

Overview of the Coastal Response Research Center

Nancy E. Kinner
September 27, 2005
EPA Region 1



Coastal Response Research Center

Center Creation

- Funding for oil spill research decreasing
 - Government
 - Private sector
- Many research needs exist regarding spill response, recovery and restoration



Center Creation

- NOAA's Office of Response and Restoration (ORR) wanted to partner with research-oriented university to create center to address research needs
- NOAA and University of NH (UNH) have a history of research partnerships
- UNH has strong marine environmental research interest
- UNH has experience with running competitive research grant programs



Center Creation

- ORR/UNH oil spill partnership started in 2002
- Coastal Response Research Center formed in 2004
- Co-Directors:
 - UNH - Nancy Kinner
 - NOAA - Carol-Ann Manen



Overall Center Mission

- Develop new approaches to spill response and restoration through research/synthesis of information
- Serve as a resource for ORR and NOAA
- Serve as a hub for spill research, development, and technical transfer
 - Oil spill community (e.g., RRTs)



Center Oversight

- **Advisory Board**
 - Review and evaluate Center's general policies, research themes, and priorities
- **Science Advisory Panel**
 - Advice/recommendations on quality and usefulness of the funded projects



Advisory Board Membership

- NOAA: David Kennedy, Jim Murray (Sea Grant)
- USCG: Capt. Steve Hanewich
- USEPA: Reg. 1 Administrator Robert Varney
- API: Robin Rorick
- State Agencies: Robin Jamail (Tx GLO)
- UNH: John Aber (VP Research), Jon Pennock (Marine Prog. Director)



Center Program

- Research grant programs
 - Request for Proposals (RFPs)
- Workshops
- Communications/outreach
- Conference participation



External Grants Program



1. Annual Center RFP



Annual Request For Proposals

- Identification of priority research needs
 - November 2003 Workshop
 - Spill response community including industry and academia
 - Report on Center website
 - May 2004 NOAA Practitioners' Meeting
 - e.g., HAZMAT, DAC, Sea Grant, NCCOS
- RFP topics = Workshop/Meeting outcomes



Annual RFP Mechanics

- Internet distribution, preproposal and proposal submittal, and reviews
- Issue RFP in May
- Projects funded start following January
- \$1.0 to 1.2M funding available annually



Peer Review

- Several peer reviews per proposal
 - 4 experts do individual reviews
 - 2 panel reviews
- Reviewed for:
 - Technical approach and innovativeness 30%
 - Scientific and management relevance 30%
 - Transferability 15%
 - Budget appropriateness 10%
 - Qualifications of project investigators (PI) 10%
 - Support and capabilities 5%



Sample of Current Grants



Response

- A Module for NOAA's GNOME Model To Provide Capability To Simulate Deepwater Oil and Gas Spills
 - P. Yapa, Clarkson University, **COMPLETE**
 - CDOG (Clarkson University Deepwater Oil and Gas) model
 - Jet/plume and rise
 - Linked to NOAA GNOME surface trajectory model



Injury and Recovery

- Use of Meiobenthos for Risk Assessment of Low Level Crude Oil WSFs: Rapid Copepod-Based Approaches for Evaluating Long Term Endocrine and Reproductive Toxicity
 - G.T. Chandler, Univ. South Carolina,
COMPLETED
 - Using novel assay that determines threshold toxicity of water soluble fraction (WSF) of crude for meiobenthic copepods
 - Culturing copepods through two generations (full life cycle) with range of possible WSF post-remediation concentrations



Injury and Recovery

- Acute and Chronic Effects of Crude and Dispersed Oil on Chinook Salmon Smolts
 - R. Tjeerdema, UC Davis
 - Assessing acute and long-term impacts of water accommodated fraction (WAF) and chemically-enhanced (dispersant) WAF (CEWAF) of Prudhoe Bay crude on salmon smolts
 - Jointly funded with CA OSPR



Injury and Recovery

- Dispersants as Oil Spill Countermeasure for Remediation & Restoration in Sensitive Coastal Habitats
 - Q. Lin, Louisiana State
 - Determining effect/fate of oil and dispersed oil in different marsh sediments as function of season
 - Determining effect of dispersants on oil sorption/fate in marsh sediments



Injury and Recovery

- Effects of oil exposure on terns breeding in Buzzards Bay
 - F. Tseng, Tufts Univ
 - Using 35 year demographic and physiological dataset, compares suite of blood-based parameters with reproductive success



Injury and Recovery

- Long-term effects of oiling of diamondback terrapin and snapping turtle nests
 - C. Rowe, Univ. of MD
 - Eggs, hatchlings and juvenile turtles exposed to oil in artificial nests monitored for viability, metabolic and growth rates and developmental and behavior abnormalities



Communication

- Establishing performance metrics for oil spill response, recovery and restoration
 - S. Tuler, SERI
 - Including public in review and examination of metrics used in describing progress of spill response and restoration
 - e.g., Using actual spills as case studies



2005 Annual RFP Topics

- Data sets to verify fate and transport models
- Integrating regional observing systems with circulation and transport forecasts
- Recovery of natural resources
- Injury to natural resources
- Valuing restoration
- Effects and efficacy of dispersants



Projects' Summary

- 14 projects funded
 - 3 complete
 - 3 finishing in 2005
 - 3 finishing in 2006
 - 5 finishing in 2007
- 3 on response
- 9 on injury and recovery
- 1 on communication



2. Cold Climate RFP



Cold Climate RFP

- Partnership between:
 - Oil Spill Recovery Institute (Cordova, AK)
 - Cooperative Institute for Coastal and Estuarine Environmental Technology
 - Coastal Response Research Center
 - Mineral Management Service



Cold Climate RFP Process

- Cold Climate RFP released in June 2005
- \$1M available
- Funding for Summer 2006 field season
- International projects allowed
 - e.g., Norway, Canada, Russia, Japan
- Funding announced in February 2006



2006 Cold Climate RFP Topics

- Detection, containment and clean-up of oil spills
- Exposure and injury assessment tools
- Data development: Processes and rates affecting oil
- Human use valuation of ecosystems
- Habitat recovery and restoration technologies



Information Transfer and Outreach



Outreach

- Center Website
- www.crrc.unh.edu
- RFP process run online
- Information on research projects
 - Proposals
 - Progress reports
 - Final reports
 - Presentations
 - Articles



Outreach

- Upcoming events/workshops/meetings of interest on spill response, recovery and restoration and related topics
- Center contact information



Outreach

- Every March - Emerging Research Workshop
 - Center PIs presented results
 - Free and open to all
 - Attendees: NOAA, USCG, MMS, EPA, API, State, Industry
- Upcoming Workshops
 - Socioeconomic and human valuation issues in oil spill response research needs
 - Oil spill modeling: national coordination of efforts



Dispersants Initiative

- NRC report on dispersants efficacy and effects discussed need for integrated research plan
 - Need for collection and dissemination of peer-reviewed information
 - Scientifically-robust and environmentally-meaningful context
 - Center's mandate from NOAA to address national issues related to spills
 - Act as a hub for oil spill research



Dispersants Initiative

- Center and NOAA convened meeting of NRC, USEPA, MMS, USCG, TXGLO, OSRI, LA OSRD, CA OSPR, API and Industry reps
 - July 2005
- General willingness by all parties to participate in formulation of integrated research plan (Dispersants Working Group)
- Workshop on R&D needs for making decisions regarding dispersing oil



Dispersants Workshop

- UNH on Sept 20-21 to determine research needs
 - Dispersant effectiveness
 - Dispersant effects
- ~35 invitees from regulatory agencies, academia, private sector
- Working Group planning meeting on Sept 22
 - Coordinate RFPs



Coastal Response Research Center

www.crrc.unh.edu

