

Preparing for a Rapid Response to Major Marine Oil Spills: A Workshop on Research Needs to Protect the Health and Well-Being of Communities

RRT III Meeting – November 15, 2017 – Lancaster, PA
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Oil Spill Policy Reminders

- National Contingency Plan (1994)
 - “RCPs shall, as appropriate, include information on all useful facilities and resources in the region, from government, **commercial, academic, and other sources.**”
 - “The **technical and scientific information generated by the local community**, along with information from federal, state, and local governments, should be used to assist the OSC/RPM in devising response strategies where effective standard techniques are unavailable.”
- USCG Memorandum 3121, Dec.05 2012. Area Contingency Planning Job Aid.
 - “FOSCs are authorized to take response measures deemed necessary to **protect public health, welfare, and the environment.**”
 - “**Discussions and strong partnerships with all stakeholders** during the Area Committee process are necessary to inform a plan that, when implemented, will be adequate to effectively respond “
 - “Area Contingency Plan (ACP) development is a **collaborative process**”
 - “Area Committees are encouraged to **establish forums to obtain advice and guidance from these non-government stakeholders and include them in the decision-making process.**”

Oil Spill Stakeholders

Stakeholder Group	Examples
Decision makers: those with jurisdiction / legal authority to make preparedness and response decisions and those with regulatory oversight	Formal governmental authorities (international, national, regional, state, local, parish): Incident/Unified Command; other regulatory agencies with jurisdiction Spiller (private or public) Resource trustees Compensation providers
Knowledge sources and advisors: those who have knowledge to contribute to the decision making process	Oil spill practitioners and technical specialists (government and industry) Resource managers Energy and marine operators Academic researchers Public health agencies – maybe yes, maybe no Others with traditional knowledge (i.e., fishers and marine pilots)
Stakeholders who can be affected by decisions	Local communities, vulnerable populations Fishers and seafood industry Tourist industry, other businesses in the spill area Oiled property owners Indigenous people Designated resource managers Energy/oil, marine, and shipping industries
Communicators, influencers, and opinion leaders: those who communicate and influence others with their opinions about oil spills	Media (print, broadcast, and electronic) Elected officials and community leaders Academia Trade associations, e.g., Association of State and Territorial Health Officials Non-governmental Organizations (NGOs) – maybe yes, maybe no Community health workers Social media bloggers/communicators

Stakeholders in blue generally lack a defined niche in preparedness and response

The Workshop

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- Sponsors
 - The Gulf Research Program of the National Academies of Sciences, Engineering, and Medicine (30 year program funded through criminal penalty monies).
- Planning Committee – NASEM Health and Medical Division and GRP staff, plus:
 - Oil Spill Practitioners – A. H. Walker (chair) and Y. Addassi, CA OSPR
 - Public Health and Disaster Researchers – D. Abramson, NYU Program on Population Impact Recovery and Resiliency; E. Fontham, School of Public Health, Louisiana State University; S. Croisant, Dept. of Preventative Medicine and Community Health, UT; D. Gill, Center for the Study of Disasters and Extreme Events, Oklahoma State University; L. Graham, MS-AL Sea Grant Oil Spill Agent (communities)
 - Planned agenda via conference calls from February – July 2017
- Held at NAS in Washington, DC - August 2, 2017
 - Approx. +100 participants



Workshop Objectives

1. Explore key research needs *and other opportunities for improving preparedness* and public health response and protection during and after oil spills
2. Discuss opportunities to *work within the existing oil spill response framework to improve protection of the health and well-being of communities impacted by spills*
 - *And other approaches that could complement official response activities before and during spills.*
3. Inform discussions about how the Gulf Research Program and other units of the National Academies of Sciences, Engineering, and Medicine can *support these efforts before, during, and after an oil spill response.*
4. *Foster improved connections between oil spill practitioners, public health, and disaster research communities and leaders from communities impacted by oil spills.*

Some of the Invited Speakers

(also from public health agencies & academic researchers)

Oil Spill Community

- Adm. Pete Gautier
- Capt. Joe Loring
- Capt. Roger Laferriere (ret.)
- John Tarpley, NOAA ERD
- Gary Pearson, NJ DEP
- Greg DeMarco, Exxon Mobil
- Kelly Wilson, Andadarko
- Nancy Kinner, UNH CRRC
- Jonathan Waldron, Blank & Rome

Community Representatives

- Julie Falgout, Sea Grant seafood industry liaison
- Thao Vu, Mississippi Coalition for Vietnamese Fisher Folk and Families
- Chief Thomas Darda, Jr. – United Houma Nation
- Bishop James Black – Center for Environmental & Economic Justice

Oil Spill Impacts on Community Health and Well-being

- The strongest predictors of stress were concerns about family health and economic future, economic loss, and individual or group connections to threatened renewable resources. Issues related to oil exposure and compensation processes are strong predictors of long-term stress. (Ritchie)
- Oil spill stressors are linked to an array of economic, psychological, sociological, and physical impacts. (Nicholls)
- When a person loses his or her job due to an oil spill, impacts can extend beyond income loss to affect health through cascading effects (e.g., fear, sense of loss, stress, anxiety, depression, high blood pressure). (Nicholls)
 - Mental health impacts often manifest over the long term (Croisant)
- Impacts go beyond the individual to damage communities by disrupting interpersonal and group relationships, generating pervasive uncertainty about contamination and exposure, fueling distrust, threatening economic or cultural connections to renewable resources, and necessitating involvement in compensation processes. (Ritchie)

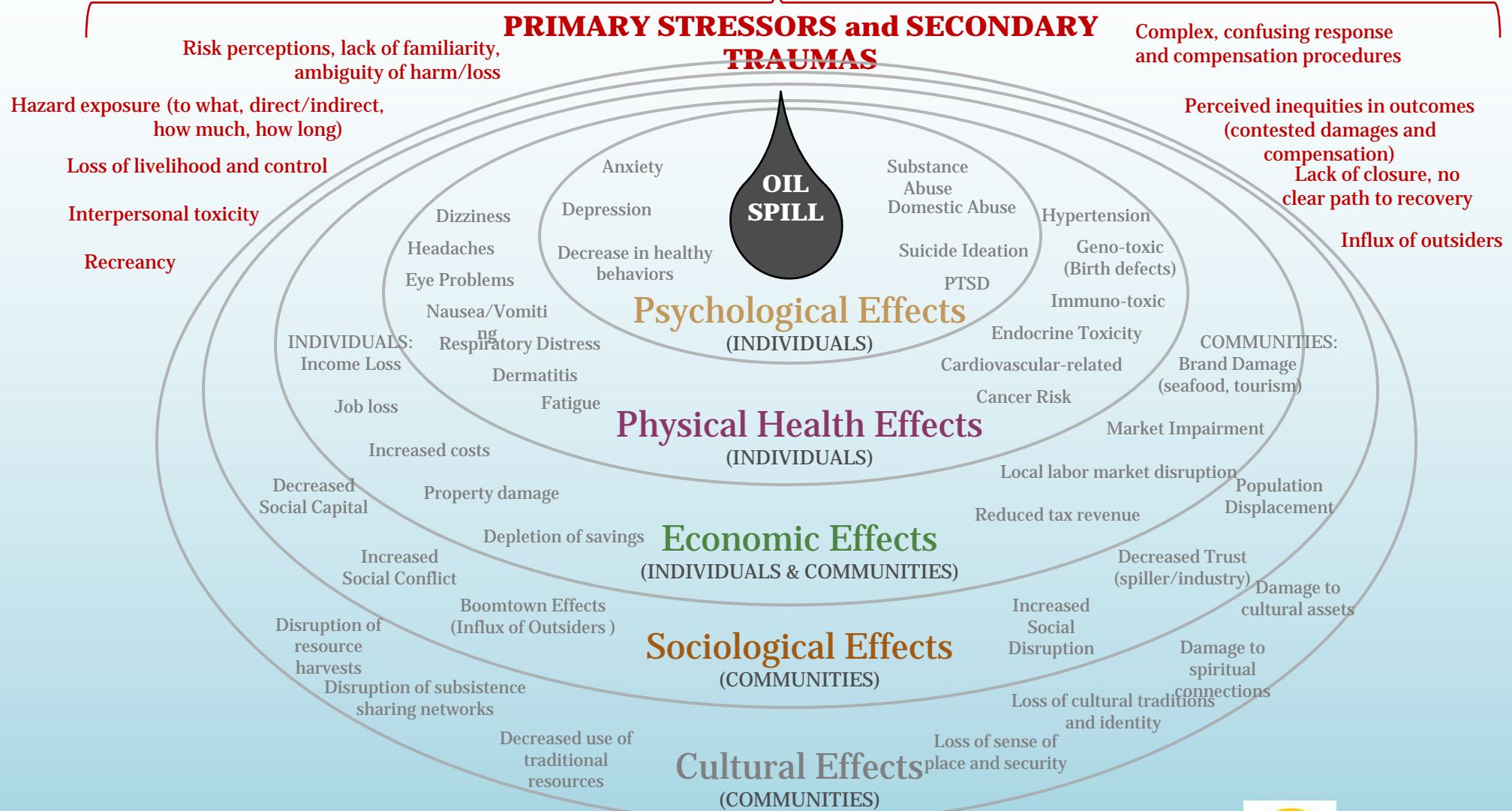
Marine Oil Spills: Array of POTENTIAL Human Effects*

- Spill-specific conditions determine occurrence, type, scale

Figure by Keith Nicholls, Steve Picou, Selena McCord (University of South Alabama); Ann Hayward Walker (SEA Consulting Group); and Duane Gill (Oklahoma State University). 2017

Increased vulnerability or effects due to:

- Natural or other technological disasters
- Economic recession
- General life stressors (health, family, job)



POPULATIONS LIKELY TO BE AFFECTED



Natural Resource Dependent Communities



Response and Clean-up Workers



Vulnerable subgroups (e.g., children, elderly, pregnant women)



“Place-based” (e.g., coastal, close to hazards, low social capital, poverty, unemployment)

Figure development based on discussion at a 2017 workshop supported by the Gulf Research Program and a review of the literature.

Human Impacts of Oil Spills - Selected Bibliography

- Adeola F, Picou J. Social Capital and the Mental Health Impacts of Hurricane Katrina: Assessing Long-Term Patterns of Psychosocial Distress. *International Journal of Mass Emergencies & Disasters*. March 2014; 32(1): 121-156
- Booth, A.L., 1999. Does the spirit move you? Environmental spirituality. *Environmental Values*, pp.89-105.
- Bostrom A, Walker AH, Scott, T, Pavia R, Leschine TM, and Starbird K, 2015. Oil spill response risk judgments, decisions, and mental models: findings from surveying US stakeholders and coastal residents. *Human and Ecological Risk Assessment: An International Journal*, 21(3), pp.581-604.
- Chang S, Stone J, Denies K, Piscitelli M. Consequences of oil spills: a review framework for informing planning. *Ecology & Society*. June 2014; 19(2): 457-472
- Diaz J. The legacy of the Gulf oil spill: analyzing acute public health effects and predicting chronic ones in Louisiana. *American Journal of Disaster Medicine*. 2011; 6(1): 5-22
- Dickey R, Huettel M. Seafood and Beach Safety in the Aftermath of the Deepwater Horizon Oil Spill. *Oceanography*. September 2016; 29(3): 196-203.
- Endter-Wada, J, Hofmeister J, Mason R, McNabb S, Morrison E, Reynolds S, Robbins E, Robbins L, and Rooks CT. 1993. Social Indicators Study of Alaskan Coastal Villages: IV. Postspill Key Informant Summaries: Schedule C Communities, Part I (Cordova, Tatitlek, Valdez) and Part 2 (Kenai, Tyonek, Seldovia, Kodiak City, Karluk, Old Harbor, Chignik). Prepared for Minerals Management Service, Alaska OCS Environmental Studies Program, Technical Report 155, OCS Study MMS 92-0052.
- Gill DA, Picou JS, Ritchie LA. The Exxon Valdez and BP Oil Spills: A comparison of Initial Social and Psychological Impacts. *American Behavioral Scientist* [serial online]. January 2012; 56(1):3-23.
- Gill DA, Ritchie LA and Picou JS. 2016. Sociocultural and Psychosocial Impacts of the *Exxon Valdez* Oil Spill: Twenty-Four Years of Research in Cordova, Alaska. *Extractive Industries and Society* 3:1105-1116.
- Goldstein B, Osofsky H, Lichtveld M. The Gulf oil Spill. *The New England Journal of Medicine*. April 7, 2011; 364(14):1334-1348.
- Gould D, Teich J, Pemberton M, Pierannunzi C, Larson S. Behavioral Health in the Gulf Coast Region Following the Deepwater Horizon Oil Spill: Findings from Two Federal Surveys. *Journal of Behavioral Health Services & Research*. January 2015; 42(1): 6-22.

Human Impacts of Oil Spills - Selected Bibliography (cont.)

- Impact Assessment, Inc. (IAI). 1990. Economic, social and psychological impact assessment of the Exxon Valdez Oil Spill. Final Report Prepared for Oiled Mayors Subcommittee, Alaska Conference of Mayors, Anchorage, Alaska.
- Laffon B, Pávaro E, Valdíglesias V. Effects of exposure to oil spills on human health: Updated review. *Journal of Toxicology and Environmental Health: Part B*. April 2016; 19(3/4): 105-128.
- Levy B, Nassetta W. The adverse health effects of oil spills: a review of the literature and a framework for medically evaluating exposed individuals. *International Journal of Occupational & Environmental Health*. April 2011; 17(2): 161-167.
- Mong M, Noguchi K, Ladner B. Immediate Psychological Impact of the Deepwater Horizon Oil Spill: Symptoms of PTSD and Coping Skills. *Journal of Aggression, Maltreatment & Trauma*. August 2012; 21(6): 691-704.
- Osofsky H, Osofsky J, Hansel T. Deepwater horizon oil spill: mental health effects on residents in heavily affected areas. *Disaster Medicine & Public Health Preparedness*. December 2011; 5(4): 280-286.
- Osofsky, H, Palinkas, LA, and Galloway JM. "Mental health effects of the Gulf oil spill." *Disaster medicine and public health preparedness* 4, no. 4 (2010): 273-276.
- Osofsky, Joy D., Howard J. Osofsky, Carl F. Weems, Tonya C. Hansel, and Lucy S. King. "Effects of stress related to the gulf oil spill on child and adolescent mental health." *Journal of pediatric psychology* 41, no. 1 (2014): 65-72.
- Picou J. Disaster Recovery as Translational Applied Sociology: Transforming Chronic Community Distress. *Humboldt Journal of Social Relations*, 2009; 32(2): 123-157.
- Picou J. The BP Catastrophe and Sociological Practice: Mitigating Community Impacts through Peer-Listening Training. *Journal of Applied Social Science*, September 2011;5(2): 1-12.
- Picou J, Marshall B, Gill D. Disaster, Litigation, and the Corrosive Community. *Social Forces*. June 2004; 82(4): 1493-1522.
- Picou JS, Gill DA, and Cohen MJ (eds.). 1997. *The Exxon Valdez Disaster: Readings on a Modern Social Problem*. Dubuque, IA: Kendall-Hunt. (Second printing, 1999; Third printing 2008 Delhi, India: Indo American Books).
- Palinkas L. A conceptual Framework for Understanding the Mental Health Impacts of Oil Spills: Lessons from the Exxon Valdez Oil Spill. *Psychiatry: Interpersonal & Biological Processes*. Fall 2012; 75(3): 203-222.
- Palinkas L, Downs M, Petterson J, Russell J. Social, cultural, and psychological impacts of the Exxon Valdez oil spill. *Human Organization* [serial online]. 1992; 52(1): 1-13.
- Peres L, Trapido E, Peters E, et al. The Deepwater Horizon Oil Spill and Physical Health among Adult Women in Southern Louisiana: The Women and Their Children's Health Study. *Environmental Health Perspectives*. August 2016; 124(8): 1208-1213.
- Pruitt B, Lawson R. The health impact of oil spills: Lessons learned. *Nursing*. April 2011; 41(4): 55-60.
- Ritchie, L A. 2004. Voices of Cordova: social capital in the wake of the Exxon Valdez oil spill. Ph.D. Dissertation, Department of Sociology, Anthropology, and Social Work. Mississippi State University. Ritchie, L.A. and D.A. Gill. 2008. The *Selendang Ayu* Shipwreck and Oil Spill: Considering Threats and Fears of a Worst Case Scenario. *Sociological Inquiry*, 78(2):184-206.
- Solomon G, Janssen S. Health Effects of the Gulf Oil Spill. *JAMA: Journal of the American Medical Association*. September 8, 2010; 304(10):1118-1119.
- Walker, A. H. Oil Spills and Risk Perceptions. 2016. In M. Fingas (Ed.), *Oil spill science and technology* (pp. 1-70) . Gulf Professional Publishing.

Preparing for the Next Spill

- ICS lacks a community health component, but this could be included for future spills (Lafferiere)
- It is time to expand the focus from the health and safety of workers and responders to broader impacts on the public (Tarpley)
- Develop strategies that would enable response leadership to tell the response community that this is a priority, and to develop champions for this work in public health and disaster research (Tarpley)
- Engaging communities before an oil spill is important so that when an event occurs we are in the community, we know what is going on in the community, and we are prepared to ameliorate the negative impacts of an event (Gill)

Potential Challenges

- Complex and long-term impacts
 - Oil spill responders come in and try to solve what [they] have to solve, but once [they] are done, [they] leave... when responders leave, communities are left behind to pick up the pieces, to make sense of them ... (Dardar)
 - When a community's social, cultural, and economic existence is centered on renewable resources, spills that affect those resources have huge and lasting impacts (Gill)
- Communicating and engaging at the local level
 - Communities are often perceived by those with power and authority as part of the problem rather than part of the solution (Abramson)
 - Responders' messaging is often full of jargon and not appropriately translated for communities (Vu)
 - Lack of clear communication about roles and resources of various agencies can also limit the access of communities to resources (Vu) to understand risk, support resilience and help recovery
 - Even brief delays in dissemination of accurate information allow misinformation to fill the void (Falgout)

Potential Challenges cont'd

- Gaps in Knowledge for Prevention and Mitigation Strategies
 - After 40 major oil spills, critical information gaps persist about how to prevent and mitigate physical, mental, and behavioral health impacts (Lurie)
 - Assessing recovery is limited by a lack of outcome metrics (Abramson)
 - Lack of key (pre-spill) information (e.g., demographics, livelihoods, ways of life, and cultural practices) about populations most likely to be affected by spills (Vu)
 - People often feel “talked down to” by responders and experts and are dismayed by their reluctance to recognize (pending more scientific evidence) long-term community impacts of oil spills (Dardar)
- Competing Priorities and Sustainability
 - Public health has a broad focus on safety, hazard detection, food source safety, and mental health effects – different from responder focus on immediate safety (Loring)
 - Broaden who is involved in preparedness and planning... Community representation is a critical missing piece (Dickey)
 - Major/complex oil spill events that raise issues of community health were relatively infrequent ... look at local effects of smaller spills and tapping into community resilience initiatives or networks (Lundgren)

Potential Opportunities

- **Aligning Existing Policies, Funding, and Systems**
 - Call for national recognition that oil spills are community health incidents. Strengthen underutilized Public Health Services Act for declaring a public health emergency after a spill (Lafferiere)
 - Address the capacity limitations in the NCP and the ICS systems, through on-the-ground innovating and adapting to meet practical needs beyond the organizational chart (Gautier)
 - Liaison officer can help address standards related to resiliency and mental health (Addassi)
 - Prioritize community health and well-being in EPA and USCG regional response plans, and include an ICS objective on community health and well-being in every ACP (Lafferiere)
 - Public health practitioners could benefit from training in core emergency management practices in both planning and response (Mainzer) and become more familiar with the ICS and oil spill related needs (Lafferiere)
 - Alignment with social justice, community health, and disaster recovery and resilience efforts was an opportunity underscored by many workshop participants to improve and sustain preparedness efforts between major spills

Potential Opportunities cont'd

- Improving Communications and Building Trust
 - Locating preparedness efforts in venues deeply rooted in the community, such as churches (Rainwater)
 - Use community health workers as trusted messengers (Nicholls)
 - Work with Sea Grant, community-based extension agents who work with Communities, to identify needs, facilitate research, and simplify scientific messaging (Falgout)
 - Identify community leaders from past spill responses of any size and leveraging planning and exercising for other environmentally related incidents and mission sets (e.g., search and rescue, clearing canals of ships before hurricanes) to develop community relationships that might be valuable during an oil spill (Gautier)
 - Community associations and nongovernmental organization (NGO) networks could help to disseminate information and address community concerns in real time during a response (Walker)
 - Provide accurate, trustworthy information that is compatible across sectors and systems and Vu discussed the need for messaging and materials that are packaged appropriately for communities' languages, cultural sensitivities, education levels, and practical concerns (Bonn, Vu)

Potential Opportunities con't

- Including Communities in Planning and Response Efforts
 - Local expertise and traditional ecological knowledge could provide valuable input for preparedness and planning, including ACPs (Vu and Ritchie)
 - Knowledge of community concerns and values could inform operational decisions ...“trust us, believe in us, and have the confidence that we’re not going to steer you wrong.” (Dardar)
 - Assign local community health or resilience officers to preparedness efforts to map community systems and resources, inform response, and engender community confidence (Baumgartner)
 - Pre-response efforts are critical ... the ACP Revitalization Initiative is engaging with area planning committees to update ACPs (Loring)
 - Involve communities in the conceptualization of the discussion agenda and development of plans (Finucane)
 - Engagement of community representatives in these committees could also be useful for developing pre-prepared volunteer plans and running community exercises; pre-vet fishing boats to include in vessels of opportunity programs (Gautier)
 - Carry out drills with deliberate community health involvement (Baumgartner)

Potential Opportunities cont'd

- Improved Understanding of Oil Spill Science, Impacts, and Mitigation Strategies
 - Risk assessment decisions during an emergency must be made very quickly without time for consensus; thus, laying a foundation of good science is needed (Goldstein)
 - Develop threshold of when an oil spill becomes disaster (Walker)
 - Hold a workshop to facilitate information sharing among area planning committees (Pearson)
 - Collaborate across sectors to develop ready-to-go protocols (Miller) ... Use public health tools (e.g., CDC's Community Assessment for Public Health Emergency Response) for surveillance and needs assessment during response and recovery
 - Collecting data about local seafood consumption patterns (given that seasonal and total consumption can vary significantly) could improve seafood safety risk assessments and communications (Dickey)
 - Analyze how specific mitigation, preparedness, response, and compensation processes affect community resilience and long-term recovery prospects



Oil Spills and Resilience

Oil spill responders are familiar with *ecological resilience* from past spill experience

- Resilience is about adapting to stresses; resilient capacity enhances the speed of recovery
- Need for **organizational resilience** – to adapt and manage emerging issues and organizations
- **Community resilience** following an oil spill can be enhanced by (Cheong, 2012):
 - Access to and a transfer of knowledge from oil spill authorities and experts to the community over time (pre-spill),
 - Knowledge about oil spill resources, and
 - Building connections between local communities and oil spill experts to promote adaptation and resilience.
- This shifts the emphasis from strict self-reliance and encourages *collaboration with oil spill experts* as a key component of adaptive resilience.

Related Work in Region 6

- **Funded by Coastal Waters Consortium II (CWC II): *The Effects of the Macondo Oil Spill on Coastal Ecosystems (2014-17)***
 - Led by: Dr. Nancy Rabalais and Dr. Gene Turner, LSU, Louisiana Universities Marine Consortium et al.
 - Team Members: 23 Principal Investigators, 14 Institutions, 40 + 20+ publications, 17 post-docs, 45 researchers, 20 PhD students, 11 master students, many undergraduates
- **Walker work under CWC II – build connections between researchers and the oil spill community; opportunities to share science with responders to inform oil spill decisions**
 - Worked with Sector New Orleans AC, Response Technologies Subcommittee (2014-16) to develop draft means to connect researchers and apply research in oil spill preparedness and response, i.e., draft document for ACP annex
 - Two resources: Science & Technology Advisors; Seafood Industry Liaison Specialist
 - Survey to assess academic interest in oil spill preparedness and response (2017)

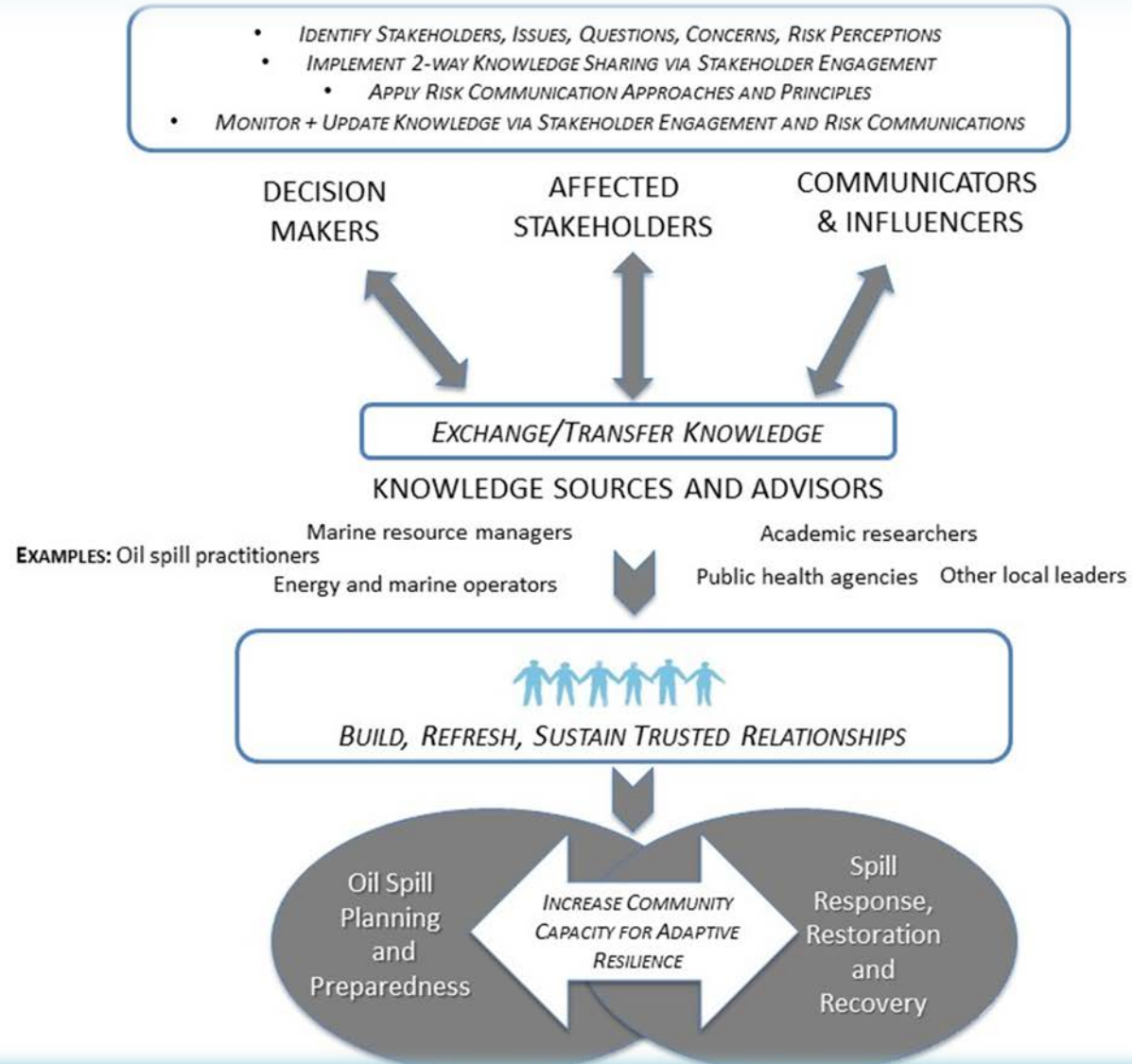
Science and Technology Advisors

- Access to specialized knowledge (decision support) outside the traditional response community
- Includes, but not limited to, academic researchers
- Could include agency reps, e.g., ATSDR, to address dispersant/human health questions
- Identify individuals or organizations pre-spill, or incident-specific
- Other potential knowledge sources:
 - Traditional local knowledge, e.g., seasonal currents, convergence zones
 - Community networks
- Flexible assignment, e.g., Environmental Unit
- Supervisor
 - If a science resource – the SSC
 - If not – other as appropriate

Seafood Industry Liaison Specialist

- Gap in oil spill regulatory framework
 - Fishery closures and seafood safety testing following some oil spills significantly impact seafood industry (fishers, wholesale, retail, restaurants, customer confidence)
 - NMFS and state Depts. of Health have jurisdiction
- Seafood industry impacts can be long-term and more complex than economic damage
 - Some impacts, but not all, mitigated by OPA 90 and other claims process
 - Inadequate means to mitigate full range of impacts on affected stakeholders
- Dilemma: Unified Command/ICP has best spill information
 - FOSC is responsible for mitigating spill impacts and acting in the public trust
 - Share spill information with seafood industry to help address questions and concerns
- Ready to implement, easy solution – connect with SEA Grant Fishery Extension Agents
 - Network is nationwide

Collaborative Engagement Process for Oil Spill Stakeholders



Source: Ann Hayward Walker (2017). Strengthening Preparedness and Response Decision-Making At the Local Level: Adaptations to Manage Better and Suffer Less. International Oil Spill Conference Proceedings: May 2017, Vol. 2017, No. 1, pp. 2489-2509.

Thank you! Questions?

- Vi

Responder
visit to fisher
home & boat,
7/2010

LA shrimpers party for/with
responders, 6/2010

Oil spill scientists and
LSU joint cruise, 7/2010

