Priority Science and Research Needs and the Oil Pollution Act of 1990

Scott Lundgren

February 2018

Gulf of Mexico Oil Spill & Ecosystem Science Conference 2018

My Perspective and Background

- Career practitioner in the spill response and incident management fields
  - 23 years as Coast Guard civilian, supporting Northeast field units, and later nationally at HQ
  - 3 years at NOAA as Emergency Response Division (ERD) Chief in the Office of Response & Restoration
    - ERD has for 40 years provided the Scientific Support Coordinators and Team to Coast Guard spill leadership
    - DOC/NOAA National Response Team representative, and NOAA ICCOPR representative/vice chair
- My own perspective, based on roles in the system

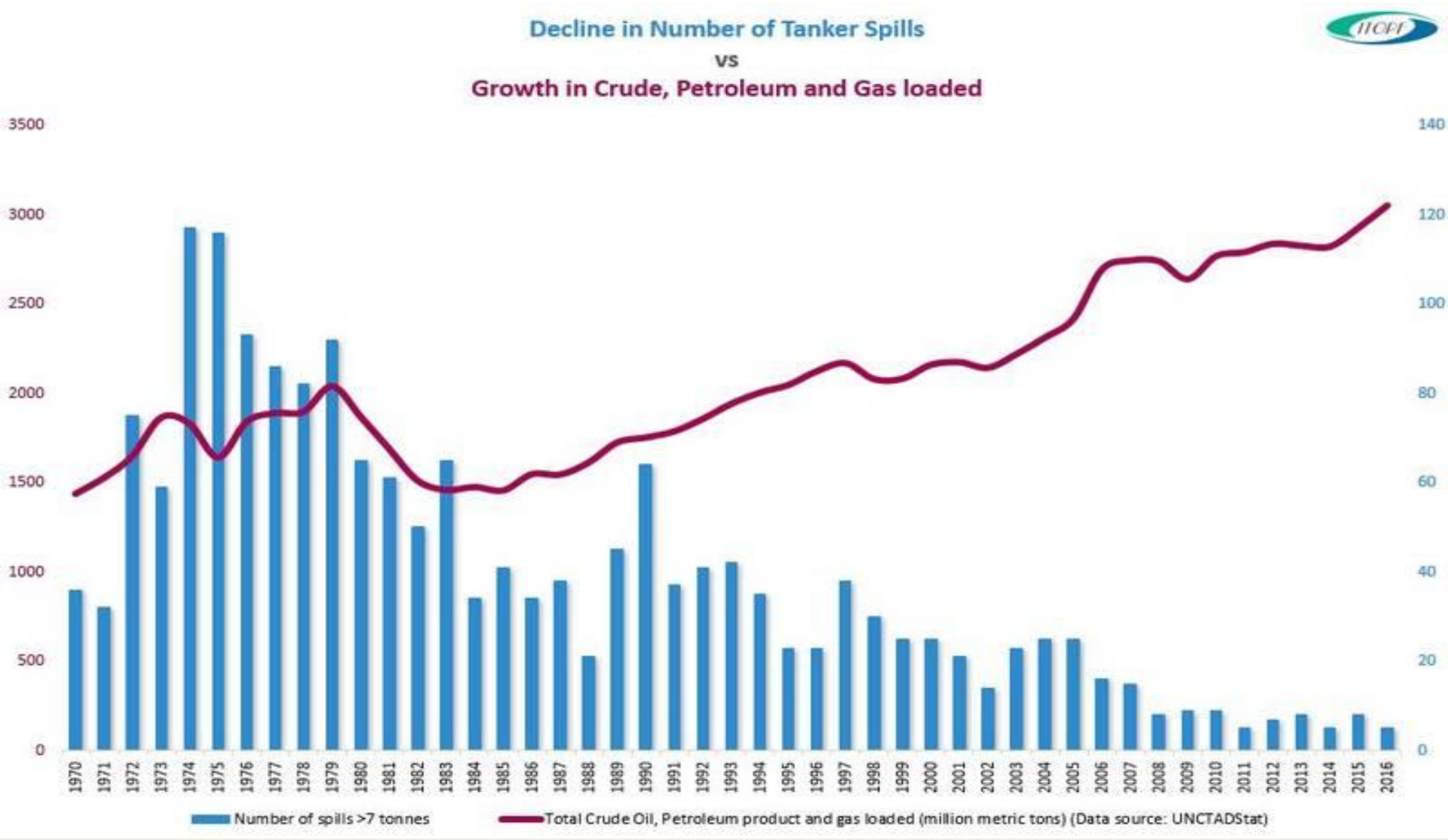
Disclaimer

The views, findings, and conclusions expressed in this presentation are those of the author and do not necessarily represent the views of the Department of Commerce / National Oceanic and Atmospheric Administration (NOAA).

OPA 90 - General

- Enhanced National Response System with stronger prevention, response, liability, and compensation
- Solidified environmental response as principally a regulated private endeavor vs. public function as compared to other emergencies
  - Regulated polluter prepares, responds, pays
  - Stronger federal response oversight and resources in unified approach with states (Unified Command, minimal pre-emption for issues relating to vessel regulation)
- Natural Resource Damage Assessment: Trustee agencies assess and restore injuries to natural resources including lost public use

Prevention (international):
Tanker Spills (>7 tonnes) vs. Crude/Petroleum/Gas loaded 1970-2016



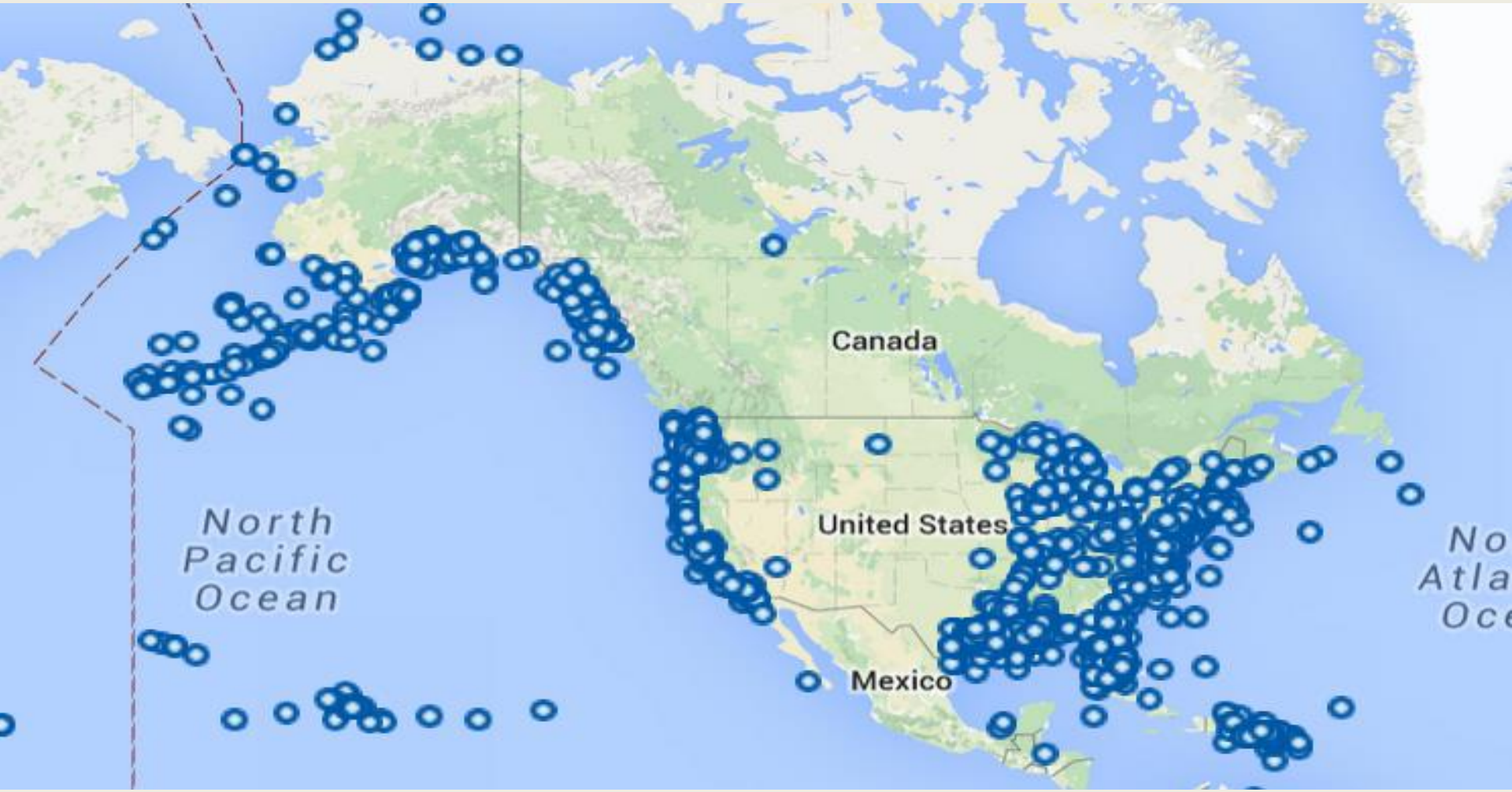
OPA / National Response System: Science, Research Operations and Needs

National Response System: Scientific Support

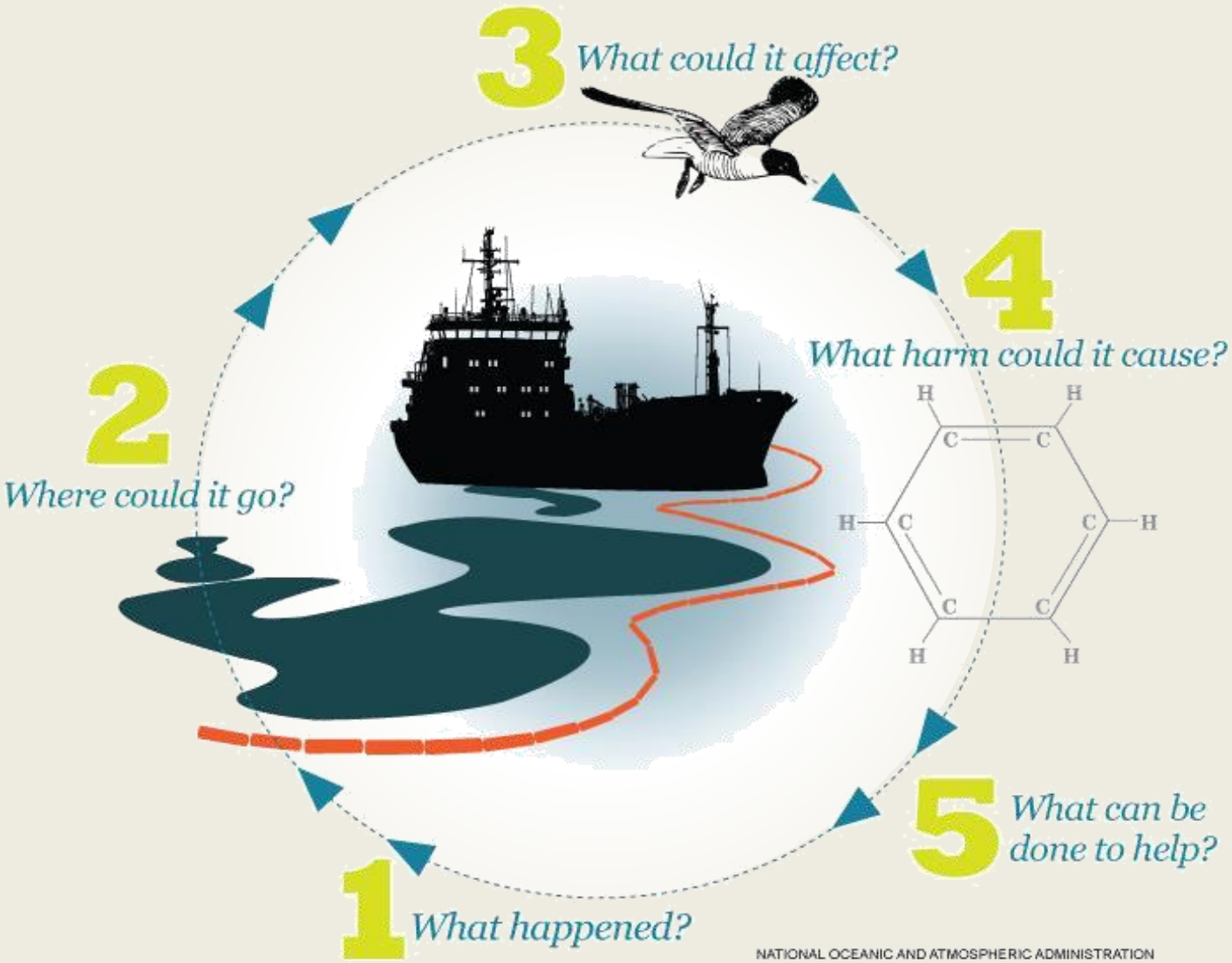
- **Scientific Support first emerged during the 1976 Argo Merchant spill**
  - A DOC/NOAA Spilled Oil Research Team was asked by the Coast Guard for assistance in interfacing with the scientific community
  - "The DOC/NOAA response in providing scientific investigations was invaluable to the OSC during the actual response efforts and in providing public information." … "Each OSC should be assigned a scientific advisor … for the duration of the response action to interface with the scientific community on scene…
    The Argo Merchant Oil Spill On-Scene Coordinator's Report 1977

- **The Scientific Support Coordinator first incorporated in 1980 NCP**
  - It now states: Scientific Support Coordinators (SSCs) may be designated by the OSC … as the principal advisors for scientific issues, communication with the scientific community, and coordination of requests for assistance from state and federal agencies regarding scientific studies. The SSC strives for a consensus on scientific issues affecting the response, but ensures that differing opinions within the community are communicated to the OSC…
    - NCP Special Teams section, 40 CFR 300.145

NOAA Scientific Support since 1976



Questions Guiding NOAA's Oil Spill Science Recommendations



Science at a Spill:
Operational, Injury Assessment, Knowledge

Investigates <u>specific</u> solutions to operational problems in real or near-real time. Direct input to the response.

✓

Provides information to state and federal trustees who are determining environmental injury and restoration requirements

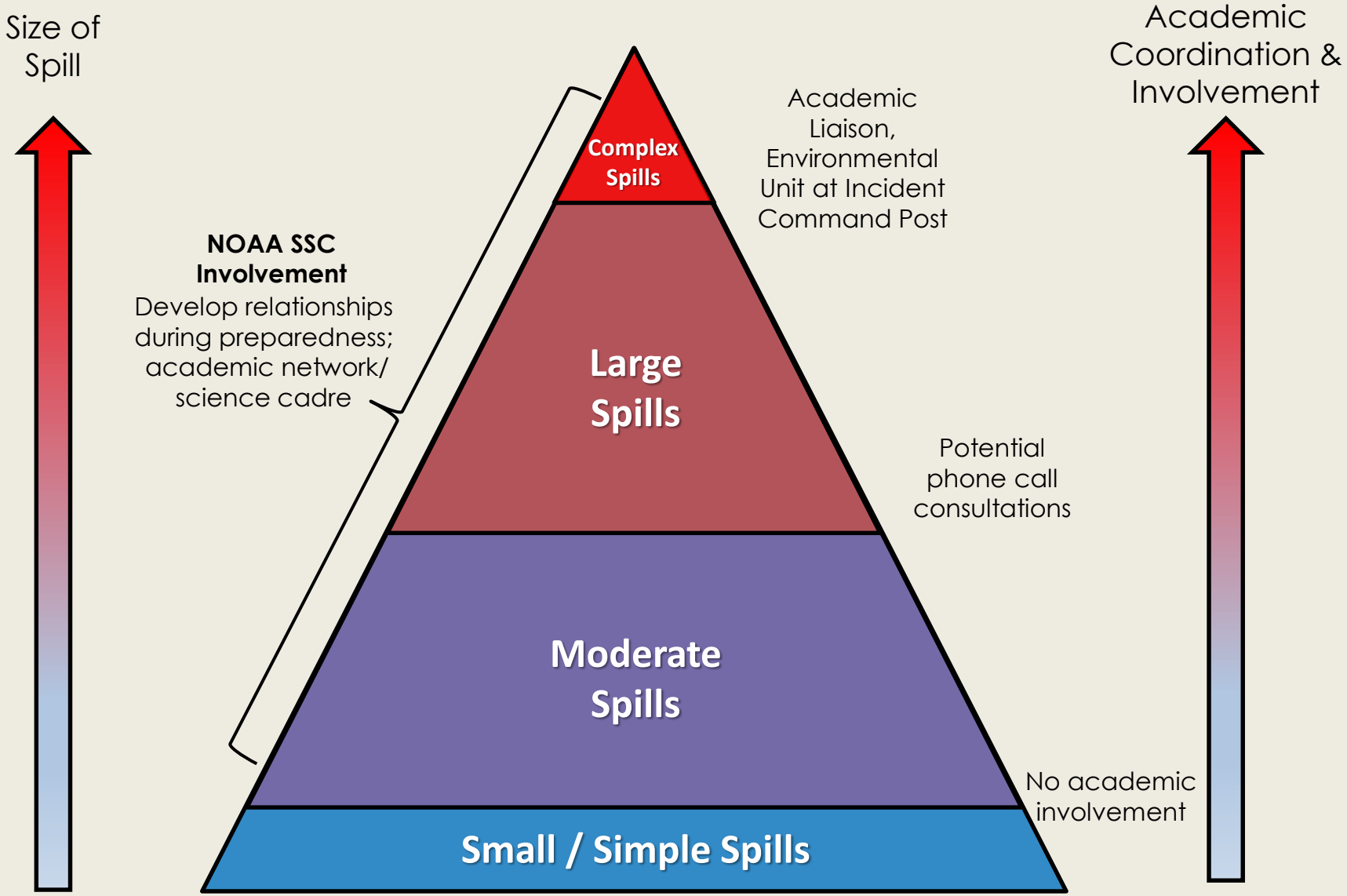
✓

Investigation involving incident in the field yields a better understanding of issues applicable to the next emergency event.

-

*

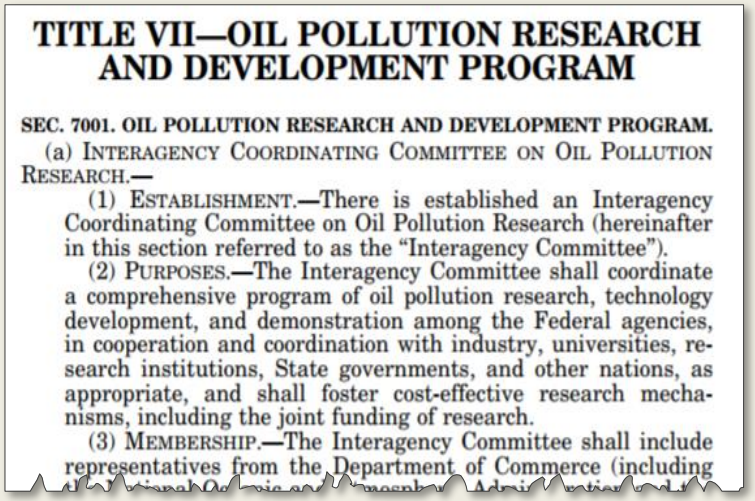
Typical Response Academic Involvement



OPA 90: Approach to Research

Interagency Coordinating Committee on Oil Pollution Research (ICCOPR)

- Title VII of OPA: Brought together 15 member agencies conducting research on oil spills.
- Purpose: (1) Prepare coordinated federal oil pollution research and technology plan (OPRTP); and (2) to promote cooperation with industry, universities, research institutions, state governments, and other nations through information sharing, coordinated planning, and joint funding of projects.



TITLE VII—OIL POLLUTION RESEARCH AND DEVELOPMENT PROGRAM

SEC. 7001. OIL POLLUTION RESEARCH AND DEVELOPMENT PROGRAM.

(a) INTERAGENCY COORDINATING COMMITTEE ON OIL POLLUTION RESEARCH.—

(1) ESTABLISHMENT.—There is established an Interagency Coordinating Committee on Oil Pollution Research (hereinafter in this section referred to as the "Interagency Committee").

(2) PURPOSES.—The Interagency Committee shall coordinate a comprehensive program of oil pollution research, technology development, and demonstration among the Federal agencies, in cooperation and coordination with industry, universities, research institutions, State governments, and other nations, as appropriate, and shall foster cost-effective research mechanisms, including the joint funding of research.

(3) MEMBERSHIP.—The Interagency Committee shall include representatives from the Department of Commerce (including

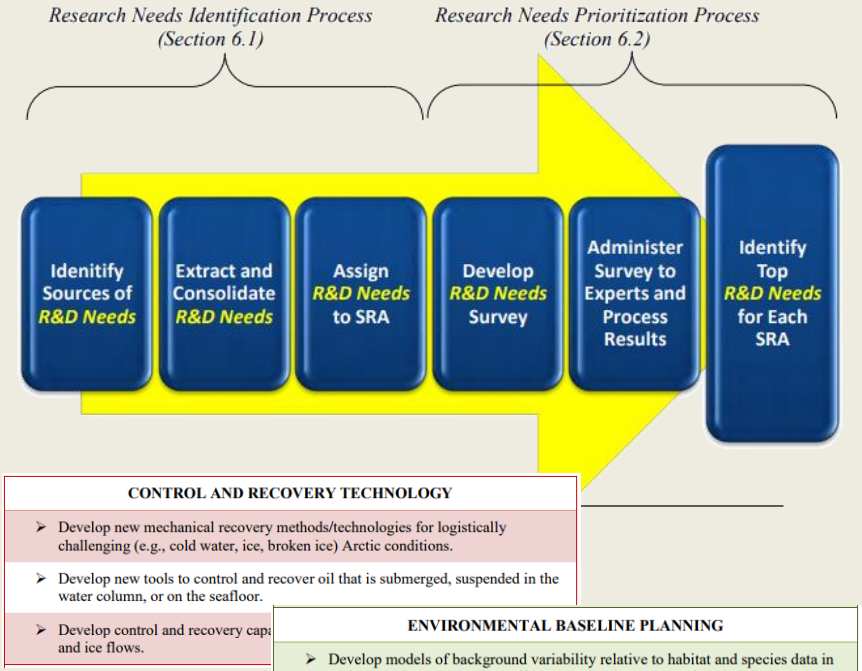
- Regional grants 1991-1995
- Research & Technology Plan 1992, 1997, 2015
- Coordination rekindled 2009+
- Individual agency funding only

Research Needs: Research & Technology Plan

- ICCOPR R&T Plan: establishes priorities;
  agencies fund based upon appropriations during “peacetime”

RESEARCH CLASSES → STANDING RESEARCH AREAS (SRAs) → RESEARCH NEEDS → RESEARCH PROJECTS

Prevention	Preparedness	Response	Injury Assessment & Restoration
• Human Error Factors • Offshore Facilities and Systems • Onshore Facilities and Systems • Waterways Management • Vessel Design • Drilling • Rail & Truck Transportation • Pipeline Systems	• Pre-spill Baseline Studies • Response Management Systems	• Structural Damage Assessment and Salvage • At Source Control and Containment • Chemical and Physical Behavior Modeling • Oil Spill Detection and Surveillance • In- and On-water Containment and Recovery • Shore Containment and Recovery • Dispersants • In-situ Burning • Alternative Countermeasures • Oily and Oil Waste Disposal • Bioremediation	• Environmental Impacts and Ecosystem Recovery • Environmental Restoration Methods and Technologies • Human Safety and Health • Sociological and Economic Impacts



CONTROL AND RECOVERY TECHNOLOGY

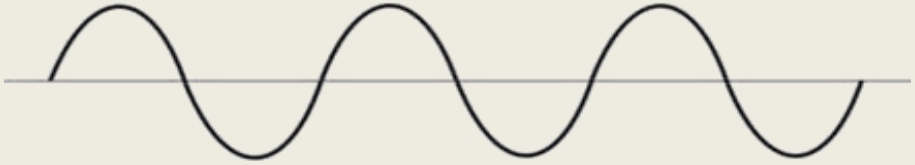
- Develop new mechanical recovery methods/technologies for logistically challenging (e.g., cold water, ice, broken ice) Arctic conditions.
- Develop new tools to control and recover oil that is submerged, suspended in the water column, or on the seafloor.
- Develop control and recovery capa… and ice flows.

ENVIRONMENTAL BASELINE PLANNING

- Develop models of background variability relative to habitat and species data in various environments where oil is transported or extracted so that the impacts from oil or other stressor(s) can be delineated from those of natural variation.
- Evaluate the adequacy of existing ecosystem-based scientific studies for legal defense of Natural Resource Damage Assessment (NRDA) injury assessments for Outer Continental Shelf areas that are currently in production or likely to be explored/developed.
- Conduct baseline studies of microbial communities in a variety of areas where oil is transported or extracted (e.g., Great Lakes, rivers, ports, offshore) and their potential for hydrocarbon degradation in the event of a spill.

Challenges:

- Sustaining investment



- Centers of Research (industry, federal, grants)
- Federal research selection based upon appropriations
- Striking appropriate balance of investments in prevention and response
- Synthesizing and incorporating immense amount of new science across response ↔ restoration continuum

Challenges:

- Deeper Human Health considerations
- Engagement, communication, transparency
- Driving best available science and technology
- Mechanisms for funding and coordination to learn during spills without disrupting response
- Appetite for change

Actions within the system

- Scientific Support: strengthening and sustaining connections, sharing information on roles and expertise

Gulf of Mexico Oil Spill & Ecosystem Science Conference

NOAA/UNH CRRC

International Oil Spill Conference

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

ICCOPR

GULF OF MEXICO RESEARCH INITIATIVE

Sea Grant

Texas • Louisiana • Florida Mississippi-Alabama Oil Spill Outreach Team

itac:

SCIENCE ACTION NETWORK

NPST Charter

CHARTER of the NATIONAL PREPAREDNESS SCIENCE AND TECHNOLOGY TASK FORCE SUBCOMMITTEE ON DISASTER REDUCTION COMMITTEE ON ENVIRONMENT, NATURAL RESOURCES, AND SUSTAINABILITY NATIONAL SCIENCE AND TECHNOLOGY COUNCIL

The National Academies of SCIENCES • ENGINEERING • MEDICINE

GULF RESEARCH PROGRAM

INNOVATE | EDUCATE | COLLABORATE