

# Response Tiers & Best Available Technology

University of Alaska, Fairbanks  
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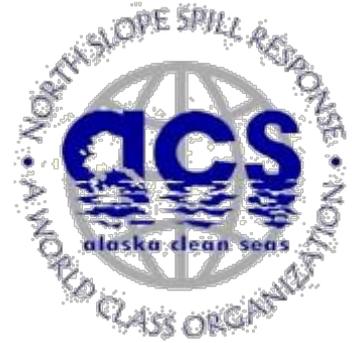
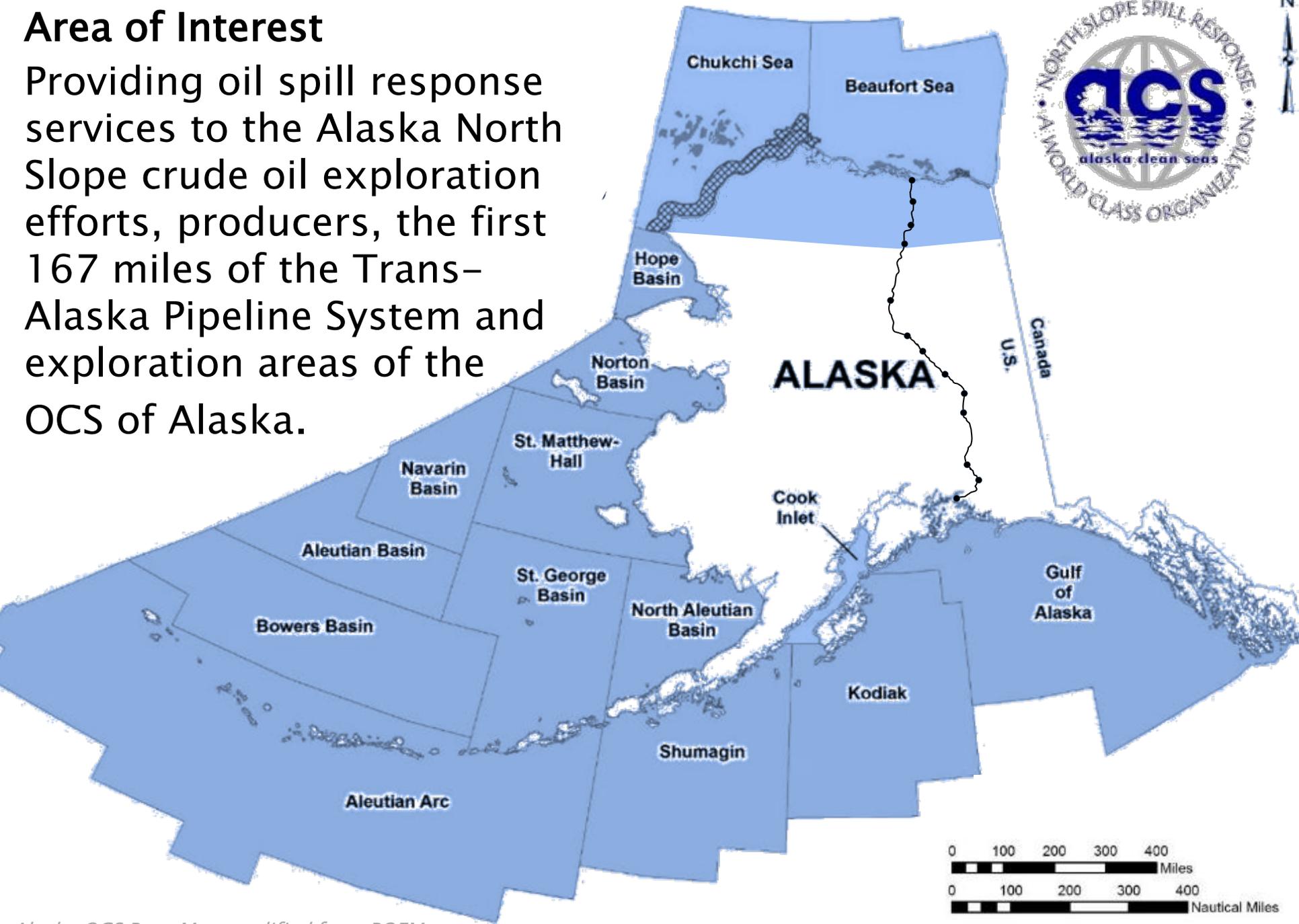
# Topics

- ▶ Alaska Clean Seas Overview
- ▶ ACS Membership and Agency Collaborations
- ▶ Tiered Response Strategy
- ▶ Best Available Technology (BAT) Overview



# Area of Interest

Providing oil spill response services to the Alaska North Slope crude oil exploration efforts, producers, the first 167 miles of the Trans-Alaska Pipeline System and exploration areas of the OCS of Alaska.



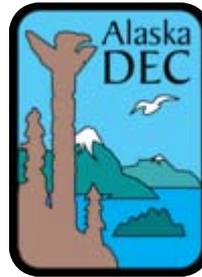
# ACS Co-Op Membership



- ▶ Alyeska Pipeline Service Company
- ▶ Anadarko Petroleum Corporation
- ▶ BP Exploration (Alaska) Inc.
- ▶ Brooks Range Petroleum Corporation
- ▶ ConocoPhillips Alaska Inc.
- ▶ Eni U.S. Operating Company Inc.
- ▶ ExxonMobil Production Company
- ▶ Great Bear
- ▶ Pioneer Natural Resources (USA)
- ▶ Savant Alaska
- ▶ Shell Exploration & Production Company
- ▶ Repsol

# Government Collaboration

- ▶ North Slope Borough
- ▶ ADEC
- ▶ USCG
- ▶ NOAA
- ▶ BSSE
- ▶ EPA
- ▶ USF&WS
- ▶ BLM
- ▶ ADF&G
- ▶ DOD

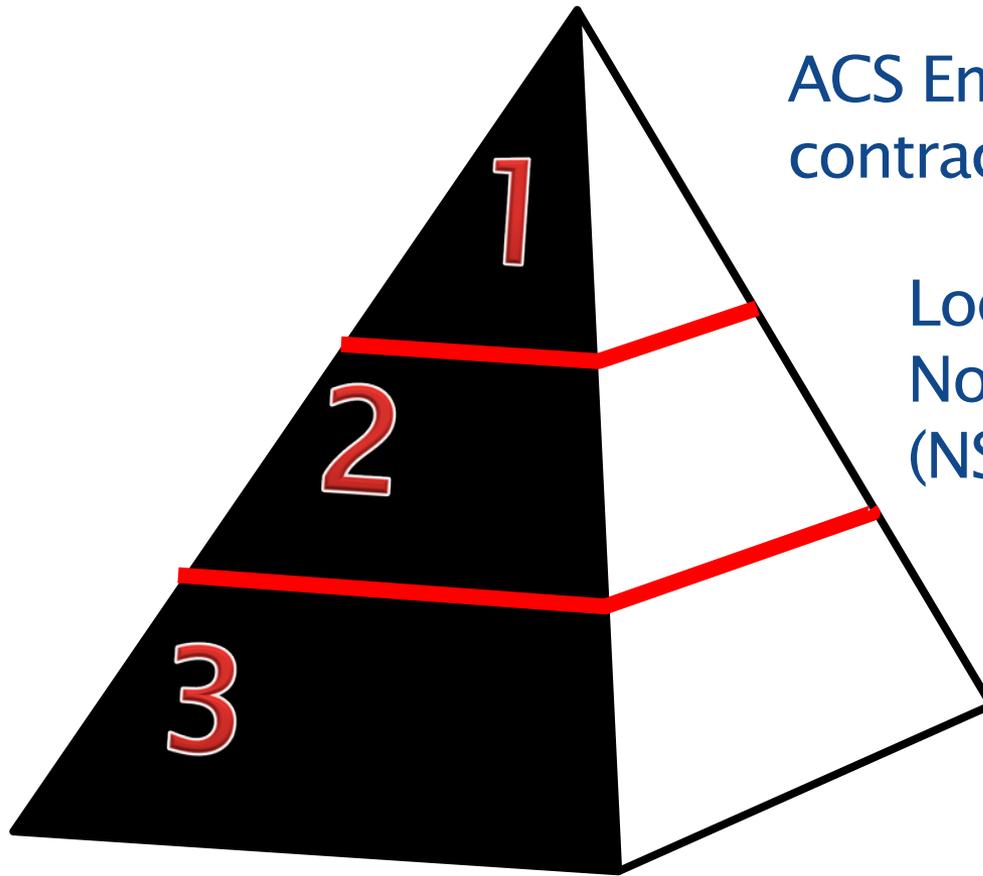




# Alaska Clean Seas Technical Manual

- ▶ Tactics developed by joint industry/Federal/State Project Team
- ▶ Referred to in the North Slope Subarea Plan
- ▶ Applicable to all member companies
- ▶ Priority Protection Sites – Developed through the North Slope Sensitive Areas Working Group
- ▶ Available at [www.alaskacleanseas.org](http://www.alaskacleanseas.org)
- ▶ Manuals have been used by several OSRO's and government agencies in development of similar response manuals

# Personnel Response Tiers



ACS Employees and  
contractors

Local plus Regional Resources;  
North Slope Spill Response Team  
(NSSRT)

Auxiliary Contract Response  
Team (ACRT);  
Village Response Team (VRT);  
Mutual Aid Resources;  
Global Response Network

# Tier 1 Responses

- ▶ Small, routine, short duration spill responses
- ▶ Often managed without an Incident Management Team (IMT)
- ▶ Typically no complicated operational, safety or environmental conditions
- ▶ Locally available personnel and equipment (ACS staff and contractors on field)



# Tier 2 Responses

- ▶ Larger, long-duration, more complex spill responses
- ▶ Managed with an IMT in Unified Command with regulatory agencies
- ▶ Locally resources assisted by in-region assets and Mutual Aid support
- ▶ ACS personnel, Mutual Aid with NSSRT, other available in-region resources



# Tier 3 Responses

- ▶ Large, long-duration, complex spill responses
- ▶ Managed with an IMT in Unified Command (Area Command, if necessary)
- ▶ Out-of-region support needed to meet resource requirements
- ▶ ACS, NSSRT, ACRT and VRT; out-of-region personnel and equipment; Global Response Network



# Best Available Technology

- ▶ Oil companies and Oil Spill Removal Organizations (OSROs) actively engage in developing BAT for prevention and response
- ▶ BAT is required by Federal and State law to be part of contingency plans
- ▶ Reevaluated at contingency plan reviews
- ▶ Oil spill BAT and R&D must meet an identified operational need (newer is not always better)
- ▶ No “science for the sake of science” – New technologies should provide effective tools to support field operations

# Best Available Technology

- ▶ Overall cleanup goals are to remove spilled oil from the environment using the safest, least invasive and least damaging methods
- ▶ Primary cleanup methods remain:
  - Mechanical recovery (skimmers, pumps, etc.)
  - In-situ burning
  - Dispersant application
  - Natural recovery



# Best Available Technology

- ▶ Global Response Network Operational Teams
  - Offshore Recovery
  - Nearshore/Shoreline Response
  - Remote Sensing
  - Dispersants
  - In-situ Burning
  - Response Management
  - Ice-Covered Waters
- ▶ Arctic Council Oil and Gas Assessment (OGA)
- ▶ American Petroleum Institute (API)
- ▶ Joint Industry Task Force (JITF) and Joint Industry Project (JIP)



# Global Activities

- ▶ International Oil Spill Conference
- ▶ International Mechanical Recovery In Ice Workshop
- ▶ APICOM
  - Association of Petroleum Industry Cooperative Managers
- ▶ AMOP (Government of Canada)
  - Arctic and Marine Oil Spill Program Technical Seminar on Environmental Contamination and Response

International Oil Spill Conference



API • BSEE • IMO • IPIECA • NOAA • USCG • USEPA

**IOSC 2014**



**ARCTIC  
RESPONSE  
TECHNOLOGY**  
OIL SPILL PREPAREDNESS



# Best Available Technology

- ▶ **BAT Pathway to Success:**
  - Identify a true operational need and benefit
  - Test and evaluate
  - Determine whether an idea is commercially viable
  - Develop, train personnel and incorporate as tactic
- ▶ **MUST be Arctic-deployable**
- ▶ Many ideas originate in the field (“necessity is the mother of invention...”)
- ▶ Alaska Clean Seas, our member companies and regulatory community remain active in oil spill R&D and attend conferences to evaluate new products and techniques

# Best Available Technology

- ▶ New technology comes in different forms
  - Built for purpose (“classic” product R&D)
  - Preexisting product modified and applied to new function
- ▶ Communication between the designer and the field user is paramount!



# Current Uses of BAT

- ▶ Remote sensing for oil under ice
- ▶ Unmanned Aerial Vehicles (UAV) and Autonomous Underwater Vehicles (AUV)
- ▶ Oil Herders and Igniters
- ▶ Heated skimmers and hoses



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# Questions & Additional Information?

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