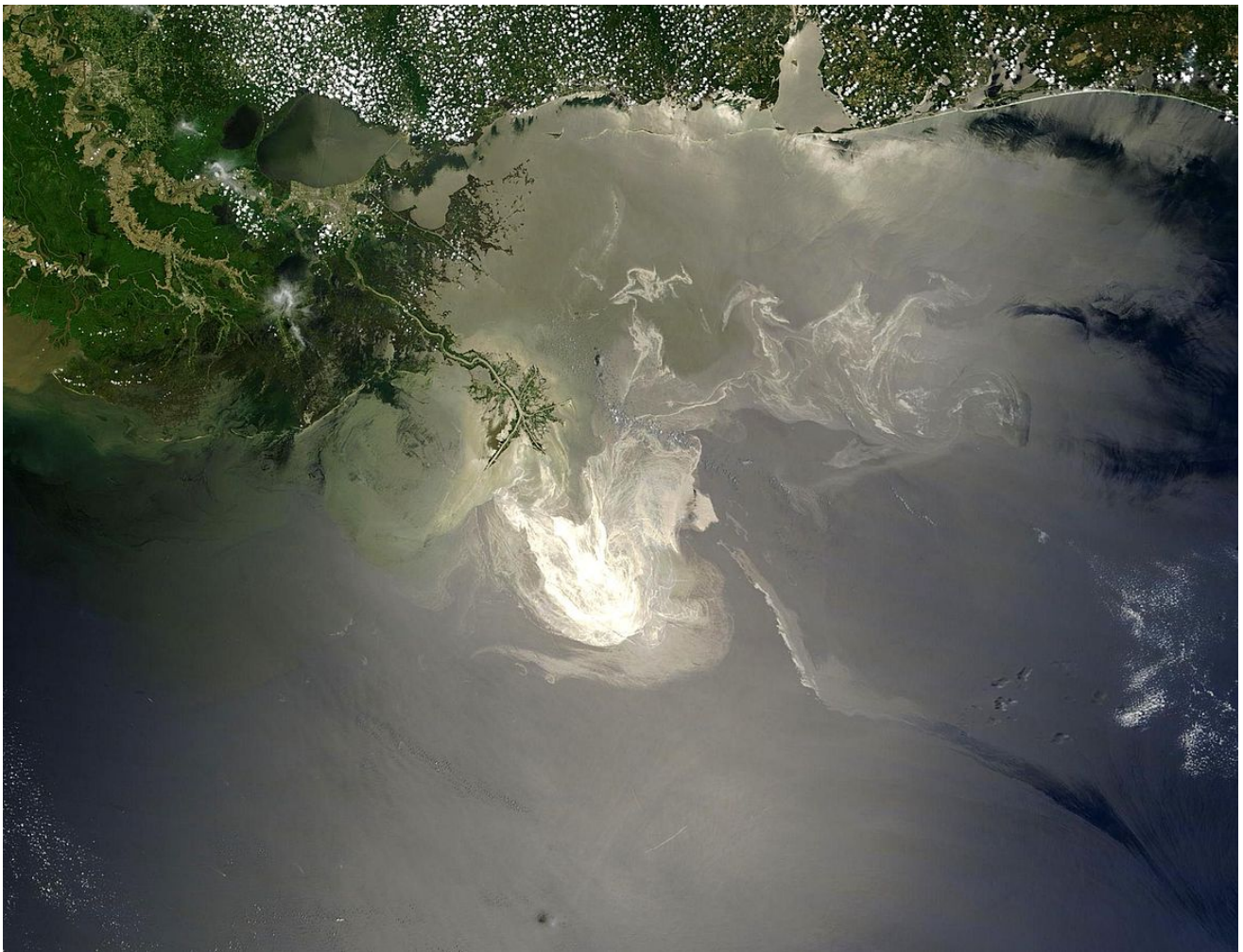
3b. Jalisco

In 2014, in the Mexico state of Jalisco, 200 tons of fish were killed by high levels of sewage dumped into the lake. The sewage lowered oxygen levels and effectively suffocated the species of chub living in the lake. While the lake has been reopened for boating, it is still in an altered state with higher temperatures and algal blooms.
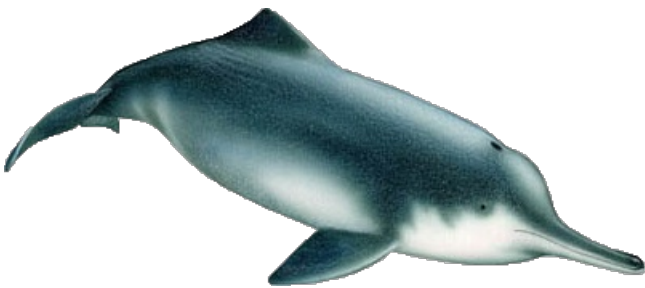
3c. Gulf of Mexico

The Deepwater Horizon oil spill in the Gulf of Mexico is one of the most infamous water pollution catastrophes. The oil rig faulted and allowed 210 million gallons of oil to gush into the Gulf. It affected 8,322 different species, including aquatic life and birds. Many fish were found with increased levels of lesions. The number of dead baby dolphins washing up on shore increased as well, and many other negative environmental impacts have been recorded and studied. 143 cases of human exposure and health impacts were also reported as a result of the spill.

3d. Chinese River Dolphin

The last example we will discuss is the Chinese River Dolphin, which is believed to have gone extinct after an expedition in 2006 failed to find any. Its extinction is believed to have been caused by a variety of human causes, including pollution and overexploitation.

📋 SUMMARY

In this lesson, we learned about **water pollution and its negative impacts**. We discussed the two **types of water pollution: point source** and **nonpoint source**. Within each type, we explored the different kinds of point and nonpoint source polluters. Finally, we discussed some **historical examples of water pollution** and its effects on humans and ecosystem health, such as **Camelford**, **Jalisco**, the **Gulf of Mexico**, and the **Chinese river dolphin**.

Source: THIS TUTORIAL WAS AUTHORED BY JENSEN MORGAN FOR SOPHIA LEARNING. PLEASE SEE OUR **TERMS OF USE**.

🔖   **ATTRIBUTIONS**

- **Landfill compactor** | **Author:** Ropable | **License:** Public Domain

- **Wastewater Treatment Plant** | **Author:** Dantadd | **License:** Creative Commons Attribution-Share Alike 2.5 Generic

- **Copper Mine** | **Author:** Eric Guinther | **License:** Creative Commons Attribution-Share Alike 3.0 Unported

- **Asphalt** | **Author:** Aktron | **License:** Creative Commons Attribution-Share Alike 3.0 Unported

- **Runoff** | **Author:** Unknown | **License:** Public Domain

- **Oil Rig** | **Author:** Paramayra | **License:** Creative Commons Attribution-Share Alike 4.0 International

- **Map of Cornwall, UK** | **Author:** Nilfanion | **License:** Creative Commons Attribution-Share Alike 3.0 Unported

- **Boating** | **Author:** CarlosFDZ_krskt | **License:** Creative Commons Attribution-Share Alike 3.0 Unported

- **Oil spill** | **Author:** NASA/GSFC, MODIS Rapid Response | **License:** Public Domain

- **Chinese River Dolphin** | **Author:** Alessio Marrucci | **License:** Creative Commons Attribution-Share Alike 3.0 Unported