Oil Spill Risk Communications

- Risk perceptions influence judgments, opinions, fears, beliefs, and decisions regarding:
  - Will a perceived risk cause me harm?
  - And, ultimately, response actions, claims and lawsuits
- Poor understanding about, e.g.,
  - The system of oil spill response
  - Dispersants and in situ burning
  - Seafood safety

Crisis Communications

- Communications from external affairs and public relations with a
  - Rapid response capability
- Use media to influence public beliefs, opinions, and judgments
  - Reputation of company or government agency
- Message driven

Risk Communications

- Interactions that respect the perceptions of the information recipients, intended to help people make more informed decisions about threats to their health and safety.

- Interactive process among stakeholders concerning a risk or potential risk to human health or the environment.

- Supply lay people with the information they need to make informed, independent judgments about risks to health, safety and the environment.

AMPERA Report: Risk Communication in Accidental Marine Pollution

- Some communication mistakes made during the Prestige oil spill in 2002:
  - Tailored to needs of media
  - No interaction/direct communication with those affected in local area suffering from the accident
  - Response authorities lacked a controlled end - no quick economical and environmental impact assessments
  - Confusing terminology

Examples of Confusing Terminology

- Define according to specific incident conditions
- DWH: Submerged oil refers to nearshore oil which is heavier than water and is in the water column or near the bottom. The oil may be visible, as in the above photos, or it may be covered by sand and sediment.
- DWH: Subsurface oil refers to oil that was released at the seafloor where it was naturally and chemical dispersed. This oil is suspended as fine droplets—typically too small to be seen—within a dense, cold layer of water more than half a mile below the surface.

Public Perceptions

- Marine Board, National Academy of Sciences, 1993. Review of the Interagency Oil Pollution Research and Technology Plan.

  - "Public perceptions …especially public reaction to oil spills, are a significant part of the overall spill problem. Even when perceptions are not valid scientifically, they <u>are</u> important; public attitudes are significant factors in determining whether spill response technologies can be used."

- OGP RFP 2012: educate and make stakeholders aware of the significant body of existing knowledge

Significant Disconnects

- Natural system vs. ***human system***
  - Oil spills traditionally are viewed as an environmental problem
  - Studied by natural/physical science and engineering specialists
  - Social scientists study human systems - people
- Gap in focus and therefore disconnects continue– social science research is absent from government and industry research to advance understanding about public perceptions to inform practical solutions

Social Science Research

- Human dimension study areas
  - Public health, risk analysis/perceptions, behavioral science, sociology, social psychology, expert elicitation and validation
  - Risk communication approaches
- Relevant research has been done but conducted "outside the circle"
  - Insufficient connectivity with oil spill practitioners
- Human health requires peer-review quality research
  - Oil spill research is predominantly gray literature
- Result: Public perception problems remain unresolved

Risk and External Stakeholders

- Risk is the product of the probability of a hazard resulting in an adverse event, times the severity of the event pathway analysis

- Risk = Hazard + Outrage (Peter Sandman)

- Low correlation between a risk's "hazard" (how much harm it's likely to do) and its "outrage" (how upset it's likely to make people).

- Lack of clarity around controversial issues can lead to higher perceptions of risk and feelings of outrage by stakeholders

Behavioral Science

Dr. Vincent Covello

- Trust factors in high stress situations (assessed in first 30 seconds)
- Research shows that public concerns typically are based 95 percent on perceptions and only five percent on facts.
- People's behavior usually is predicated on perceptions – often misperceptions – that differ substantially from reality (facts).

Social Media

- Information Systems for Crisis Response and Management (ISCRAM) Association
- Jeannette Sutton, Disaster Sociologist: research on the users of social media in crises and disasters
  - *People will use information from any number of sources to satisfy their needs and inform their actions in the face of disaster*
  - *Wide-scale interaction between members of the public has qualities of being collectively resourceful, self-policing and <u>will generate information that cannot otherwise be easily obtained</u>*

Social Media: use during two disasters

Wildfires	Usage
Mobile phones to contact friends or family	54%
Information portals and websites advertised in traditional media	76%
Alternative news sources and individual blogs	38%
Discussions on various web forums	15%
Photo sharing sites such as Flickr or Picasa	10%
Twitter	<10%
Hurricane Katrina	Usage
Posting information or participating in discussion groups on-line	36%
Text messaging	20%
Discussion boards or community online forums	16%
Posting on personal blogs	9%
Photos on sites such as Flickr or Picasa	8%
Broadcasting via Twitter	4%

sea
CONSULTING GROUP
CONNECTING THE
D — O — T — S

# Oil Spill Community Workshop

- Designed and conducted Feb. 16, 2012
- >100 external and internal oil spill stakeholders

How is toxicity measured?

- Short-term (acute) toxicity data is usually produced by exposing aquatic animals for 48 to 96 hours (2 to 5 days) to a constant chemical concentration in water
- Aquatic toxicities are usually reported in concentration units of milligrams per liter (mg/L) or parts per million (ppm)
- Toxicity is usually reported as the concentration that killed 50% of the exposed animals (lethal concentration 50, or LC50) at the end of the exposure period

1 ppm   10 ppm   100 ppm

96hr- LC50
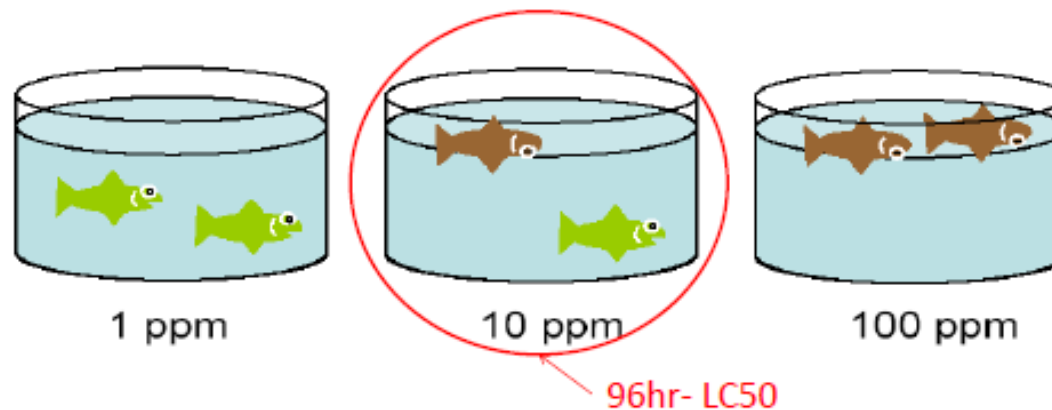
- The smaller the LC50 values, the more toxic the chemical is
- EPA has a guide for comparing the aquatic toxicity of chemicals based on LC50 values

Scale:

Very Highly Toxic (<0.1 mg/L)
Highly Toxic (0.1-1 mg/L)
Moderately Toxic (1-10 mg/L)
Slightly Toxic (10-100 mg/L)
Practically Non-toxic (>100 mg/L)

Eastern a

- Peninsu Atlantic Ocean
- Renewa ities
- 80% of A Nature Conserv

Stakeholder Surveys

- Mental models: what is stakeholder understanding in relation to expert understanding
  - What gaps need to be informed/communicated?
  - Online and interactive
  - Build on 1990s dispersant risk communication project funded by MSRC
- Engagement process: workshop evaluation form
- External and internal stakeholders (e.g., government decision makers, responders and oil spill scientists) completed the surveys

Interactive Survey

2. Recovery of over 25% of spilled oil is common with mechanical response options.

1. Strongly Agree
2. Agree
3. Neither agree nor disagree
4. Disagree
5. Strongly Disagree
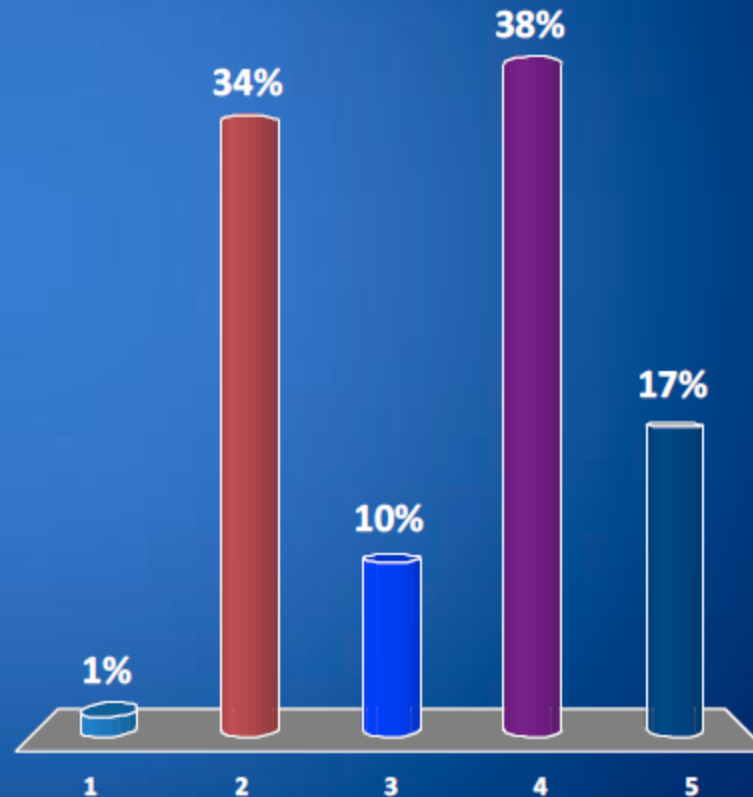
Initial Understanding

3. Immediately after correct application, concentrations of dispersant in the top few meters (1-3) of water may be high enough to cause lethal or sub lethal effects on some organisms.

1. Strongly Agree
2. Agree
3. Neither agree nor disagree
4. Disagree
5. Strongly Disagree
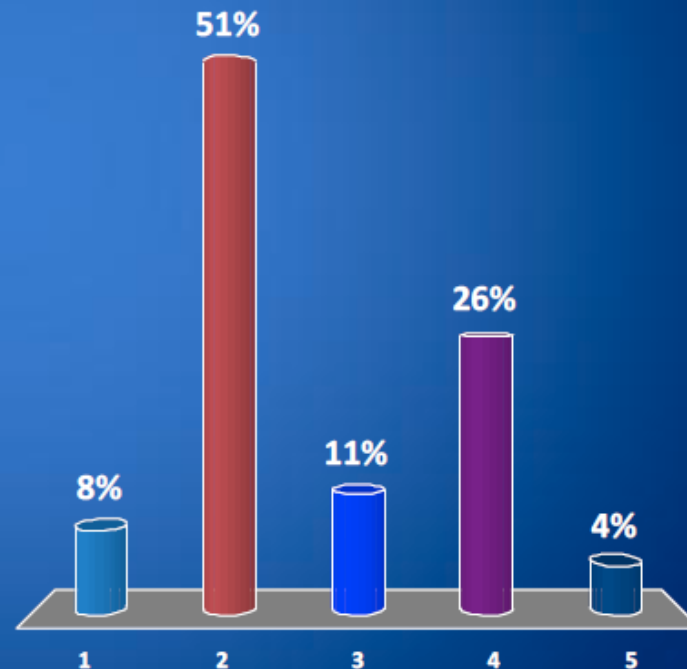
On a scale of 0 - 7 (0 = not important 7 = essential) indicate how important **each form of media** would be to inform your judgments regarding dispersant use in a response to an oil spill? (averaged scores)

Personal discussions (phone, face-to-face, email)	**5.8**
Social networks (e.g., Facebook)	**2.3**
Internet blogs or discussion groups (e.g., Twitter, text messages, Listservs)	**2.9**
News media (online, television, print, e.g., newspapers, magazines)	**3.8**
Internet search engines, e.g., Google, Yahoo	**4.7**
Known websites (government websites, e.g., Coast Guard, EPA, NOAA, DOI, or websites of professional associations)	**6.2**
Wikipedia or other only encyclopedias	**3.2**
Libraries and/or scholarly research databases	**4.5**

Pre-spill Preparation

- Identify issues of concern/controversy and stakeholder groups
- Compile fact-based content (subject matter experts) to address issues and inform stakeholders
  - Develop answers to likely questions using Covello templates
- Develop risk communications response plan
  - Identify resources, messengers/communicators and ways of delivery, e.g.,
    - Media (including interviews, press releases)
    - Trusted sources (community and other opinion leaders)
   - Social media (peer to peer)

During a Response

- Limits on engagement?
- Define information flow process

Risk Communication Activities

- Coordinate with oil spill scientists and others in the Incident Management Team

- Assess and characterize the oil <u>and</u> countermeasures
  - Need sample data

- Engage stakeholders
  - What are their risk perceptions?

- Provide information to trusted sources/intermediaries, e.g.,
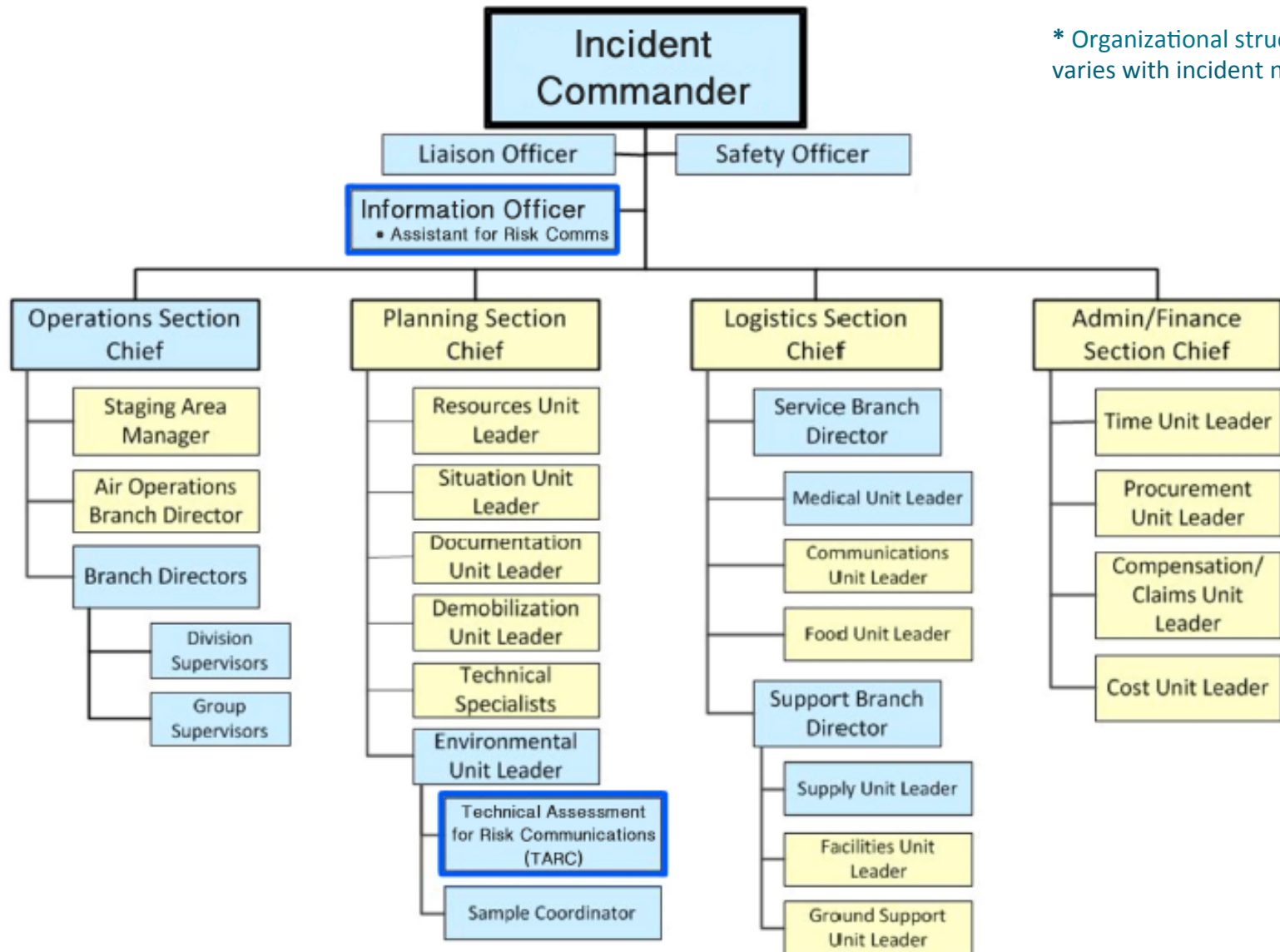 - Waterkeepers, academia
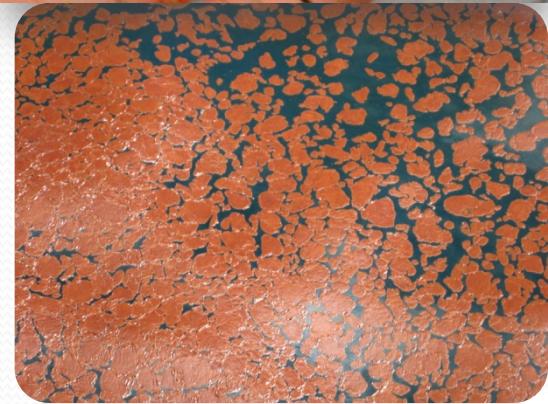
Real-Time Priorities

- Load pre-spill information on know issues of concern
- Identify and push website and social media content
- Commit to updating with response-specific information
  - Trust and credibility, real-time assessment
- Activate Technical Assessment for Risk Communications (TARC) and connect to Information Officer/External Affairs
  - Multiple channels, layers, and communicators

Risk Communications in the ICS Organization*

* Organizational structure varies with incident needs

Media Stakeholders

Responders	Trusted Sources*	Coordination	Deliverables	Communicators
• **Incident Management Team (IMT)** • **Technical Specialists: ITOPF, Chemists, biologists, oceanographers, toxicologists and industrial hygienists** • **Operations** • **Safety Officer (SO)** • **Environmental Unit (EU): Sample Management, and TARC (Technical Assessment for Risk Communication)**	Initial: • Media • Unified Command (UC) • Health officials • Academia • Community or trade association representatives, e.g., Fishing Association • Environmental groups • Local health officials • Physicians and pharmacists in affected area	• Incident Commander • Joint Info. Center (JIC) • Liaison Officer (LO) • Legal representatives • Environmental Unit Leader (EUL) • Media • National authorities	• Use fact sheets on the response, sampling programs, scientists involved in the spill, response options being used (what, why, where, how) • Use fact sheets on d worker monitoring (incorporate fact sheets and response options re: potential risks, vulnerability, exposure) • Q&As • Talking points • Media campaign, websites • Podcasts and social media	*Incident Management Team (IMT)* • Incident Commander • Information Officer, Safety officer • Response Technical Specialists to address questions which exceed "talking points" depth of knowledge *External* • Media • National authorities • Websites for tourism area • Local / state officials • Additional trusted sources (to be identified for specific response and affected stakeholder)

*people who are listened to and/or lead opinions

Going Forward

- Fund social science research which involves oil spill practitioners
- Connect crisis communications and risk communications during response
- Enable direct interaction with stakeholders to develop trusted relationships
  - Learn about their risk perceptions
  - Use established relationships