

The Pacific Garbage Patch

Human Impacts

What Goes Around, Comes Around: Systems Thinking

- Systems thinking means considering the relationships among different parts of a larger process.
- When we think about the garbage patch, the players involved include the ocean environment, marine life, and humans.
- It is clear that humans play a starring role in the creation of the Pacific Garbage Patch. Marine life suffers greatly from the marine debris of the garbage patch.
- What do you think are some impacts of the garbage patch on humans?

Impact 1: Economic Impact



Economic Impact: Tourism

Tourism suffers greatly from marine debris. Estimated losses in the US alone are in the millions of dollars annually. [2]

Think about it- which of these beaches would you rather visit?



[3]



[4]



[5]

Economic Impact

In addition to the beach, just think about other ways we use the ocean. Can you think of two other ways that the Pacific Garbage Patch negatively impacts humans through economic means?

Economic Impact: Industry [2]

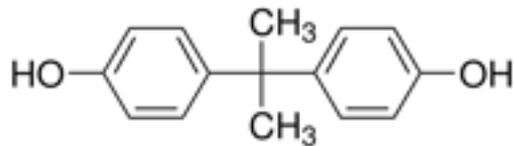
- In addition to tourism, fishing and shipping industries are the hardest-hit by marine debris.
- “Ghost fishing,” inadvertent trapping of sea life in fishing nets, kills millions of dollars of seafood annually.
- Ships suffer hundreds of millions of dollars of damage yearly as marine debris tangles in propellers and damages equipment.

Can you think of a non-economic way the garbage patch impacts humans?



Impact 2: Chemical Exposure

- Countless tiny pieces of plastic called nurdles float in the ocean. Nurdles are great transmitters of chemicals and contaminants. [7]
- Chemicals like bisphenol A (BPA), polychlorinated biphenyls (PCBs), and polybrominated diphenyl ether (PCBE) are frequently carried by plastic and ingested by fish. [8]
- Human levels of PCBs correlate with amounts of seafood consumed. Also, as levels of PBDE in seafood have increased, levels of PBDE in humans have increased proportionally. [8]



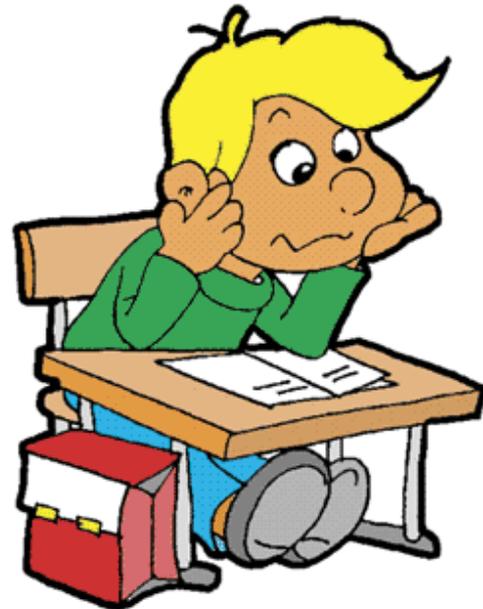
[9]

Chemical Exposure

- The EPA considers PCBs a possible carcinogen because of their ability to cause cancer in animals. [10]
- Children exposed in utero to PCBs through maternal seafood consumption may have decreased head size and impaired muscle development. [10]
- Fetal exposure to PCBs may also harm neurological development. [11]
- The full potential damage to humans from ingestion of these chemicals is not well understood. [11]

Human Impact: Pop Quiz

- Can you name 3 different ways that the Pacific Garbage patch negatively impacts humans?
- Explain what systems thinking is and how it relates to the Pacific Garbage Patch.



A Final Thought

Just remember... we are what we
eat!!!!!!

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