



Evaluating the performance of the Consensus Ecological Risk Assessment (C-ERA) process in improving oil spill response and planning

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INTRODUCTION

This study asks whether Consensus Ecological Risk Assessment (C-ERA) workshops are making a difference in oil spill response and planning. It evaluates 15 C-ERA workshops that have taken place during the past decade.

What is C-ERA?

- ▶ A simplified ecological risk assessment method that people can apply without extensive training. A modification of the formal EPA protocol (EPA, 1998) by Aurand (1995).
- ▶ C-ERA workshop participants learn and practice assessing the relative ecological benefits and impacts of alternative oil spill response actions.
- ▶ Participants include resource trustees and stakeholders from local, state, and federal agencies, NGOs, and the oil industry.
- ▶ C-ERA workshops are sponsored by the U.S. Coast Guard and supported by NOAA's Office of Response and Restoration.

Why might C-ERA be needed?

- ▶ Arguments about response strategies are common during oil spill responses, slowing decision-making. Chemical dispersants and *in situ* burning are especially contentious. Windows of opportunity can close for some response options (e.g., the oil emulsifies and can't be skimmed or burned, the sea state changes so that equipment can't be used).
- ▶ Discussion, intuition-building, and consensus-building *before* a spill happens could promote a response that best enhances recovery.

Goals of C-ERA workshops

- ▶ Facilitate ecological risk-based spill response planning by local response communities.
- ▶ Build consensus about the potential ecological risks and benefits of spill response options.

How C-ERA works

1. Workshop designers define a realistic oil spill scenario in the area of concern.
2. NOAA uses computer models to predict the fate of the spilled or burned oil and to forecast burn plumes and potential concentrations of dispersed oil in the water column if dispersants are/are not applied.
3. Working in small groups, participants score the risk to each resource at risk (a species or group of species) from each response option. To score risk, they estimate the percentage of the resource that could be injured, and the expected recovery time. Groups record their justifications for each risk score. Resource experts are available to each group.
4. When groups' risk scores differ, participants compare rationales for risk scores and discuss whether consensus is in order. Groups may agree to differ.
5. Participants develop recommendations for the Regional Response Team (RRT) and complete lessons learned.

OBJECTIVE OF THIS STUDY

- ▶ Find out whether C-ERA workshops are improving oil spill response and planning.
 - While anecdotal evidence indicates that some workshops may have prompted changes in planning and response, no systematic assessment had been made.

METHODS

The assessment project is using three social science methods. Using multiple methods makes it possible to cross-compare the findings obtained using the individual methods to provide a more complete picture of the C-ERA process and its effects.

- ▶ **Survey of C-ERA workshop participants.** A survey was administered online in April 2008, using University of Washington web survey tools. The purposes of the survey were to: (1) estimate the proportion of participants reporting changes to their own attitudes and understanding, and to regional response and planning, that they consider to be at least partially due to the C-ERA workshop(s); (2) learn what kinds of changes have taken place; (3) assess the significance of those changes; (4) estimate the proportion of participants reporting no changes due to their workshop(s); and (5) learn what factors may prevent changes following a workshop. Seventy-five participants (24% of those for whom email addresses were available; about 21% of all C-ERA participants) responded to the survey.

We thank all C-ERA participants who completed our survey!

- ▶ **Analysis of participants' recommendations to RRTs made during past workshops.** At the end of each workshop, participants developed consensus recommendations to their RRT, drawing from their experiences and findings during the workshop. These recommendations are being analyzed to identify recurring themes, trends over time, and priority concerns.
- ▶ **Interviews of a subset of all participants.** The final step in the assessment project will be telephone interviews.



Figure 1. Oil spill response options typically considered during C-ERA workshops. Clockwise from upper left: application of chemical dispersant; skimming operation; *in situ* burning; applying protection boom. The option of no response is also considered.

SURVEY RESULTS

C-ERA workshop goals have been (partially) met:

- ▶ Nearly half (45%) of all survey respondents believe that response and planning in their regions have been improved by the workshop(s).
- ▶ Key C-ERA objectives were met, in the eyes of most survey respondents:
 - 76% report they're better at thinking through ecological risks and tradeoffs.
 - 72% feel better prepared to make decisions about spill response options.
 - 60% believe they achieved consensus on the important issues during the workshops.
 - 40% are interacting more with other workshop participants.

"The ERA process provided a framework in which people could ask questions, evaluate tradeoffs, and make decisions based on best available information..."

"I got to know the trustee community and have been able to keep up conversations on response issues."

"It...helped the more ecologically concerned stakeholders understand that maybe some tradeoffs are better than others (like using dispersants in shallow water)."

The workshops shifted many participants' thinking:

- ▶ One-third of the survey respondents report enhanced understanding of oil spill response and response options.
- ▶ 55% are now willing to consider a wider range of response options.
- ▶ In additional comments, 10% report an enhanced understanding of the concerns and perspectives of other stakeholders, especially resource trustees.

The workshops inspired changes in planning and response:

- ▶ One-third (27) of the respondents reported changes during drills and responses that they believe were inspired by C-ERA workshop(s), including:
 - Serious consideration of dispersants following 5 workshops.
 - More and faster coordination and interaction among groups and agencies following 5 workshops.
- ▶ Updates to dispersant pre-approval areas, plans, and/or policy are in process or completed following 5 workshops, according to respondents.
- ▶ 47% of respondents reported that the workshop(s) have influenced or are influencing either regional or area contingency plans in 6 states.
- ▶ Reports on 4 C-ERA workshops at RRT or Area Committee meetings inspired new activities, according to respondents, including:
 - Further researching of topics and "lessons learned" discussions after 3 workshops
 - Development of an experts database for Delaware Bay.
 - Use of C-ERAs as training tools and as a model for developing dispersant use zones along the California coast.

SURVEY RESULTS

The workshops generated some concerns and recommendations:

- ▶ 84% of survey respondents feel that including experts with multiple viewpoints on at least some topics would enhance C-ERA workshops.
 - Dispersants (including biological impact and effectiveness) were recommended by 35% of all respondents as a topic for which different viewpoints could enhance workshops.
- ▶ Many respondents expressed concerns about bias.
 - Of the 50 respondents who made additional comments about the workshop(s), 11 expressed concern about bias in the design and/or facilitation of the workshop, generally in favor of promoting the use of dispersants.
 - More than one-fifth of all respondents felt that dissenting opinions were not taken seriously during the workshop.
- ▶ 39% of all respondents wanted more information about the effectiveness of the response options addressed in the workshop(s).

"Dispersants are always a difficult topic to explore...more varied expertise might ease the process."

"There needs to be more point-counterpoint on the longer term impacts of dispersed oil."

"Facilitators should be very careful about avoiding bias toward any particular response technique, such as dispersant application."

SUMMARY

- ▶ C-ERA workshops have inspired improvements to oil spill response and planning, as judged by survey respondents. These improvements include better communication among stakeholders, enhanced understanding of response issues, changes to plans and policies, and new initiatives.
- ▶ Areas for future improvement exist. Because participants in C-ERA workshops bring multiple perspectives, workshop facilitators should take care to avoid bias in favor of any particular perspective or workshop outcome(s). Potential workshop modifications to consider include involving presenters with differing viewpoints about response options, and making more information about the effectiveness of response options available to workshop participants.

REFERENCES CITED

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- EPA. 1998. Guidelines for Ecological Risk Assessment. *Federal Register* 63(93):26846-26924.

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