

Conservation Ecology

Day 6

ScioCamp 2022

Question of the day!



Which Hogwarts house are you?







kahoot!

Pollution

Water Pollution

You might've seen this...











GPGP

Have you seen this?











Great Pacific Garbage Patch



So what have we done so far?

- Clean Water Act (1972)
  - Amendments:
    - Beaches Environmental Assessment and Coastal Health Act (2000)
    - Clean Boating Act (2008)
    - Oil Pollution Act (1990)
- Marine Debris Research, Prevention, and Reduction Act
- Coastal Zone Management Act
- National Pollutant Discharge Elimination System (1972)
- Shore Protection Act
- Act to Prevent Pollution from Ships and Marine Plastic Pollution Research and Control Act
- Marine Protection, Research, and Sanctuaries Act



clean water Act

- Authorized by Congress in 1972
  - Environmental Protection Agency
- Originally called: Federal Water Pollution Control Act (1948)
- we thank them for 2 important things
  - established wastewater standards for industries
  - instilled water quality standards for contaminants in surface waters
- what does it do?
  - still allows pollution with permits
  - improved wastewater treatment
  - focuses on preserving wetlands
    - they’re important for:
      - reducing erosion
      - improving water quality
      - flood protection
  - addressed point and nonpoint source pollution
- has been amended in 1972 to give EPA the authority to set and enforce standards

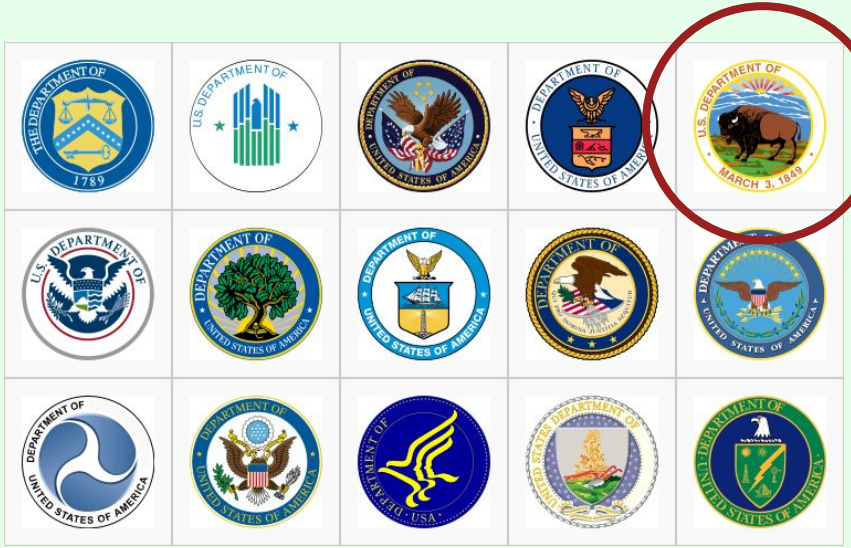


Politics

The United States has 15 executive departments that are led by a member of the Presidential Cabinet. These departments carry out the day-to-day administration of the federal government.

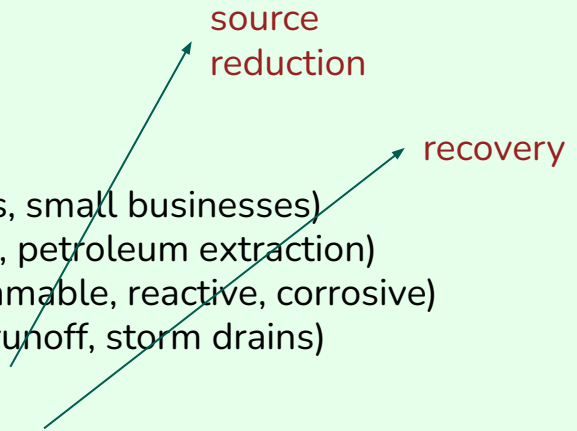
- U.S. Department of Agriculture
- U.S. Department of Commerce
- U.S. Department of Defense
- U.S. Department of Education
- U.S. Department of Energy
- U.S. Department of Health and Human Services
- U.S. Department of Homeland Security
- U.S. Department of Housing and Urban Development
- U.S. Department of Justice
- U.S. Department of Labor
- U.S. Department of State
- U.S. Department of the Interior
- U.S. Department of the Treasury
- U.S. Department of Transportation
- U.S. Department of Veterans Affairs

Within which dept. is the EPA located in?



Waste Management

- waste
  - any unwanted material/substance that results from a human activity/process
  - degrades:
    - water quality
      - how?
    - soil quality
      - how? (think hazardous)
    - air quality
      - give me an example!
    - human health
- there are 4 categories of waste:
  1. municipal (solid waste from homes, institutions, small businesses)
  2. industrial (solid waste from mining, agriculture, petroleum extraction)
  3. hazardous (solid/liquid waste that is toxic, flammable, reactive, corrosive)
  4. wastewater (waste that is drained or flushed; runoff, storm drains)
- there are 3 main components of waste management
  1. minimizing amount of waste we generate
  2. recovering discarded materials/finding ways to recycle them
  3. disposing of waste <u>safely</u> and <u>effectively</u>



Recycling…is it really worth it?

Recycling proportion of the waste stream in the US has improved.
1960: 6.4%
2013: 25.5%

However, the economics of recycling are quite complex…
Often times it looks like this:

- **Expense to collect, sort, process recycled goods** > **Worth of recyclables in the marketplace**
- ↑ recyclables =
  ↑ availability of glass, paper, plastic =
  ↓ price
- have you thought about transportation?
- when world oil prices are low, buying new plastics can be **CHEAPER** than buying old (recycled) plastic
- when market prices of metals are low, **buying newly mined metals** can be **CHEAPER** than older (recycled) ones

BUT!!!

We’re not doomed.
These do NOT take into account external costs of NOT recycling.



Did you know?

- Recycling saves enough energy to power 6 million+ homes per year GLOBALLY



- Recycling and composting saves energy that is EQUAL to that of 230 million barrels of **oil** in the US per year

- Recycling and composting prevent CO2 emissions EQUAL to that of 39 million **cars** in the US per year



- Recycling Aluminum cans saves 95% of energy required to make the same amount of Aluminum from mined virgin bauxite



What are the best ways to reduce waste?

Here. Let me give you an idea.

Here, waste bags are bought individually.
Take a guess at how much each bag costs.

a) $2.20
b) $3.75
c) $4.25
d) $6.00





movie rec #2:



Recommended by: Ellie

Watch it by 7/25 (next Mon) to discuss in class.

available on Prime Video, Discovery Channel

Resources

shopping sustainably:

4Ocean

Wholesome Culture

Thrifting & secondhand stores

volunteer events near you

The Ocean Cleanup

Beach Cleanups (CA)

Homework

We'll be posting some extra resources to check out to cover some topics we didn't get to yet in class!

Attendance

code: system19

Next class:

Anthropogenic Climate Change