

Environmental Disasters Data Management (EDDM) Update

February 7, 2017



Coastal Response Research Center

1

EDDM Project Leads

- NOAA Co-Lead: Amy Merten, NOAA ORR ARD
- NOAA Co-Lead: Sharon Mesick, NOAA NCEI
 - Russ Beard retired in 2015
- Facilitator: Nancy Kinner, Coastal Response Research Center, University of New Hampshire



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2

Welcome and Introductions

- EDDM Working Group Speakers:
 - Amy Merten, NOAA ORR ARD
 - Ben Shorr, NOAA ORR ARD
 - Julie Bosch, NOAA NCEI



Presentation Overview

- EDDM Goals
- EDDM 2014 Workshop and Report
- EDDM Working Groups
 - Objectives, Outcomes, and Status
- 2017 DWH Long Term Data Management Coordination Workshop



EDDM Overall Goals

- Foster communication between collectors, managers, & users of data (e.g., scientific and research communities, industry, NGOs, and government agencies)
- Identify & establish best practices for orderly data collection, storage, & retrieval



EDDM Objectives

- Engage data users, managers, and collectors to foster a culture of applying consistent terms & concepts, data flow, & QA/QC
- Provide oversight in establishment & integration of foundational, baseline data collected prior to an event, based on user requirements
- Provide best-practice guidance for data & metadata management



EDDM Objectives, Cont'd

- Suggest infrastructure design elements to facilitate quick & efficient search, discovery, & retrieval of data
- Define the characteristics of a “gold standard” data management plan for data sampling, formatting, reliability, & retrievability
- Deliver conclusions to end users to promote the protocols, practices, & recommendations



2014 EDDM Workshop

- September 2014 at the USFW National Conservation Training Center in Shepherdstown, WV
- Participants from industry, government, NGOs, & academia on regional, national, & international levels
- Disciplines included human health, environmental health, & informatics experts
- “Environmental disasters”: floods, earthquakes, hurricanes, tornados, and discrete pollution events (e.g., oil spills)



2014 Workshop Recommendations

- Use Existing Resources
- Review Open Data Policy
- Employ Existing Tools
- Compile Background Data
- Work Toward a Common Data Model and Interoperability
- ID & Answer Fundamental Questions - User Centered Design
- Identify Data Dictionaries
- Include NGO and Academic Data
- Incorporate Data Management Plans
- Include Data Managers in Response
- Address Planning and Training
- Work Across Disciplines
- Perform Outreach and Prepare Outreach Materials



EDDM Working Groups

- 3 Working Groups:
 - Field Protocols and Training
 - Common Data Model
 - Gold Standard
- Document storage and sharing in Google Drive
- Groups reviewed workshop recommendations and determined objectives, outcomes, and schedule
- Working groups met monthly via WebEx/Zoom from June 2015 through December 2016



Field Protocols and Training: Working Group Members

- Shawn Fisher, U.S. Geological Survey
- Maria Hartley, Chevron
- Amy Merten, NOAA ORR ARD, Spatial Data Branch
- Steve Ramsey, Social & Scientific Systems/NIH GuLF Study
- Carol Rice, University of Cincinnati, Environmental Health
- Laura Weems, U.S. Army Corps of Engineers



Field Protocols and Training

- Objective 1: Inventory existing resources for field data collection. Document what is available and gaps.
- Outcome: Completed [table](#) of existing protocols and gaps
 - Resource name, description, and type
 - Publishing agency/org, lead author, and date
 - Reference citation
 - Matrix and parameters covered - includes human and environmental
 - Sampling regime
 - Type of disaster
 - Equipment covered
 - Hyperlinks
 - Any documents the resource supersedes
 - EDDM contact person



Field Protocols and Training

- Objective 2: Inventory existing protocols for gathering exposure and biomonitoring data. Document what is available and gaps, including need for training.
- Outcome: (Nearly) completed [table](#) of existing protocols and gaps
 - Sampling objective category & parameter
 - Media
 - Important considerations
 - Practitioner training
 - Organizations with capability
 - Event type
 - Links
 - EDDM contact person



Field Protocols and Training

- Objective 3: Apprise academics & NGOs of sampling protocols they should use to get data included.
- Outcome: Sampling protocol(s) for NGO/Academic data that can be shared
 - Exploring possibility of putting EDDM work on the NIH Disaster Research Response (DR2) Data Collection Tools & Resources website



Common Data Model: Working Group Members

- Steve Delgreco, Black Swan Innovations, LLC
- Dan Hudgens, Industrial Economics, Inc
- Mike McCann, Monterey Bay Aquarium Research Institute
- Joe Schaefer, EPA
- Ben Shorr, NOAA ORR ARD, Spatial Data Branch
- Lauren Showalter, NAS Gulf Research Program
- Fred Sparks, Chevron
- Mark Stenzel, Exposure Assessment Applications, LLC



Common Data Model

- Objective 1: Document what specific data models, portals (data sets), and web services people are using across different disciplines and compile details regarding each one.
- Outcome: Completed table of data systems pertinent to environmental disasters
 - Portal name, purpose, & location
 - Category
 - Frequency of data updates
 - Hardware
 - Application software
 - Webserver
 - Database
 - url
 - Priority for integration
 - Use restrictions



Common Data Model

- Objective 2: Crosswalk existing data models to find similar elements.
- Outcome: Identify redundancy, compatibility across data models
 - Completed crosswalk of NOAA DIVER and EPA Scribe



Common Data Model

- Objective 3: At all levels (field collection, synthesis, analysis) inventory/identify existing ways to be interoperable.
- Outcome: Make recommendations where we can leverage approaches to interoperability and security.
- Schedule: Completion date will be decided at the 2017 DWH Long Term Data Management Workshop



Gold Standard Working Group

- Julie Bosch, NOAA NCEI
- Linda Cook, Exponent
- Felimon Gayanilo, Harte Research Institute/GOMRI
- James Gibeaut, Harte Research Institute/GRIIDC
- Matt Howard, GCOOS/GOMRI/GRIIDC
- Ann Jones, Industrial Economics, Inc
- Ben Shorr, NOAA ORR ARD, Spatial Data Branch
- Trish Stewart, Stewart Exposure Assessments, LLC
- Jason Weick, Coastal Waters Consortium/LUMCON
- Kyle Wilcox, Axiom Consulting AOOs Team
- Sarah Wright, Locus Technologies



Gold Standard

- Objective 1. Identify the functionality needed for information management and decision support tools for different disaster types and where these functionalities are located (e.g., IPAC, HAZUS, ERMA) or missing (gaps).
- Outcome: Completed [table](#) including a series of matrices of tool vs. disaster type for different disaster scenarios
 - ID functionality & purpose
 - Where it exists
 - Gaps
 - Key data types examples
 - Type of disasters
 - Summary



Gold Standard

- Objective 2. Identify criteria to evaluate data and procedures (for QA/QC, data transport, security, and data use analytics) that can be considered a Gold Standard.
- Outcome: In progress is a list of criteria, subdivided depending on types of data, methodology, disaster. Develop an evaluation worksheet - of criteria and ranking/result.
 - Data type category & data type
 - QC criteria
 - Current QA/QC procedure
 - Responsible party
 - Suggestions for QA/QC improvements & efficiencies



Gold Standard

- Objective 3: Identify critical data types for baseline data for different environments and types of disasters
- Outcome: (Nearly) complete report including a series of matrices of data type vs. disaster type for different environments
 - Critical data types for baseline data
 - Parameters
 - Media and category
 - Recommended resource



Gold Standard

- Objective 4: Identify definitions of terms (data dictionaries).
- Outcome: (Nearly) complete survey of different data dictionaries as a function of environmental disaster type and provide access to them.
 - Data dictionary name
 - Links
 - Critical data types



DWH Long Term Data Management Coordination Workshop

- Partners: CRRC, NOAA ORR, NOAA NMFS RC, NOAA NCEI
- Date: June 7-8, 2017
- Location: NOAA Gulf of Mexico Disaster Response Center, Mobile, AL
- Workshop is by invitation only



Organizations on the Workshop Organizing Committee

- Bureau of Ocean Energy Management
- Coastal Response Research Center
- Florida Fish and Wildlife Conservation Commission
- Geological Survey of Alabama
- Gulf of Mexico Coastal Ocean Observing System
- Gulf Coast Ecosystem Restoration Council
- Gulf of Mexico Alliance
- Gulf of Mexico Research Initiative
- Mississippi Department of Marine Resources
- National Academy of Sciences
- National Fish and Wildlife Foundation
- NOAA NCEI
- NOAA NMFS RC
- NOAA ORR
- Ocean Conservancy
- RESTORE Act Centers of Excellence
- Texas General Land Office
- University of Miami
- U.S. Department of the Treasury
- U.S. Geological Survey



2017 Workshop Objectives

- Foster collaboration among Gulf of Mexico partners for data management & integration for restoration planning, implementation & monitoring.
- Identify standards, protocols & guidance for long term data management being used for DWH NRDA, restoration, & public health efforts.
- Obtain feedback & identify next steps for the EDDM Working Groups work.
- Work towards best practices on public distribution & access of this data.



Questions or Comments?

EDDM Workshop Report:

<http://crrc.unh.edu/workshops/EDDM>

EDDM Working Groups:

<http://crrc.unh.edu/EDDM>

DWH Long Term Data Management
Coordination Workshop:

http://crrc.unh.edu/DWH_DataManagement

