



**Auke Bay Laboratory**  
National Marine Fisheries Service  
National Oceanic and Atmospheric Administration



# **Behavioral Responses of Pink Salmon Fry to Oil Dispersants and to Dispersed, Weathered, and Undispersed Crude Oil**

**Dr. Adam Moles**



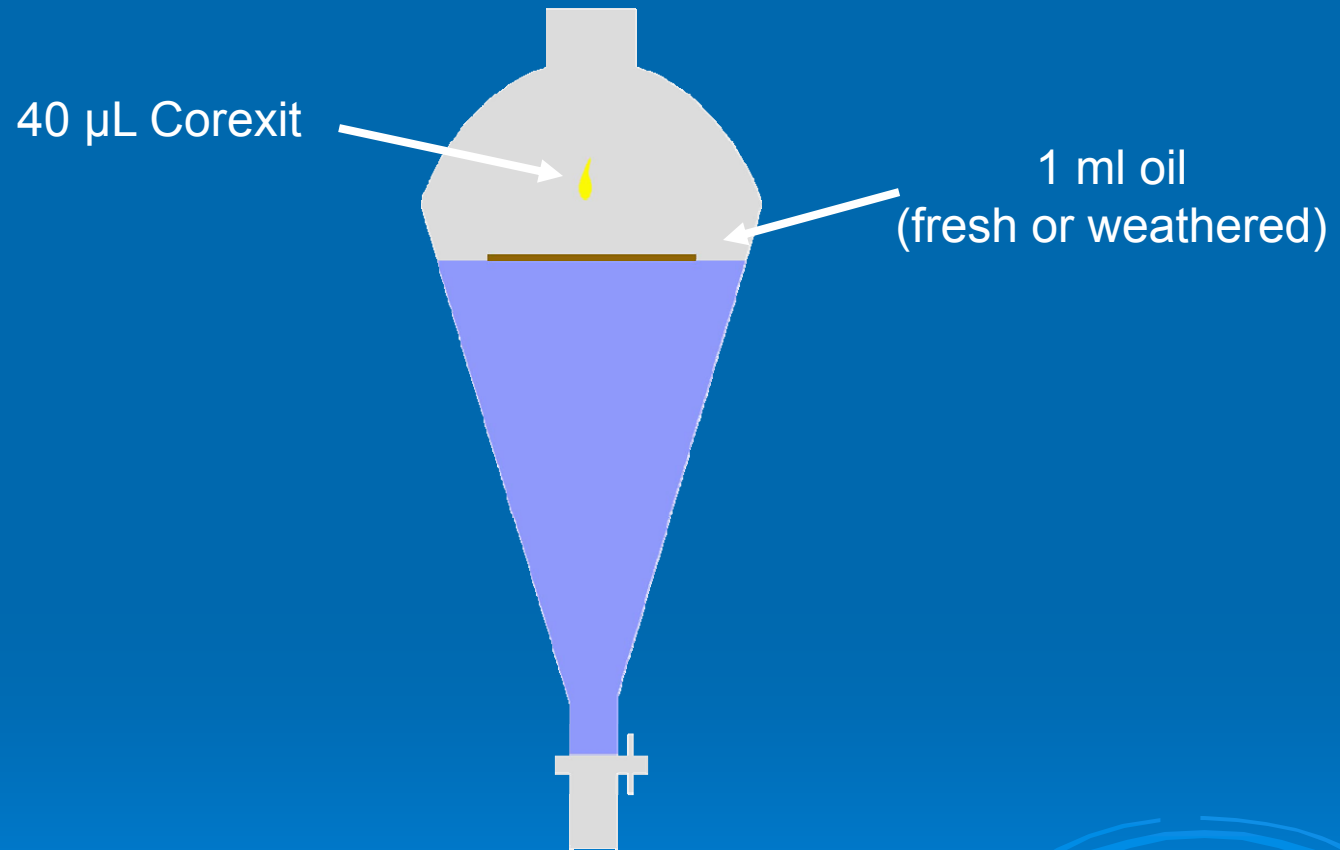
# Objectives

- Determine concentrations that fry avoid
  - **Water accommodated fractions (WAF)**
    - **Fresh** Alaska North Slope crude oil
    - **Dispersed** Alaska North slope crude oil
    - **Weathered** Alaska North Slope crude oil
    - Corexit 9527
- Relate to toxicity

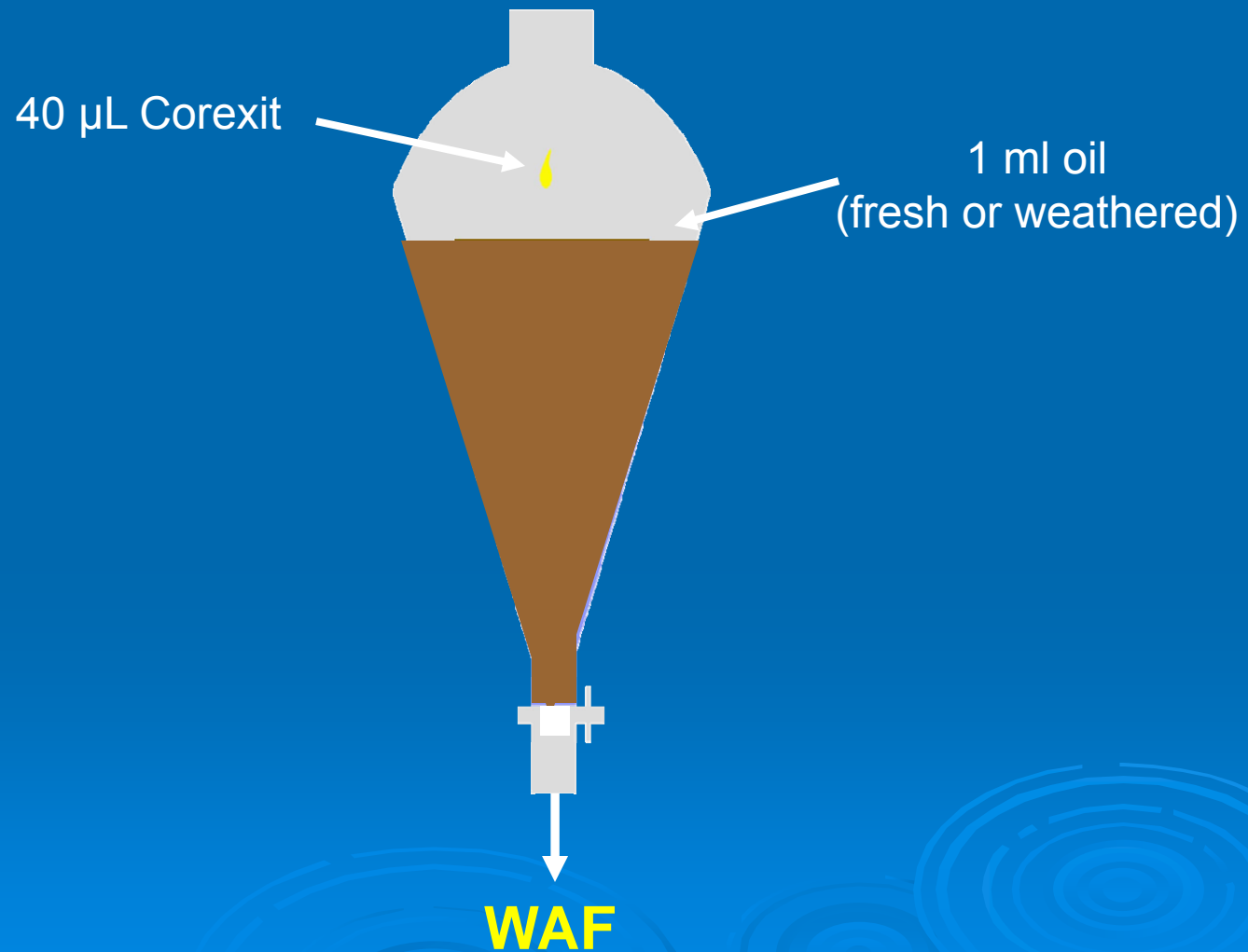
# Preparation of WAF



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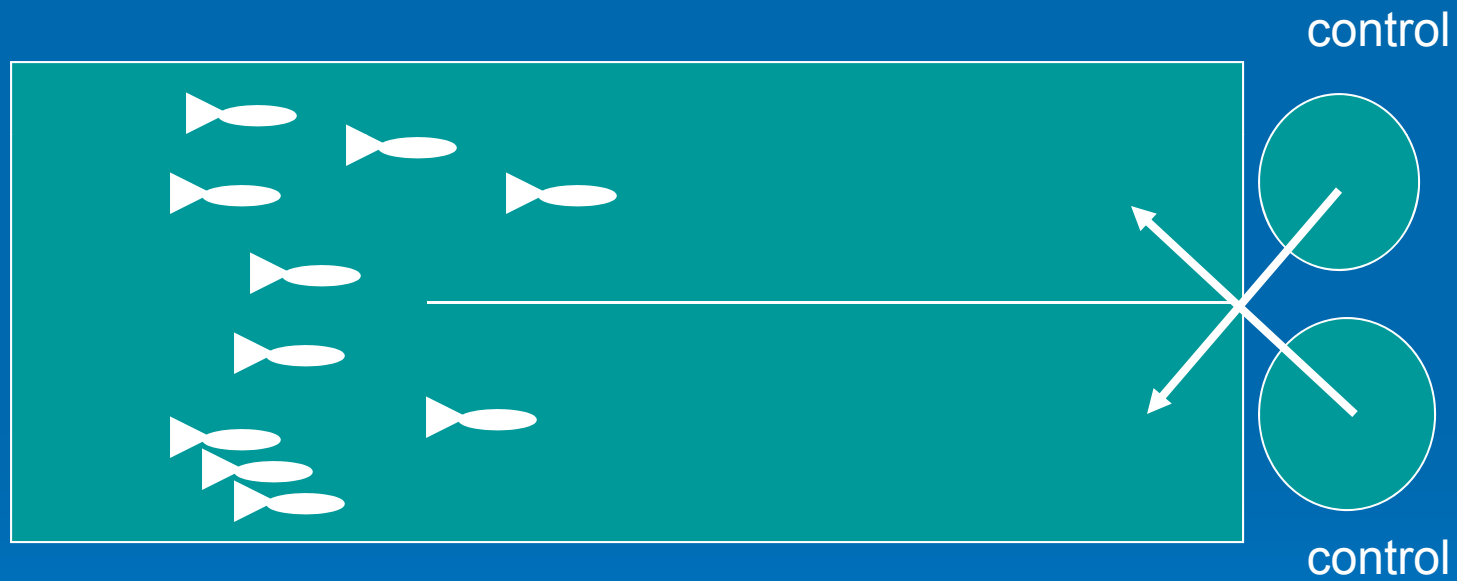


# Preparation of WAF



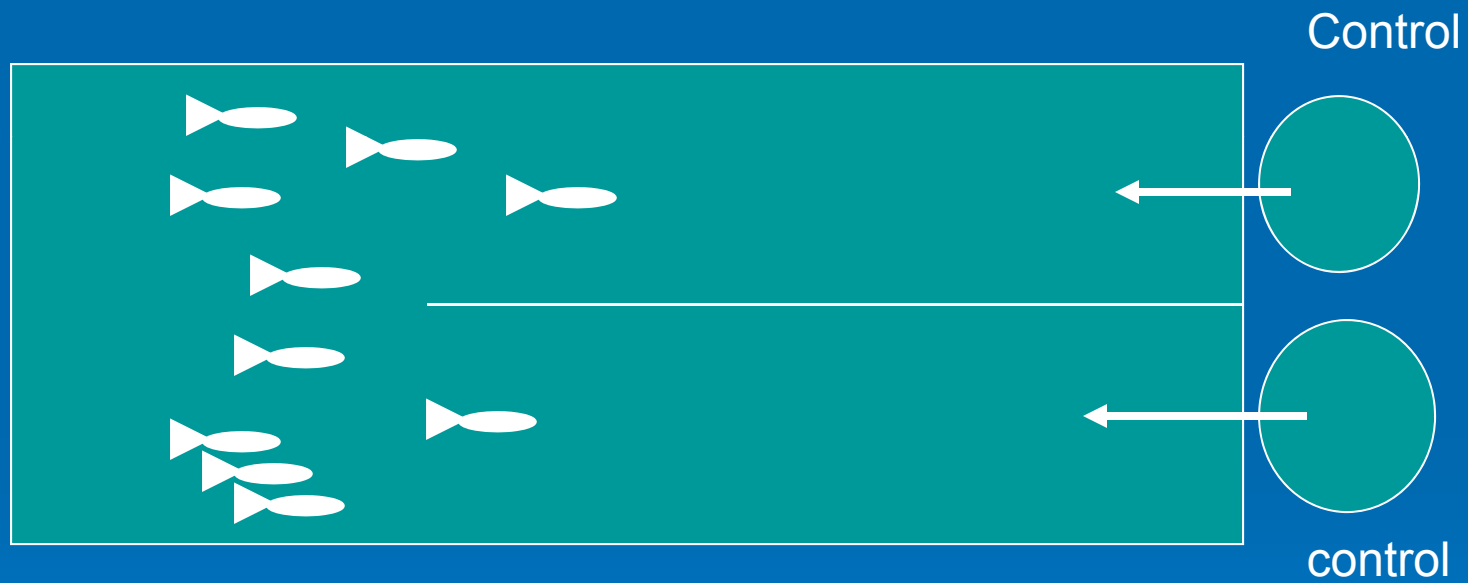
# Avoidance Apparatus

➤ 30‰, 7°C



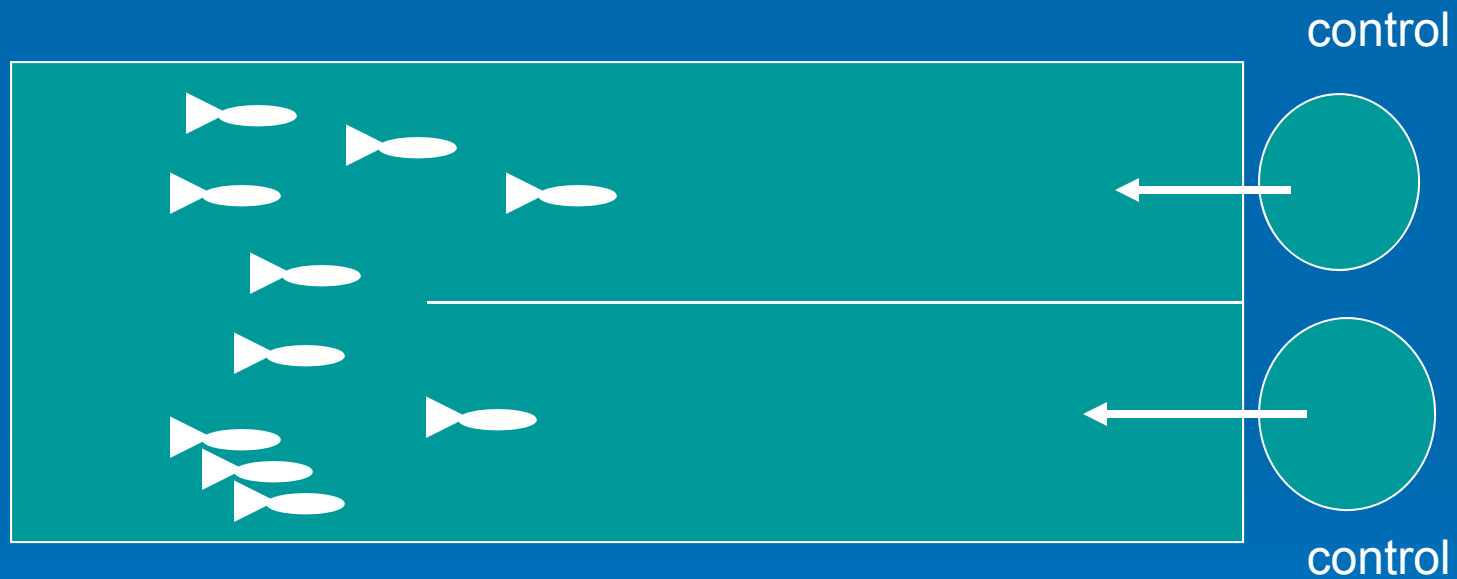
# Avoidance Apparatus

➤ 30‰, 7°C



# Avoidance Apparatus

➤ 30‰, 7°C



10 fish

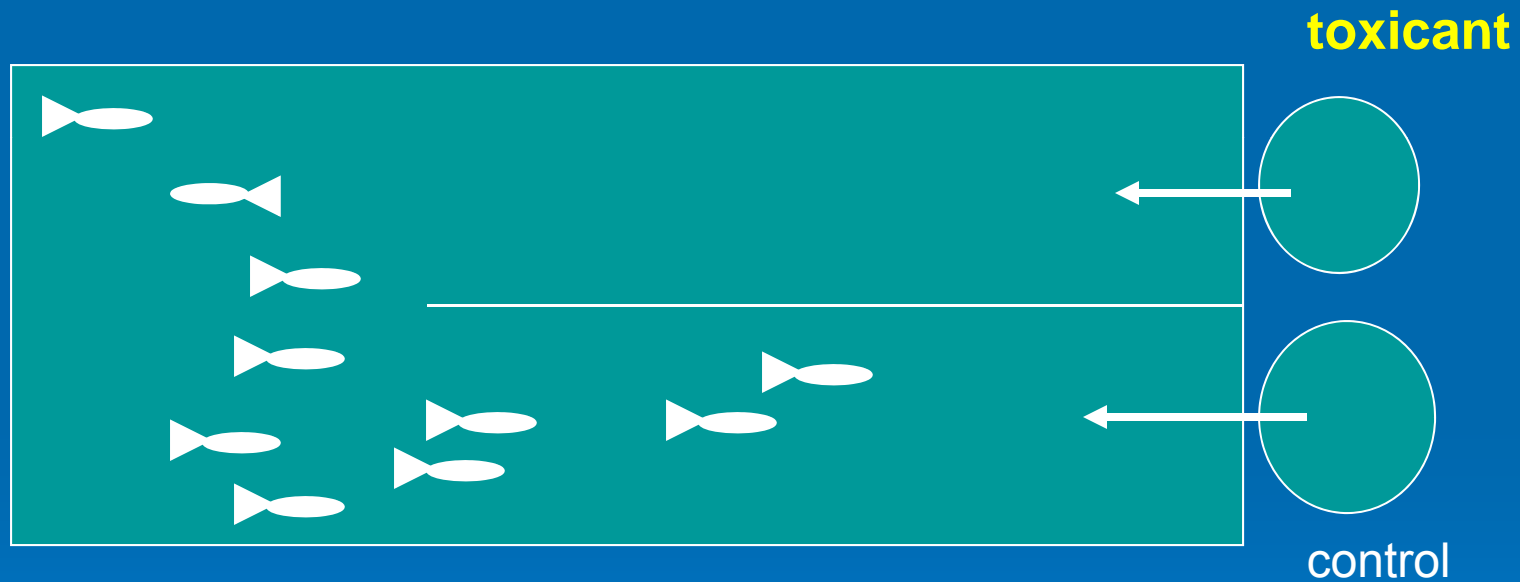
10 min acclimation

15 min observation



# Avoidance Apparatus

➤ 30‰, 7°C

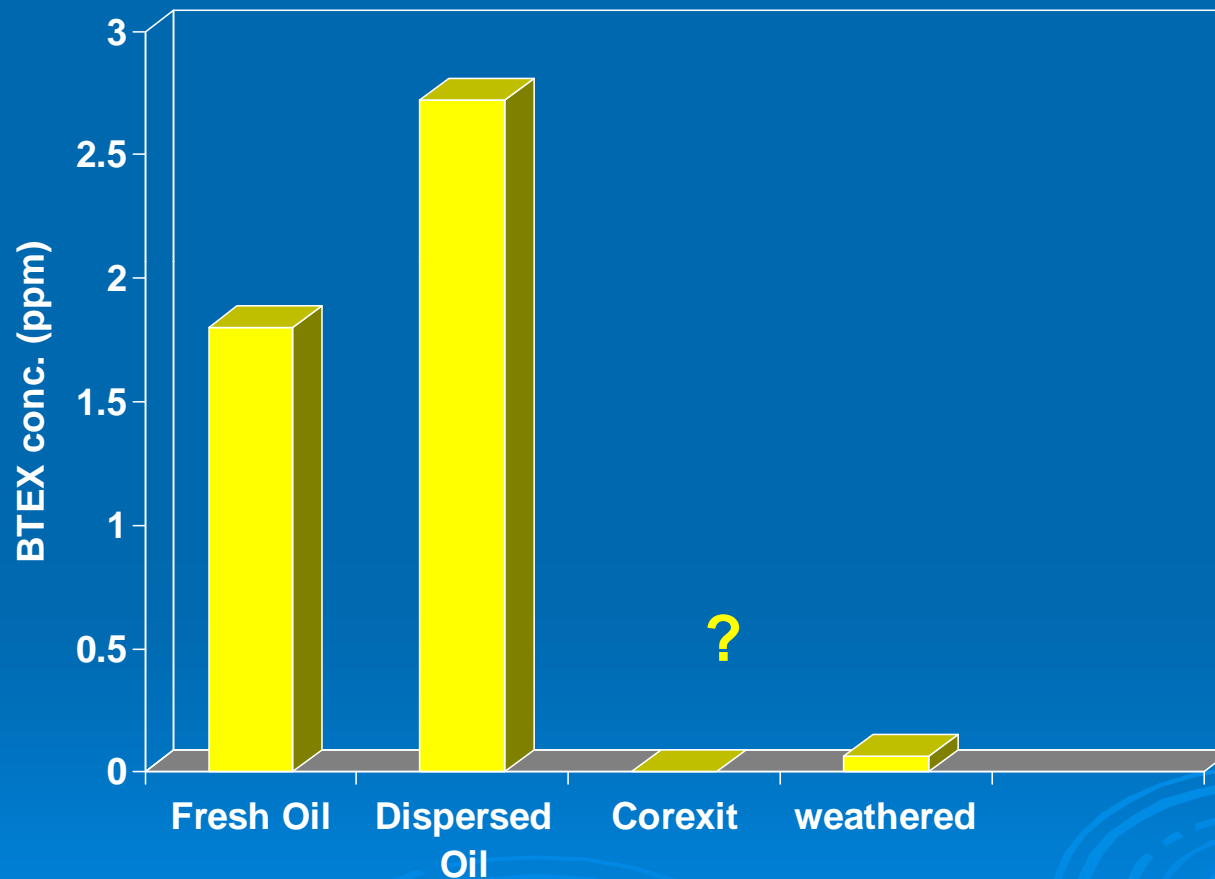


10 fish  
+ Toxicant

10 min acclimation  
10 min acclimation

15 min observation  
15 min observation

# Doses (BTEX)

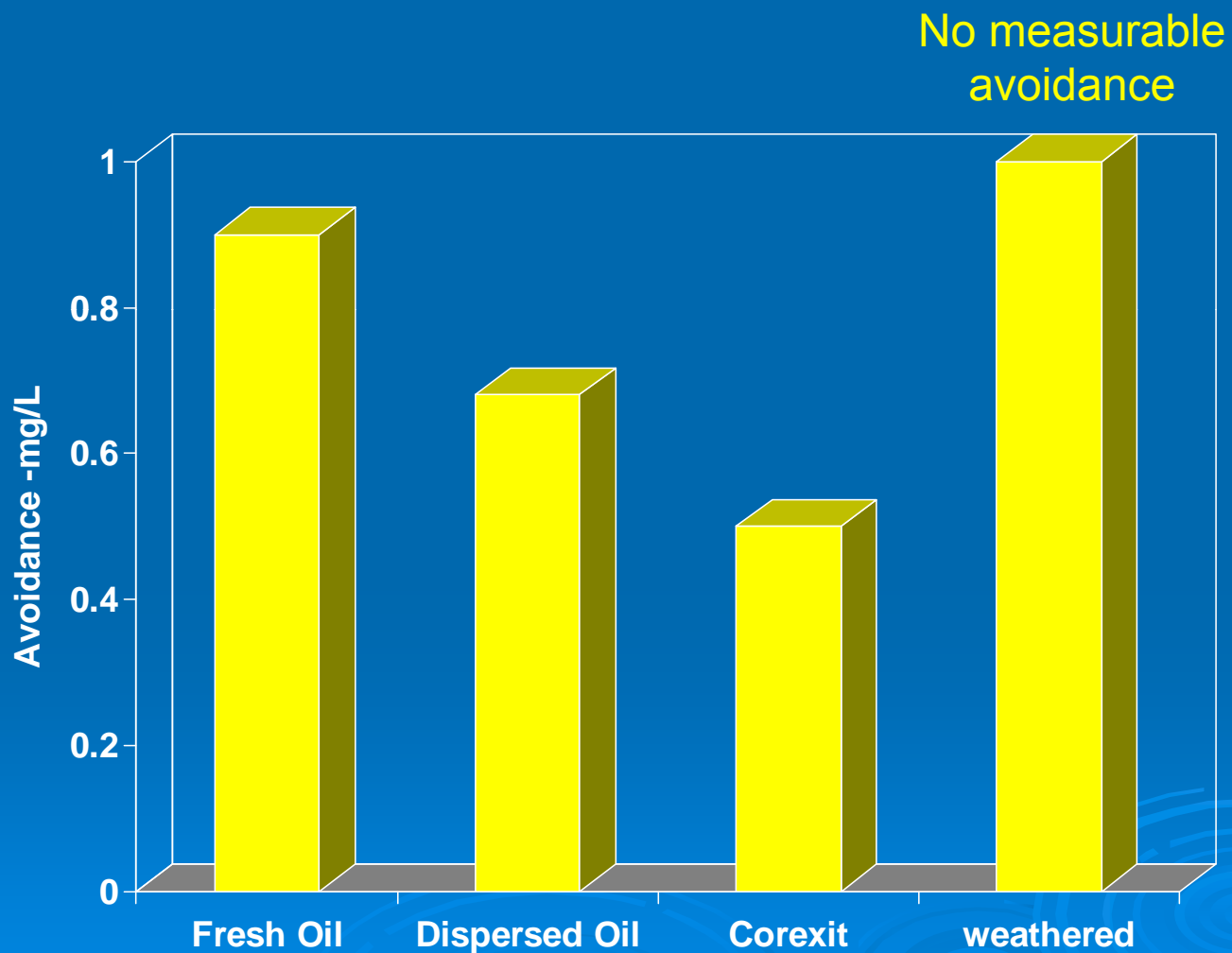


PAH have not been measured yet

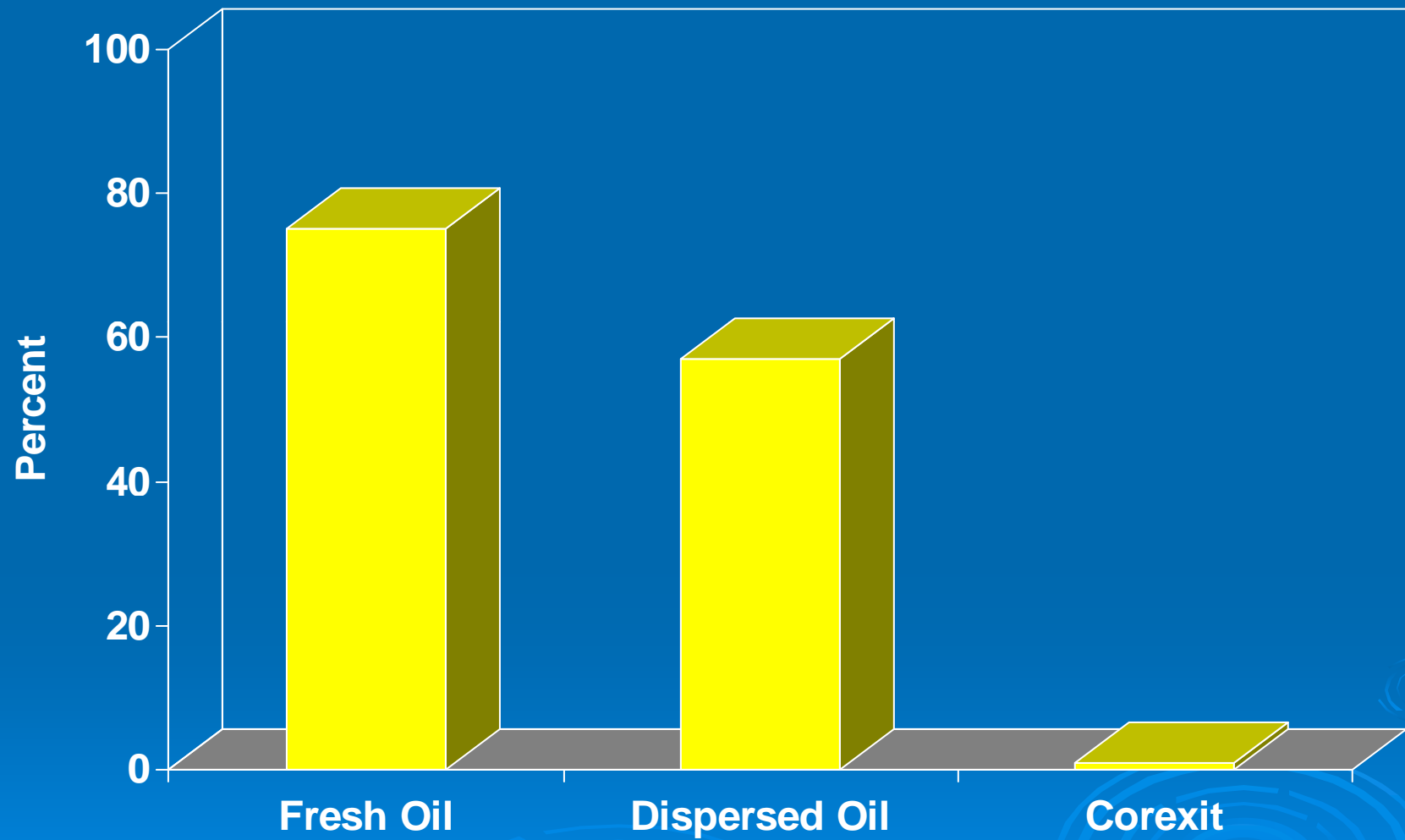
# Toxicity



# Avoidance



## Avoidance as % of LC50



# Summary

Treatment	Avoidance (% of LC50)	BTEX (ppm)
Dispersed oil	~57%	<b>Highest</b> 2.7

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Dispersed oil	~57%	Highest 2.7
Fresh oil	75%	1.8

# Summary

Treatment	Avoidance (% of LC50)	BTEX (ppm)
Dispersed oil	~57%	Highest 2.7
Fresh oil	75%	1.8
Weathered oil	no avoidance	0.7



# Summary

Treatment	Avoidance (% of LC50)	BTEX (ppm)
Dispersed oil	~57%	Highest 2.7
Fresh oil	75%	1.8
Weathered oil	no avoidance	0.7
Corexit 9527	<1%	?

