

# Overview and Comparison of Two Major Oil Spills in the Yellowstone River

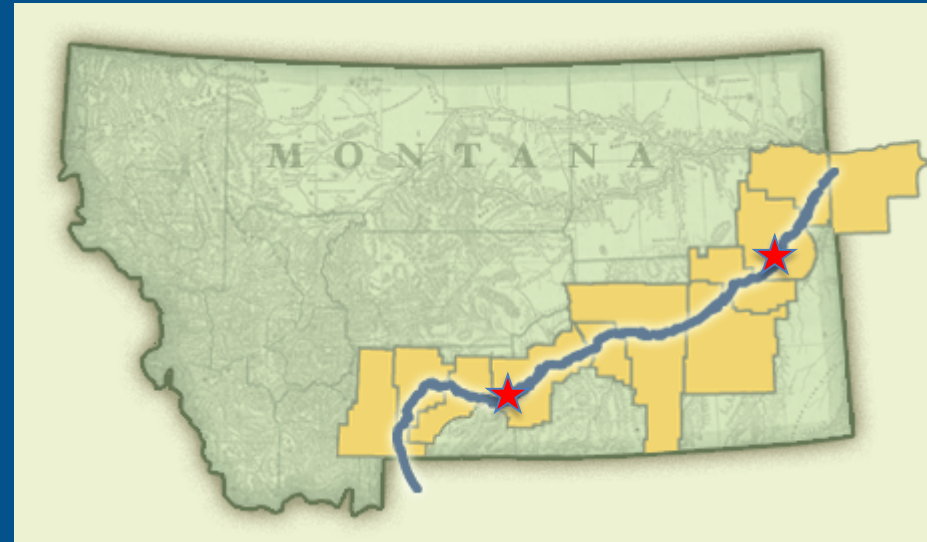
North Dakota Water Quality Monitoring Conference

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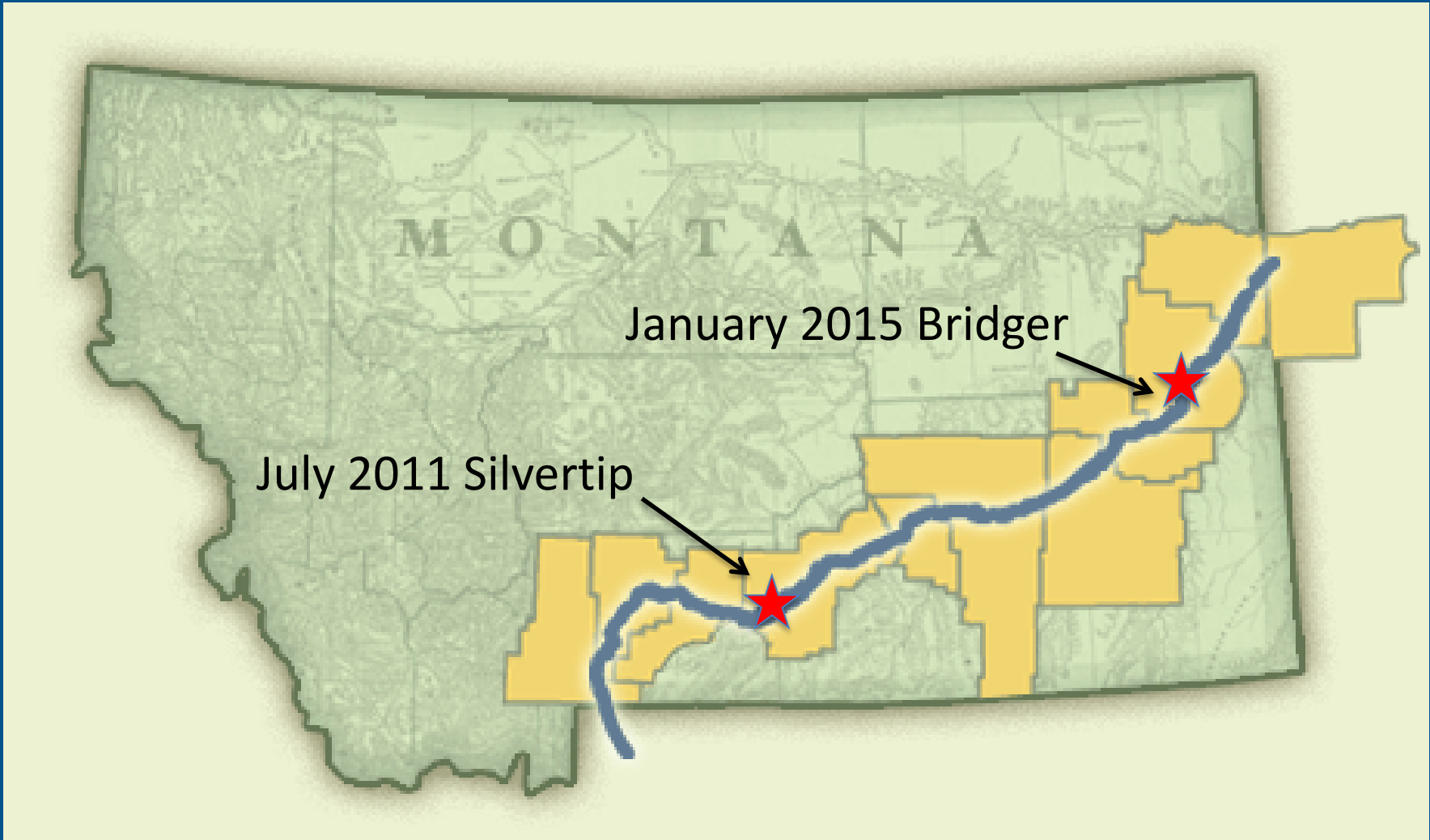
Groundwater Remediation Program

Montana Department of Environmental Quality



# Topic Overview

- Brief summary of each pipeline spill
- Similarities and differences between the two releases
- Challenges and “lessons learned”



# Silvertip and Bridger Similarities

- Pipeline break in Yellowstone River that released crude oil
- Pipeline owner/operator cooperative, lead response and cleanup
- EPA lead oversight (initially)
- Incident Command System for management of response
- Overall objectives: protect human health and the environment
- Media addressed
- Cleanup criteria
- DEQ assessed penalties
- Safety first!



# Silvertip and Bridger Similarities

- Agencies involved:
  - **Federal Government:** USEPA, USCG, USFWS, Pipeline & Hazardous Materials Safety Administration (PHMSA) /DOT, DOJ/Federal Natural Resource Trustee, others
  - **State Government:** DEQ, Disaster & Emergency Services, MT Fish Wildlife & Parks, Natural Resources & Conservation, Natural Resource Damages Program, Department of Agriculture, Governor's office, others
  - **City and county governments, tribes, others**

# 2011 ExxonMobil Silvertip Pipeline Release

- July 1, 2011
- Near Laurel, MT (upstream of Billings, MT)
- 1500 barrels oil (63,000 gallons)
- River flowing at 65,000 CFS (13,500 CFS July average)
- River water overbank
- Historic flooding







Silvertip: Sheens and oil trapped in debris





Silvertip: “bathtub” oil ring on banks and vegetation



Silvertip: “bathtub” oil ring on banks and vegetation (natural attenuation)



Silvertip: Floating oil deposited in backwaters



Silvertip Cleanup: Cutting oiled vegetation



Silvertip Cleanup: cutting oiled vegetation





Silvertip Cleanup: Removing large oiled debris



## Silvertip Cleanup: Sorbents





## Silvertip Cleanup: Sorbents



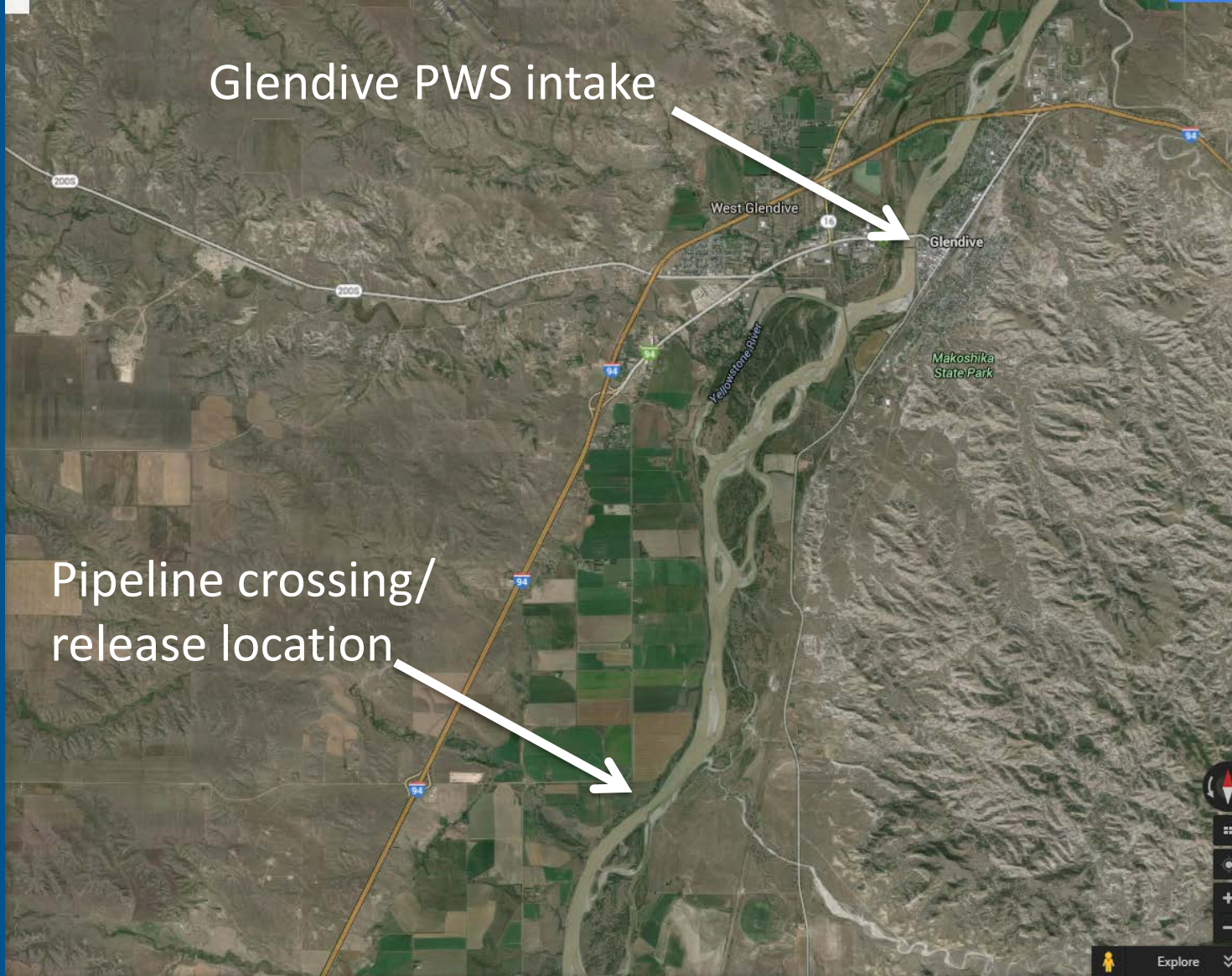


Silvertip Safety Issues: snakes, biting insects, poison oak, etc...

# 2015 Bridger Poplar Pipeline Release

- January 17, 2015
- 6 miles upstream (south) of Glendive, MT
- 758 barrels oil (31,836 gallons)
- River flowing at 7,800 CFS (Average 5,090 CFA in January)
- River water in bank
- River covered in ice





Glendive PWS intake

Pipeline crossing/  
release location

Bridger: Pipeline break 6.25 miles  
upstream of Glendive



Bridger: Glendive Public Water Supply

# Bridger: Glendive Public Water Supply (PWS) timeline

- **Saturday 1/17/15**: Bridger reports possible crude oil release 6 miles upstream of Glendive, PWSs notified: Glendive, MDU, Williston, and North Dakota Public Health
- **Sunday 1/18/15**: Some Glendive residents notice odors in drinking water. MT DEQ and US EPA dispatched to Glendive.
- **Monday 1/19/15**: PWS collects treated water samples. Benzene found at 14 micrograms per liter ( $>$  MCL of 5). CDC recommends no ingestion until further notice. Bridger starts providing bottled drinking water. Work starts to address PWS treatment and distribution systems.
- **Friday 1/23/2015**: Advisory lifted







Bridger: EPA Mobile Laboratory



Bridger: Oil trapped in and under ice



Bridger: Trenching for oil recovery difficult. Safety!



## Bridger: Security around trenches



01/29/2015 09:47



Bridger: Some use of sorbents



Bridger: Some use of sorbents



Bridger: Difficult sampling conditions





Bridger: River ice breakup



Bridger: River ice breakup



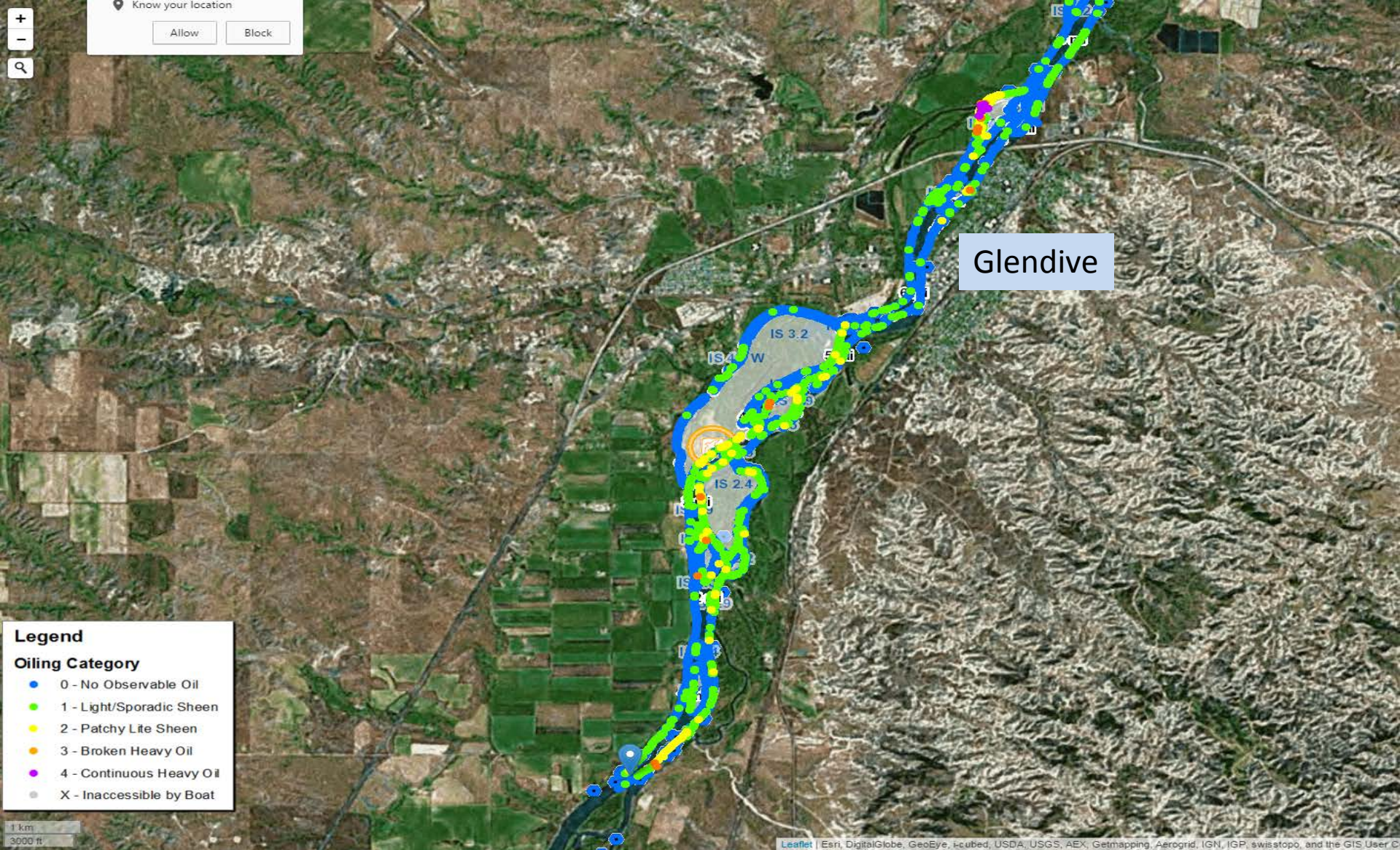
Bridger: Oily ice hung up on shore



Bridger: Oily ice melting released oil



Bridger: Oily ice melting releases oil



## Bridger: Oil Survey Results

# Major Differences

## “Silvertip” July 2011

- No documented Public Water Supply problems
- Hot summer conditions and flooding: safety
- Crude oil was able to float and partially evaporate
- Oil deposited overbank: extensive surface oiling
- Extensive reclamation post-cleanup

## “Bridger” January 2015

- Public Water Supply contaminated
- Cold winter conditions and ice: safety
- Crude oil trapped in and under ice
- Most oil remained in the river channel, minimal surface oiling
- Minimal reclamation post-cleanup

# Big Picture Lessons

- EPA may have different expectations for cleanup than State
- Incident Command System will be used for response: get training
- Communication and flexibility important
- Plan for it!
- Identify pipeline crossings under rivers
- Understand funding sources ahead of time
- Understand cleanup authorities ahead of time





Questions ?