

주제발표 3

**미국 대규모 유류유출사고에
따른 정부정책 및 환경보건지식**
: 미국 엑손발데즈호 및 멕시코만 사례

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Tale of Two Oil Disasters

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10-year memorial of
Hebei Spirit Oil Spill

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a project of Earth
Island Institute



1989



1989 Dave Janka

Questions

- What have we learned about harm from oil?
- How can we mitigate harm in future spills?

BP Deepwater Horizon

- 6,300 tons dispersants
- tons of oil in air
- millions of people exposed
- exposures extended

2010



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Disaster response comparison



Hazardous waste work

- ❖ BP downgraded

Inadequate training

- ❖ EV – 4 hours (std. 40)
- ❖ BP – initially 4 hours

Health Hazard Evaluation

- ❖ Illnesses: natural causes
- ❖ No follow up



public finds oil





2010 Rip Kirby



2010 Riki Ott

public misinformed

water safe and
beaches open...
swim at own risk



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Photos: 2010 Rip Kirby

oil + dispersant = DEADLY

mutagens • carcinogens
teratogens • neurotoxins
hemolysis • systemic poisons

Dispersants

- ❖ target same organs as oil
- ❖ facilitate movement of oil into bodies
- ❖ an acceptable human health risk trade-off?

NOAA et al., 2012, Dispersant Initiative Report
https://crrc.unh.edu/sites/crrc.unh.edu/files/media/docs/Workshops/dispersant_future_11/Dispersant_Initiative_FINALREPORT.pdf



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from Gulf Stream into Blood Stream



Volatile solvents profile, whole blood – MetaMetrix

- ✧ more oil in blood than 95% to 100% of the U.S. population

Medical community

- ✧ treated people for biological agents, NOT chemical agents
- ✧ NO written diagnosis of chemical illness

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common symptoms for many causes

Antigen (foreign substance)

A	Reaction!	B	C
Allergen (natural) <ul style="list-style-type: none"> • food • pollen • plants • feathers • pet dander • smoke • bee & snake venom 	<ul style="list-style-type: none"> • Cough • Cold/flu • Eye & nose irritation • Sore throat • Headache • Dizziness • Skin rash 	Non-allergen (natural) <ul style="list-style-type: none"> • bacteria • parasites • viruses • mold spores (fungi) 	Non-allergen (man-made) <ul style="list-style-type: none"> • oil-chemical pollutants • transplanted tissue cells • blood transfusions • pharmaceutical drugs

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Ecosystem lessons

- ◇ embryo toxicity
- ◇
- ◇
- ◇
- ◇
- ◇

Photo: Milo Burcham

+20 years

2009 Dave Janka

Photo: Milo Burcham

Photo: Prince William Sound Aquaculture Corporation

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Ecosystem lessons

- ◇ marine snow moves oil down
- ◇
- ◇
- ◇
- ◇

Coastal Care

Photos: NOAA

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collaborating evidence of harm

< 1-20 ppb PAHs
can cause harm

- ✧ 1,000 times lower than current laws
- ✧ laws do not protect from oil exposures

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community harm... & healing

Financial stress & untreated trauma

- ✧ Suicides
- ✧ Domestic violence
- ✧ Divorces
- ✧ Substance abuse

1993 – Fishermen's blockade of Valdez Narrows



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mitigation: do NO more harm

Ecosystem harm

- ✧ NO toxic dispersants or agents
- ✧ funds for pre- & post-studies

Human harm

- ✧ evidence-based research
- ✧ evacuate coastal populations
- ✧ community right-to-know
- ✧ treat contract workers like employees

Community harm

- ✧ support Peer Listening Circles
- ✧ fund through lease sales



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selected resources

- Government Accountability Project (GAP), 2013, *Deadly Dispersants* and 2015 Addendum. <http://whistleblower.org/gulftruth>
- Kirby, 2012, Persistence of PAHs. http://surfrider.org/images/uploads/publications/Corexit_Connections.pdf
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- PWS RCAC, 2004, Coping with technological disasters. <http://www.pwsrca.org/programs/oil-spill-prevention/coping-with-technological-disasters/>
- Schwacke LH et al., 2014, Dolphins in Barataria Bay. <http://pubs.acs.org/doi/full/10.1021/es403610f#showRef>
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- Venn-Watson S et al., 2015, Dolphin UME. doi:10.1371/journal.pone.0117248

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environmental health literacy



TOXIC TRESPASS program

- ✧ trainer's manual
- ✧ learning guide

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www.ALERTproject.org



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public data: exposure app



<http://theexposureapp.com>
www.theRisingFilm.tv

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Respirator statements

- Unified command is not providing respirators for beach clean-up teams or near-shore water operations.
- Air sampling offshore has shown no indications of volatile organic compounds (VOCs) or other contaminants that require respirators in
- If you wear a respirator, your **job** will be **terminated**.



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