

Tags

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Poisoned Waters, part Deux

Poisoned Waters–Frontline Video

Video is here:

http://physics.hpa.edu/physics/apenvsci/videos/poisoned_waters/POISONED_WATERS.mp4

High quality version is here:

http://physics.hpa.edu/physics/apenvsci/videos/poisoned_waters/poisoned_waters.m4v

You may find it helpful to download this into your own computer: hold the option key while clicking on the link.

Context:

- Water Pollution–air pollution–climate change
- Watersheds, transit time
- water pollution:continuity, local until ocean,

Segments:

Segment 1: Chesapeake bay: 00–45:00

- Chesapeake watershed
- EPA CWA 1970
- Perdue/hog Ag farms, Eutrophication

Segment 2: Potomac River: 45:00–54:00

- Endocrine disrupters–drinking water

Segment 3: Puget Sound: 54:00–1:33:00

- Bioaccumulation–PCB Killer Whales
- Boeing–PCBs from runways
- Runoff–water transit time King County

Segment 4: FairFax County, VA: 1:33:00–1:54:00

- Tyson's corner-transit time, sediment runoff
- Loudon county-traffic planning
- Arlington-urban planning

Questions:

Chesapeake Bay

1. Why is it useful to get the historical view of the craggy old fishermen?
2. How are the fish an indicator species?
3. How large is the Chesapeake watershed?
4. Why is this bay uniquely vulnerable?
5. What causes dead zones in the film?
6. What is the global trend in dead zones? where?
7. What three basic functions of the bay will likely be lost to your generation?
8. What was different 40 years ago?
9. What was the cause and effect process of Earth Day and the EPA?
10. Did Nixon back the clean water act? Explain.
11. What were the key tenets of the CWA?
12. What were the initial actions of the EPA?
13. RFK jr. says he could not swim in the Hudson, Charles or Potomac. Where are these?
14. Why did you have to take a shower if you fell into these rivers?
15. What was the Potomac point source pollution source described in the film?
16. What is BNR and how does it work?
17. What is not removed from human wastewater with BNR that concerns us?
18. How did Reagan's policies impact the EPA and pollution regulation?
19. What is "voluntary compliance" and did it work? explain.

Factory farms

1. What is the biggest danger with concentrated animal farms/ CAFOs (poultry, pigs, cows)?
2. Look up why we have different names for the same animals:
cow/beef, chicken/poultry, pig/pork
3. Why is it advantageous for Perdue to subcontract chicken operations?

4. What is vertical integration?
5. What was the national response to cheap chicken?
6. If you were to put chicken manure on your garden, you could burn your plants. why?
7. On the way downhill to the coast, there is an egg factory that went out of business, who now sells “manure compost”. Where did this come from, and how is it a good deal for them?
8. Why does not Perdue own the chicken waste, if they own the chickens? How does the Perdue guy dodge the problem?
9. What is the difference between city waste and ag waste?
10. What does the chicken guy say about deer?
11. What did the chicken lobby in Maryland (Eastern shore) do about pollution regulation? why?
12. How is this similar to the Iowa corn ethanol lobby?
13. RFK Jr. describes two things: externalized costs and subsidies. What does he mean by these?

Endocrine disrupters

1. Why are not endocrine disrupters part of the clean water act?
2. What is intersex in the male bass? what causes this?
3. How does the concept of river continuity impact endocrine disrupters?
4. Do they need to be very concentrated to be effective?
5. A person flushes birth control pills (hormones) or other drugs down the drain. How can this impact someone living many miles downstream?
6. Why are these hormones not filtered by water treatment plants?
7. What is “synergism”? Why is it critical here?

Puget Sound

1. How cold is the water in Puget Sound? Why is this relevant?
2. Why do the apex predators have the highest concentration of PCB?
3. What is a sentinel species? why is this relevant?
4. Which population of humans is now showing similar health effects?
5. What is Superfund, who funds it?
6. What is the biggest liability problem with the Boeing dioxin situation?
7. What is the concept of “deep pockets”?

8. Why would native Americans be the indicator species in the Duomish river?
9. Is South Park (not the tv show) upper income or lower, immigrant or not? Why is this important?
10. On the AP exam, you will be expected to know all about Love Canal. How is this similar?
11. What do you think is coming out of the pipe underwater in the video?
12. Why are “impervious surfaces” so bad for the Puget Sound?
13. Why do folks get upset about oceanic oil spills and not the stuff you see in the video?
14. What is the difference in "transit time" for rain water hitting concrete vs. soil?
15. Ron Sims has enemies in King county. Who?
16. How is the Growth Management Act/Critical Areas Ordinance (CAO) similar to the Urban Growth Boundaries (UGB) concept in Portland Oregon (we'll see this in the Portland e2 video)
17. Look up the CAO now. How is it going?

Fairfax

1. Look up Tyson’s corner. What did it look like in 1945?
2. Would Tyson’s corner have been successful without cars?
3. How is Tyson’s corner like Los Angeles?
4. How is Arlington different from Tyson’s corner?
5. In a sense, US cities are learning to become more like older European cities. Why are they different?
6. What is the meaning of the phrase “canary in the coal mine” and where did this term come from?
7. According to the narrator and Governor of Washington, what is a necessary part of the solution?
8. What is your part in this future?

Summary questions:

1. You have chosen the water treatment manager for a small town in Doofania that gets its water from a river, with Uglyopolis upstream and Ya–ya town downstream. What steps would you take to make sure you and the other towns are getting clean water, and describe impact of an upstream sewage plant in Uglyopolis and a nuclear power plant on the river in Ya–ya town.

2. From the Poisoned Waters Frontline video, choose one of the stories and explain why it is important to you, what it explained, and how it relates to your work.