

OIL SPILL SOLUTIONS: How does this lab relate to the real world?

sustainability
science for
sustainable
schools

NSF-Funded GK-12 Project



The BP oil spill

- Oil flowed from the bottom of the Gulf of Mexico for three months in 2010!
- The largest oil spill in U.S. history: 4.9 million barrels of crude oil were released into the Gulf of Mexico- that's 206 million gallons of gas!

What happened??

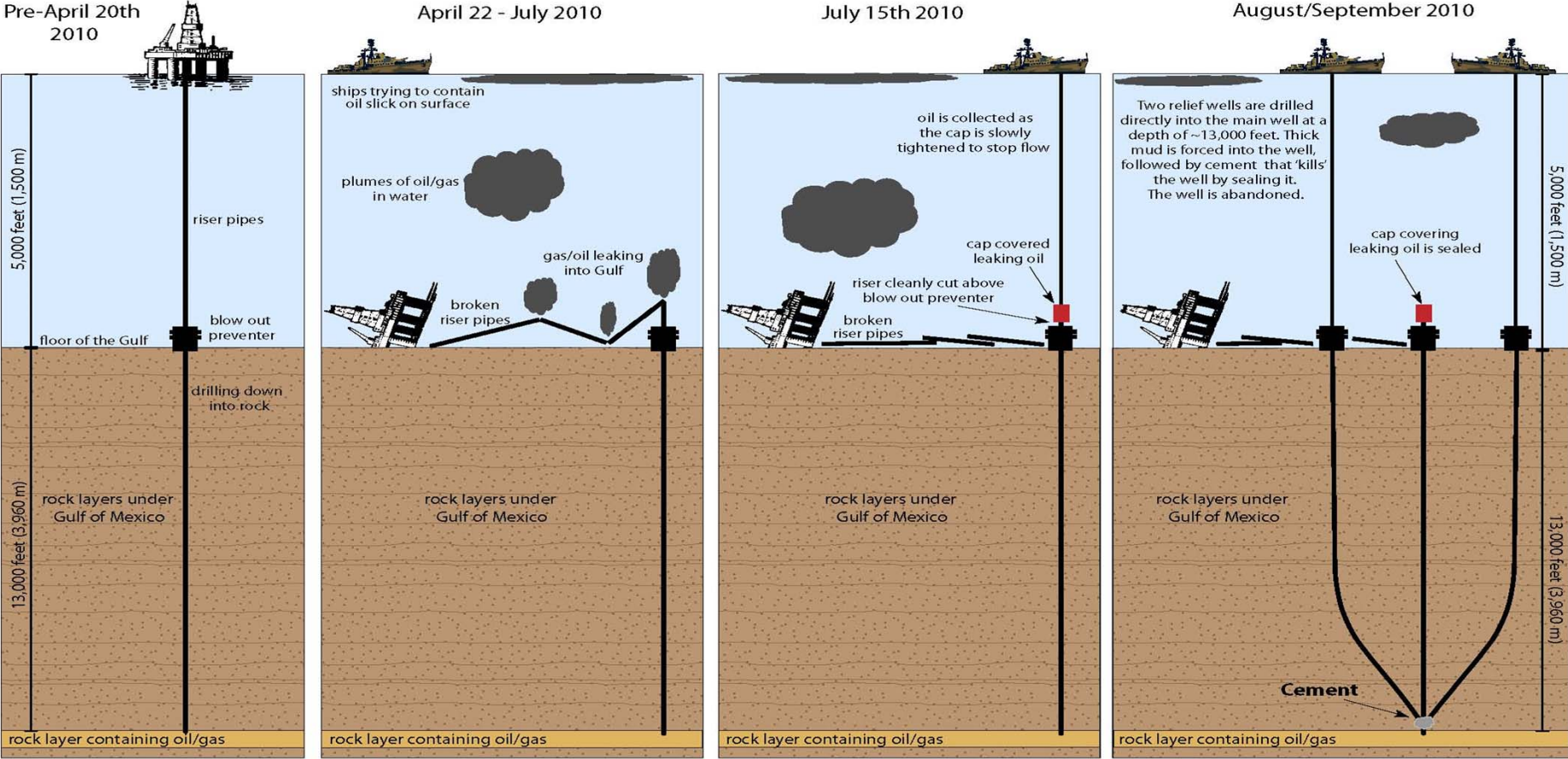
- April 20th- An explosion on the Deepwater Horizon offshore oil rig- 11 workers killed
- The damaged oil rig sunk to the bottom of the ocean and a five mile long oil slick appears in the water
- April 24th- the US Coast Guard confirms that oil is leaking from the underwater well
- May 4th- oil begins washing ashore on the barrier islands off of Louisiana's Coast.
- June 30th Hurricane Alex disrupts cleanup efforts
- September 19th- the oil spill formally declared over



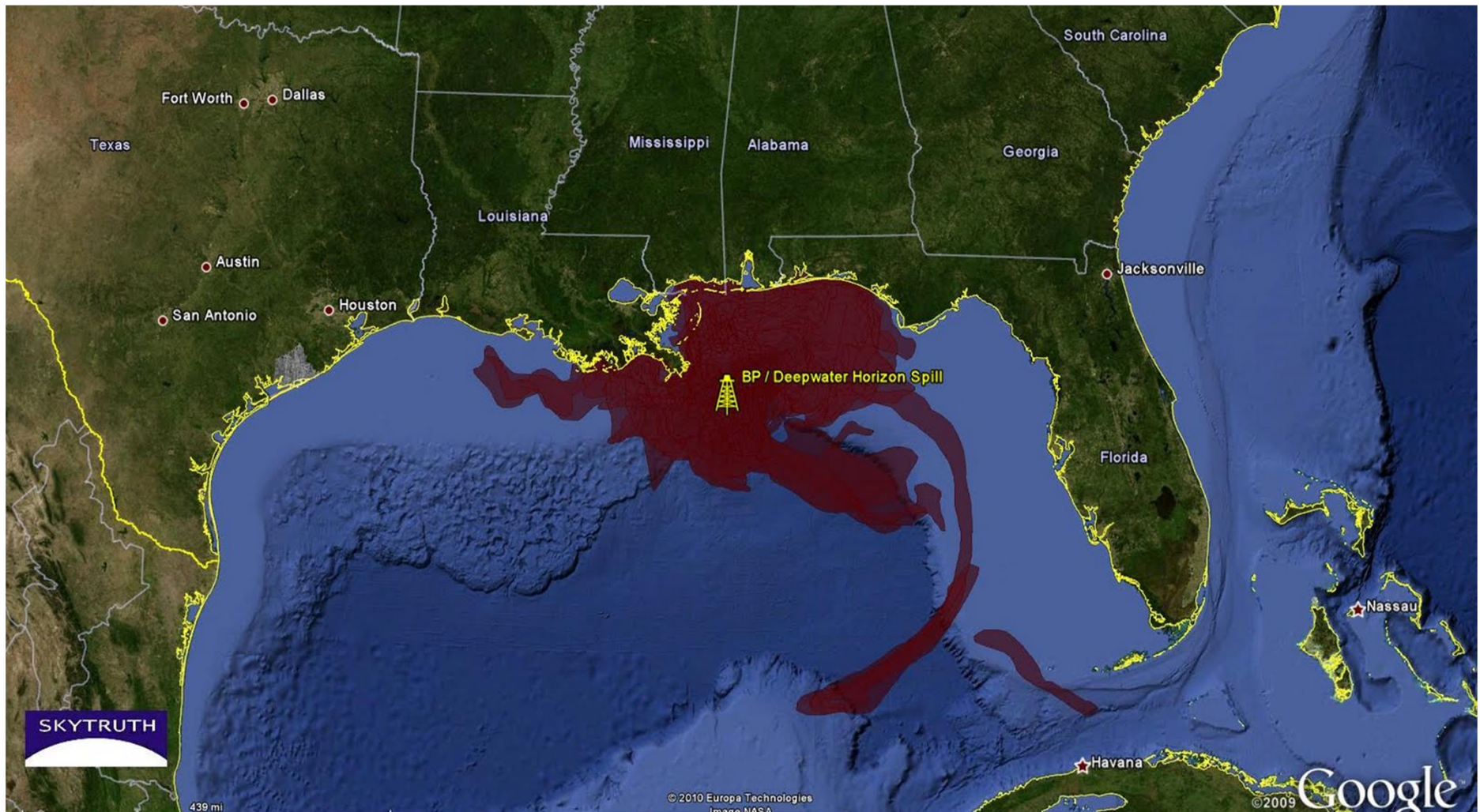
Overview Cartoon the 2010 Deepwater Horizon Oil Spill

Created by Erin DiMaggio

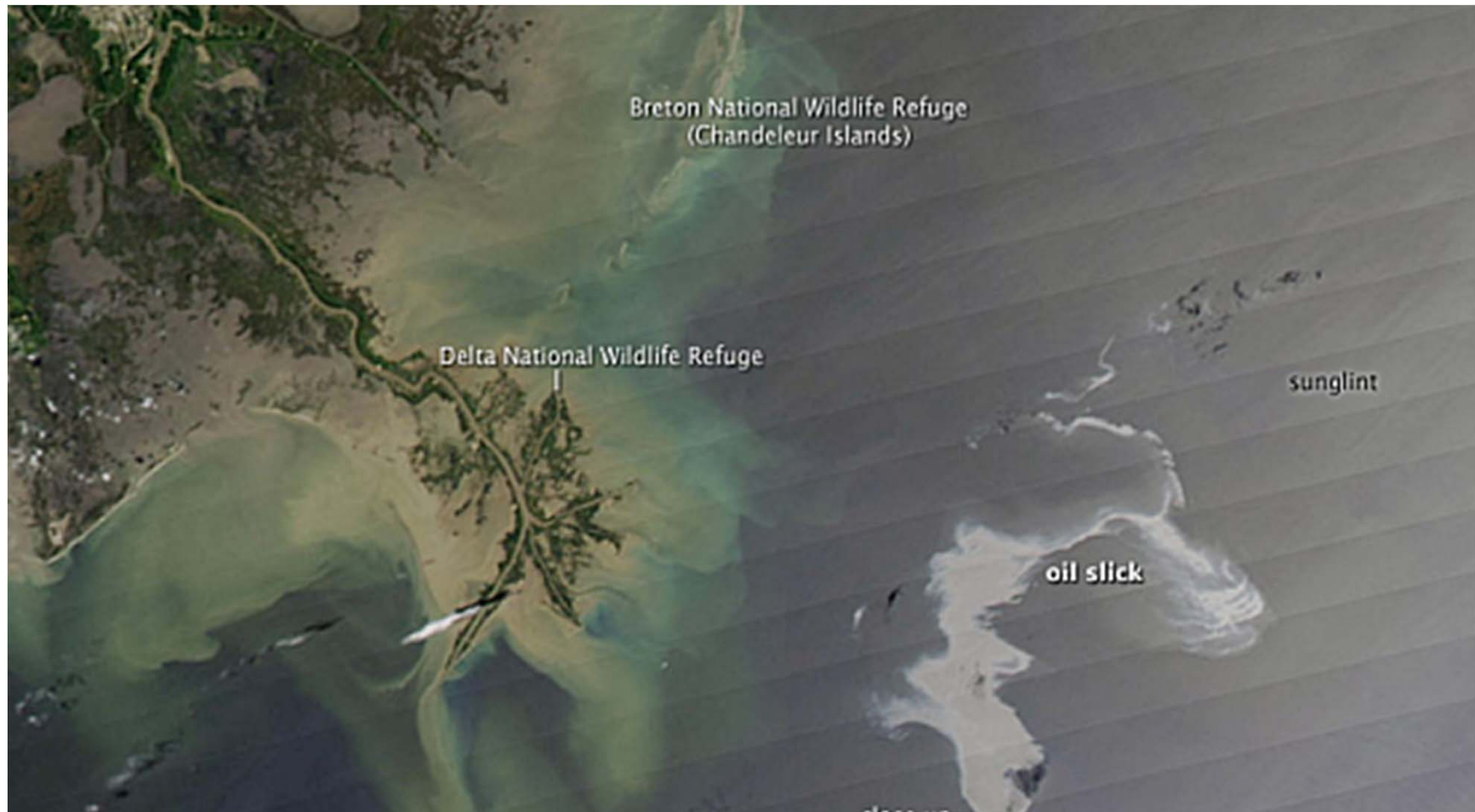
*Not drawn to scale



The size of the spill



The oil spill from space



Cleanup methods

Three tactics: contain it on the surface to protect it from sensitive areas, dilute and disperse it into less sensitive areas, remove it entirely:

- 1) Containment Booms/Skimbers: corral the oil and prevent it from reaching sensitive areas like marshes, mangroves, or shrimp/crab/oyster beds
- 2) Soak, scoop, suction up the oil
- 3) Burn of the oil
- 4) Chemical dispersants

Are there *tradeoffs* to each method?

Containment Booms





Soak/scoop/suction the oil

- Cleanup workers used various devices, some as simple as shovels and rakes



Soak/scoop/suction the oil

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Burning off the oil



Chemical dispersants: chemicals break down the oil into SMALL particles



What are the social,
ecological, and economic
impacts of the BP oil spill?

ONSHORE environmental IMPACTS



IMPACTS TO WILDLIFE







Economic impacts

- Fishing industry the hardest hit
- Fisherman were unemployed for months during cleanup
- An estimated 2 billion lost in revenue



- Tourism suffered when beaches were closed
- BP has spent 3 billion so far and promised 20 billion for damages!



SOCIAL IMPACTS

■ Health Impacts





What lessons can we learn from the BP oil spill?

- Technology plays an important role in environmental disasters, but there are trade-offs to the technologies we choose to use.
- Oil spills are difficult and costly to contain and these costs are not reflected in the price we pay at the pump.
- There are multiple layers of impacts from oil spills.

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- Photo 1: National Commission the Deepwater Horizon Oil Spill

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