

**BUILDING A LEGACY OF RESEARCH COORDINATION: A HISTORY OF THE
ICCOPR FROM EXXON VALDEZ TO PRESENT DAY**

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ABSTRACT 300253:

The response to the *Exxon Valdez* oil spill revealed a need for the federal government to take a new approach to oil pollution research. At the time of *Exxon Valdez*, at least seven departments and agencies were conducting research on different aspects of oil pollution preparedness, prevention, and response. However, these agencies lacked a consistent forum for coordinating their research. Section 7001 of the Oil Pollution Act of 1990 (OPA 90) changed that with the creation of the Interagency Coordinating Committee on Oil Pollution Research (ICCOPR). ICCOPR has continued functioning since 1991 but a lack of funding after the turn of the century reduced its effectiveness at coordinating research. After being reinvigorated in 2009, the ICCOPR has once again taken a leadership role in coordinating our Nation's oil pollution research investments.

This paper discusses the history of oil pollution research leading up to the *Exxon Valdez* spill and how the ICCOPR member agencies came together to meet the mandates of OPA 90 and identify research needs in the wake of the *Exxon Valdez* and other spills. ICCOPR's approach to coordination among the ICCOPR members and collaborating with states, industry, and academia are described. ICCOPR's current status and initiatives are discussed.

OIL SPILL RESEARCH BEFORE EXXON VALDEZ:

Coordination of federal oil pollution research efforts began to take shape in the late 1960s. As of 1967, the Federal Water Pollution Control Administration (FWPCA) was encouraging regions to develop contingency plans to address oil and hazardous materials spills (Biglane, 1967). President Johnson commissioned a study in May 1967 that produced "Oil Pollution – A Report to the President" in February 1968, which recommended a national plan to deal with oil pollution (Hyland, 1969 and Cywin, 1969). The President's Panel on Oil Spills was created and their "First Report to the President" (OST, 1969) concluded that: "The United States has neither the technical nor the operational capability to cope satisfactorily with a large-scale petroleum spill in the marine environment. The technology does not exist to prevent virtually all of the oil in a massive spill from being deposited onshore." As a result, the Panel urgently recommended that "A research, development, and deployment program to control massive spills be funded and implemented immediately."

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In September 1968, the FWPCA developed the National Multiagency Oil and Hazardous Materials Contingency Plan in response to the *Torrey Canyon* oil spill off the coast of England (FWPCA, 1968). In 1970, FWPCA revised that plan and issued the National Oil and Hazardous Materials Pollution Contingency Plan (NCP), which included a provision that the National Interagency Committee for Control of Pollution by Oil and Hazardous Materials (NIC) be responsible for research and development. (CEQ, 1970; USEPA, 2014)

Research needs were addressed at the first International Oil Spill Conference (IOSC) in December 1969. The plenary speaker, the Honorable Russell E. Train (1969), then Undersecretary of the Interior, recommended a wide range of research and engineering to address the factors affecting oil pollution risks, control and cleanup technologies, drilling and production technologies, and other factors. Allen Cywin (1969) of the FWPCA presented information on ongoing federal government research and development activities, which included: 17 studies on prevention of oil release; 14 studies on control technologies; 11 studies on surveillance capabilities; eight studies of oil pollution effects; and three studies of beach and shore restoration.

Over the next two decades, oil pollution research activities increased before declining in the late 1980s. The U.S. Environmental Protection Agency (EPA) built the Oil and Hazardous Materials Simulated Environmental Test Tank (Ohmsett) and began research testing in August 1974 (Farlow and Freestone, 1975). The facility was used extensively by EPA, the Minerals Management Service (MMS), the U.S. Coast Guard, the U.S. Navy, and Environment Canada until the late 1980s. However, EPA closed the facility in September 1988 due to funding issues and diminished interest in testing by customers (Marine Research Associates and Soza & Company, 1999). Similarly, Coast Guard funding for oil pollution research and development ranged from \$2-6 million per year before dropping to between \$200K and \$300K between 1985 and 1989. At that point, the Coast Guard believed that their oil pollution research had hit a “technological plateau” where the cost of any further improvements would be significantly higher. The Coast Guard shifted priorities to other mission areas and the research and development program focused its efforts on documenting existing technologies and providing decision making tools for responders. (Tebeau, 2003).

In the 1970s and 1980s, coordination of federal oil pollution research was primarily conducted on an informal and ad hoc basis. Research efforts at Ohmsett were coordinated by the Ohmsett Interagency Technology Committee (OITC), an ad hoc group of researchers using the Ohmsett facility (Mullin, 2014). Individual agencies sponsored and participated in oil spill technology workshops and API Task Forces, which helped facilitate a degree of coordination. However, there was no legislated coordinated body for federal oil pollution research. By contrast, the United Kingdom had established a formal Coordinating Committee on the Prevention of Sea Pollution by Oil in December 1967 (Jagger, 1969).

EXXON VALDEZ AND THE FORMATION OF A COORDINATING COMMITTEE:

When the *Exxon Valdez* ran aground on March 24, 1989, federal responding agencies were faced with new challenges to address a major oil spill in a subarctic environment. Steps were quickly taken to coordinate research, which eventually led to the creation of the

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Interagency Coordinating Committee on Oil Pollution Research (ICOPR). On March 28, 1989, the National Ocean Pollution Policy Board proposed development of a federal research and development plan to address these new issues. By April 26th, the Coast Guard proposed that it lead an interagency/interdisciplinary research and development working group consisting of the EPA, National Oceanic and Atmospheric Administration (NOAA), the Department of the Interior (DOI), U.S. Navy, U.S. Army Corps of Engineers (USACE), Department of Defense (DOD), Department of Energy (DOE), and potential additional parties from the scientific and industry communities. During July and August 1989, the Coast Guard established a Standing Committee for Environmental Response-Related Research and Development, and conducted a research and development planning workshop.

Federal agencies began interagency efforts to coordinate oil pollution research. On September 26-27, 1989, the Coast Guard sponsored the “Oil Spill Research & Development Interagency Planning Workshop” in Groton, Connecticut, with a follow-on interagency coordination meeting in mid-November. Anticipating pending legislation, the participants in the Groton Workshop formed an Ad Hoc Interagency R&D Coordinating Committee with representatives from the Coast Guard, DOE, EPA, NOAA, USACE, the Minerals Management Service (MMS), the U.S. Navy Supervisor of Salvage (Navy SUPSALV), the National Institute of Standards and Technology (NIST), the National Research Council, and the National Science Foundation (Jensen and Tebeau, 1991)

The Ad Hoc Committee included three subgroups: Spill Management and Planning, co-chaired by USCG and EPA; Initial Response and Containment, co-chaired by USCG and MMS; and Effects, co-chaired by NOAA, EPA, and the U.S. Fish & Wildlife Service (USFWS). The efforts of these Subgroups helped prepare the agencies for the formation of ICOPR.

Efforts to revise pollution regulations based on the *Exxon Valdez* spill were ongoing at the same time. On August 29, 1989, the Congressional Research Service conducted the “Interagency Meeting to Discuss Oil Spill Research Legislation.” A “New Oil Pollution Act of 1990 Conference” was conducted on September 12, 1989, to discuss potential language of the Act. On August 18, 1990, the Oil Pollution Act of 1990 (OPA 90) (P.L. 101-380, 33 U.S.C. 2701-2761) was signed into law. Section 7001(a) of OPA 90 established ICOPR with a twofold purpose: (1) to prepare a comprehensive, 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.

A new “Ad Hoc Interagency Coordinating Committee for Oil Pollution Research and Development” was formed and conducted their first meeting on September 4, 1990, to develop a draft charter, organization structure, and planning for the launch of ICOPR. The Ad Hoc Committee and its subgroups met several times over the next four months and developed the initial structure consisting of a Chair (Coast Guard) with committees for Spill Prevention, Spill Response Planning & Management, Spill Response, Effects & Restoration, Grants, Port Demonstrations, and State, Industry & International Cooperation. ICOPR conducted its first official quarterly meeting on January 17, 1991 with representatives from 13 federal departments and agencies.

ICCOPR'S EARLY YEARS:

The first eight years of ICCOPR was a busy time and resulted in what was unprecedented interagency coordination on oil pollution research up to that time. ICCOPR conducted quarterly meetings until June 1999 before moving to semi-annual meetings. These meetings provided a forum for members to discuss and share information on research initiatives and needs. It also helped the members coordinate activities to fulfill the OPA 90 requirements, which included:

Simulated Environmental Testing - Section 7001(c)(7) directed ICCOPR agencies to ensure the long-term use and operation of Ohmsett - the National Oil Spill Response Research & Renewable Energy Test Facility, which closed in 1988. The facility was reactivated and continues to be operated today by the Bureau of Safety and Environmental Enforcement (BSEE), a successor to the Minerals Management Service (MMS).

Regional Research Grants Program – Section 7001(c)(8) authorized a Regional Research Program to “coordinate a program of competitive grants to universities or other research institutions, or groups of universities or research institutions, for the purposes of conducting a coordinated research program related to the regional aspects of oil pollution, such as prevention, removal, mitigation, and the effects of discharged oil on regional environments.” ICCOPR used the John A. Volpe National Transportation Systems Center (VNTSC) to administer the grant program. Funding for the program was authorized for each of the fiscal years from 1991 through 1995 and the last reports under the program were published in 1997 (VNTSC, 1997).

Port Demonstrations – ICCOPR conducted Port Oil Pollution Minimization Demonstration Projects in New Orleans (December 1994) and New York (October 1995), which were required by Section 7001(c)(6). After the first two projects were completed, ICCOPR determined that they were cost prohibitive and that the objectives for the Demonstration Projects requirement could be met through other means (ICCOPR, 2003). In 1995, ICCOPR began meeting the demonstration requirement through participation in major oil pollution conferences instead of conducting a required project in the Port of Los Angeles/Long Beach, and one in the Great Lakes required in the Great Lakes Oil Pollution Research and Development Act of 1990. ICCOPR has been actively involved in the IOSC, Interspill, and Spillcon conferences in lieu of port demonstrations since 1995.

International Cooperation – To help meet the requirements of Section 7001(d) for international cooperation, ICCOPR published an International Oil Pollution R&D Abstract Database in June 1992 (ICCOPR, 1992a). The Coast Guard, on behalf of ICCOPR, and the International Maritime Organization (IMO) conducted the First International Oil Spill R&D Forum in 1992 (USCG and IMO, 1992). The IMO and ICCOPR agencies as co-sponsors followed up that forum with the Second International Oil Spill Research and Development Forum in May 1995 (IMO, 1995). Today, the ICCOPR agencies promote international cooperation through sponsorship of international conferences and participation in numerous other venues.

Research and Technology Plan – In addition to facilitating interagency interaction, ICCOPR's most significant accomplishment at the time was development of the first Oil Pollution Research and Technology Plan (OPRTP) in 1992 and a revised OPRTP in 1997 (ICCOPR, 1992b, 1997). The 1992 OPRTP marked the first time that comprehensive oil

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pollution research priorities were coordinated across the federal government. It presented ICCOPR's recommended priorities for research based on three potential levels of federal funding in five research and development areas: Spill Prevention; Spill Response Planning and Management; Spill Response; Fate, Transport, and Effects of Oil; and Restoration and Rehabilitation. The Marine Board of the National Research Council reviewed the OPRTP and provided recommendations that the plan be revised using a framework that addresses spill prevention, human factors, and the field testing/demonstration of developed response technologies. In response, ICCOPR developed the 1997 OPRTP to make a case for continuing federal oil spill research and development over the next 5-10 years (ICCOPR, 1997). The 1997 OPRTP listed 21 technology areas and presented ICCOPR's recommended priorities for their funding.

A somewhat prophetic and cautionary statement came out of the Marine Board review of the OPRTP. Robert A. Frosch of the National Academy of Engineers wrote: "Research and development (R&D) related to oil spills follows a boom-and-bust cycle. After catastrophic spills, when the acute effects of oiled beaches, polluted waterways, and dying wildlife are featured in all the media, there is public outcry and political interest, accompanied by calls for action, for more research, and for better prevention and control measures. Later, as acute effects fade, but longer-term and less obvious problems may continue, public interest – and with it political interest – fade." (Marine Board, 1993) This statement both reflects the state of oil pollution research in the late 1980s leading up to the *Exxon Valdez* oil spill and the future state of the research over the next 12 years after issuance of the OPRTP.

SHIFTING NATIONAL PRIORITIES AND CHALLENGES:

Eight years after the *Exxon Valdez* oil spill the U.S. had established a useful process for coordinating oil pollution research. However, national priorities soon began to shift and interest in coordinating the research waned. In 1998, ICCOPR moved to semi-annual meetings as most requirements of OPA 90 were completed. Four years later the nation's funding priorities shifted to fighting terrorism following the attacks of September 11, 2001 and continued over much of the next decade with the wars in Iraq and Afghanistan.

Federal oil pollution research continued during the early 2000s but at diminished funding levels. For example, the Coast Guard RDC's funding dropped from the \$3 - 4 million per year range to about half a million dollars per year by 2002. Despite this drop in funding, the MMS, Coast Guard, EPA, and NOAA all continued to use Ohmsett and other research facilities to make progress in meeting their oil pollution research missions and agency priorities. However, there was no driving force, such as a major oil spill, for ICCOPR to continue the same level of research coordination as during its early years. Participation in ICCOPR meetings dropped and ICCOPR business was conducted as part of the National Response Team meetings or through participation in conferences. The extent of ICCOPR's coordination efforts was reduced to preparing biennial reports to Congress that listed the research initiatives of the member agencies. Collaboration between members was limited with only six joint projects being documented in the FY2003 through FY2008 timeframe.

ICCOPR REINVIGORATED AND A NEW RESEARCH AND TECHNOLOGY PLAN:

In 2009, the Coast Guard, as ICCOPR Chair, decided it was time to reinvigorate ICCOPR and update the 1997 OPRTP. ICCOPR conducted a scoping meeting on its future at the 2009 Clean Gulf Conference in New Orleans, Louisiana. Soon thereafter, the *Deepwater Horizon* oil spill began on April 20, 2010, bringing worldwide attention to oil pollution response and renewed public interest in research needs. ICCOPR conducted a series of three public meetings around the country in March, September, and November 2010 to get public input on the direction of ICCOPR and where the federal government should focus its oil pollution research.

The member agencies have a renewed commitment to working together to again make ICCOPR the focal point for coordinating federal oil pollution research and collaborating with industry, academia, states, and international research bodies. ICCOPR developed a new Charter that established a new Vice Chair position that is rotated on a biennial basis between NOAA, BSEE, and EPA (ICCOPR, 2013). Membership also rose to 15 with the reorganization of MMS into BSEE and the Bureau of Ocean Energy Management (BOEM) and the addition of the U.S. Arctic Research Commission (USARC). Current members are: Coast Guard, NOAA, BSEE, EPA, BOEM, DOE, Maritime Administration (MARAD), National Aeronautical and Space Administration (NASA), Navy SUPSALV, NIST, Pipeline and Hazardous Materials Safety Administration (PHMSA), USACE, USARC, USFWS, Federal Emergency Management Agency/Fire Administration (USFA).

ICCOPR reinstated the quarterly meeting schedule. These meetings are now attended by 20-30 participants and include presentations from member and external researchers to share the latest innovations and research results. Over the past two years, ICCOPR has received presentations on a diverse range of topics including aerial surveillance and mapping innovations, ultra-deepwater spill prevention research, initiatives to reduce spills from pipeline and rail accidents, industry subsea dispersant injection task force updates, and Gulf of Mexico research and ecosystem recovery programs of the National Academy of Sciences (NAS), Gulf of Mexico Research Initiative (GoMRI), and NOAA's RESTORE Act program.

Participation in these meetings has fostered extensive discussion and member collaboration. Members are once again actively seeking advice from other members on the scope and direction of research initiatives. They are seeking opportunities to work together to take advantage of each agency's capabilities and reduce overlap. The latest biennial report documents 129 research projects by ICCOPR members, including at least 15 that were joint collaborations between two or more member agencies (ICCOPR, 2014). The members are also freely sharing the results of their individual projects, which have provided the other members with valuable input to their projects.

The most important effort of the reinvigorated ICCOPR is revising the OPRTP and collectively establishing the federal government's oil pollution research priorities. ICCOPR began the process to revise the OPRTP by conducting an extensive review of after action reports, workshop and conference proceedings, and other sources that recommended research into some aspect of oil pollution research. In the process, ICCOPR identified more than 550 research needs. ICCOPR developed a new Research Categorization Framework that placed these Research Needs into 24 Standing Research Areas (SRAs) within four classes of research: Prevention; Preparedness; Response; and Injury Assessment and Recovery. In late 2013,

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ICCOPR conducted a survey of 280 subject matter experts to help establish research priorities for the 24 SRAs. This information is being compiled into an updated OPRTP that will be released 2014. To keep a focus on oil pollution research, ICCOPR has established a new schedule to revise the OPRTP every six years to provide an analysis of accomplishments over the past six years and set priorities for the next six years. ICCOPR intends to track research to measure progress toward addressing the priority research needs for each SRA and reevaluating the needs and priorities every six years.

CONCLUSION:

Coordination of oil pollution research has gone through boom and bust cycles over the years. The *Torrey Canyon* spill in 1967 mobilized the U.S. to begin serious efforts to conduct oil pollution research but those efforts faded in the mid-1980s. The *Exxon Valdez* oil spill in 1989 woke the country from a state of complacency and launched ICCOPR as the coordinator of federal oil pollution research and led to creation of comprehensive oil pollution research and technology plans and increased oil pollution research. After completing its major duties by 1998, ICCOPR too continued at a diminished pace but began a revitalization effort shortly before the Deepwater Horizon oil spill, which once again drew attention to oil pollution issues and research needs.

The *Exxon Valdez* and *Deepwater Horizon* oil spills were not the result of diminished attention to oil pollution research. However, they illustrate the need for continuous improvements in our systems to prevent and respond to oil spills. Today we are a few years after a major spill just as we were when ICCOPR was formed a couple years after the *Exxon Valdez* oil spill. Our current challenges are to build upon our existing foundation of interagency cooperation, keep oil pollution research as a top priority, and be better prepared for the next oil spill. As Robert Frosch pointed out, public attention and political interest due to the *Deepwater Horizon* oil spill will diminish over time. However, ICCOPR plans to use the new research and technology planning framework as a tool to keep the member agencies focused on oil pollution research needs regardless of the level of public interest.

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