Introduction to DOTS

Dr. Doug Clarke

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Introduction to DOTS

Dredging Operations
Technical Support Program

http://el.erdc.usace.army.mil/dots
DOTS FUNCTIONS

Databases
- E2-D2
- UDMEED
- ERED
- BSAF
- ODDS

Technical Responses

Publications & Guidance

MODELS & TOOLS

Technology Demonstrations

TRAINING

Interagency Coordination

OUTREACH

Center for Contaminated Sediments
Direct Technical Support

A Response Can

• be initiated by letter or e-mail request
• consist of up to 2 weeks of scientist or engineer time & travel expenses
• range from a phone call “one stop”, to a technology demo, to a site visit
• result in products such as an MFR, technical document, or expert testimony
Activities

• Training
  – Dredged Material Assessment and Management Seminar
    • San Francisco, 2002
    • Denver, 2003
    • Cleveland, 2004
    • Boston, 2005
    • Sacramento, 2008
The Dredging Operations Technical Support Program, known as DOTS, provides direct environmental and engineering technical support to the U.S. Army Corps of Engineers Operations and Maintenance (O&M) dredging mission. Technology transfer activities have supported diverse field needs for years and have directly benefited O&M dredging operations throughout the United States.

Take a Trip Through a Dredge!
PUBLICATIONS

- Technical Notes
- Technical Reports
- DOER – Active
- DMRP, FVP, LEDO - Archived
- Dredging Research Bulletin
- Research Briefs
GUIDANCE DOCUMENTS

- Engineer manuals
- Capping
- Testing Manuals
- Leachate Guidance
- Technical Framework
- Sediment Quality Guidelines
DATABASES

• Environmental Effects & Dredging and Disposal Literature Database (E2-D2)
• Ocean Disposal Database (ODD)
• Biota Sediment Accumulation Factor Database (BSAF)
• Environmental Residue-Effects Database (ERED)
• Upland Dredged Material Environmental Effects Database (UDMEED)
• Sea Turtle Data Warehouse (STDW)
Welcome to E2-D2 (Environmental Effects & Dredging and Disposal). E2-D2 is a literature database comprised of technical references covering a diverse range of topics related to environmental effects of dredging and dredged material disposal projects. The database focuses on broad topics such as beneficial uses of dredged material, contaminated sediments, and effects of sediment resuspension and sedimentation on aquatic organisms and their habitats. Much of the technical literature pertaining to dredging and dredged material disposal is found in the "gray" literature, i.e., non-peer-reviewed federal or state agency publications, or proceedings of symposia and specialty conferences. Many other studies of dredging operations are documented in the form of unpublished contract reports frequently held in project files rather than libraries or archives.

(Click here for more information)

Begin Searching

Work for Others | Technology Transfer | What's New
BSAF Database
(Your Source For Biota-Sediment Accumulation Factor and Lipid Data)

Technical Point of Contact: Mr. Charlie Lutz E-mail

U.S. Army Corps of Engineers | Engineer Research and Development Center | Environmental Laboratory | Search EL

Search For:

BSAF Data
♦ By Organism
♦ By Chemical
♦ Benthic BSAFs with Statistics

Lipid Data
♦ By Organism

Reference
♦ Search For A Reference
♦ Display All References

BSAF Background Information
Environmental Residue – Effects Database (ERED)

The Environmental Residue-Effects Database (ERED)

The U.S. Army Corps of Engineers/U.S. Environmental Protection Agency Environmental Residue-Effects Database (ERED) is a compilation of data, taken from the literature, where biological effects (e.g., reduced survival, growth, etc.) and trace contaminant concentrations were simultaneously measured in the same organism. Currently, the database is limited to those instances where biological effects observed in an organism are linked to a specific contaminant within its tissues.

Technical Point of Contact: Dr. Todd Bridges, Email: Charlie Luna, Email:

Last Data Update: November 2004

Best Viewed With Internet Explorer 4, SP 2 or higher

Search the ERED

(No Plug-in needed)
The U.S. Army Corps of Engineers Upland Dredged Material Environmental Effects Database (UDMEED) is a compilation of data, taken from the literature, where biological effects and/or tissue contaminant concentrations were measured in the same organism either in contact with, or commonly associated with, dredged material deposited in an upland situation.
Maintenance of inland and intracoastal waterways for navigation is essential for national and international trade, job creation, and national security. These waterways also provide hydropower, flood protection, municipal water supply, agricultural irrigation, recreation, and regional development. The US Army Corps of Engineers' role in maintaining and improving these waterways began in 1824 and, today, the Corps maintains over 12,000 miles (19,200 km) of waterways throughout the United States.

Several types of dredges are typically used for excavating sediments to construct new waterways or maintain navigation depths in channels. Cutterhead pipeline, hopper, and mechanical dredges are the three primary types used throughout U.S. waterways. The type used depends on factors such as sediment type, location, environmental considerations, and wave conditions. More...
Models

- **ADDAMS**
  Set of continually evolving, state-of-the-art, computer-based tools that will increase the accuracy, reliability, and cost-effectiveness of dredged material management activities in a timely manner.
  - Fact sheet
  - Demo

- **TrophicTrace: A Tool for Assessing Risks from Trophic Transfer of Sediment-Associated Contaminants**
  TrophicTrace is an Excel™ add-in that provides a spreadsheet tool for calculating the potential human health and ecological risks associated with bioaccumulation of contaminants in dredged sediments.
# Dredged Material Disposal Management Models

<table>
<thead>
<tr>
<th>Model</th>
<th>Application Programs</th>
<th>Description</th>
<th>Download Self-extracting, Executable files</th>
<th>Download Document Files</th>
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<tr>
<td>ADDAMS:</td>
<td>Setting Test Tool</td>
<td>Tool to Aid Conduct of Setting Test and Setup</td>
<td>SetForms.exe</td>
<td>SetPro.pdf</td>
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<td></td>
<td>Windows CDF</td>
<td>Integrated CDF Design Module (SETTLE and DYECON)</td>
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<td>Version 1.0</td>
<td>Design of Confined Disposal Facilities (CDFs) for Suspended Solids Retention and Initial Storage Requirements</td>
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<td>Computation of Mixing Zone Size or Dilution for Continuous Discharges</td>
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<td>EFLUENT</td>
<td>Combined effluent pathway evaluation module (EFQUAL and LAT-B)</td>
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<td>Combined effluent pathway evaluation module (EFQUAL and LAT-B)</td>
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POC: Paul Schroeder

(Y2K Compliance)
Center for Contaminated Sediments

U.S. Army Corps of Engineers | Engineer Research and Development Center
Environmental Laboratory | Search EN

Todd S. Bridges, Ph.D., Director

The U.S. Army Corps of Engineers Center for Contaminated Sediments serves as a clearinghouse for technology and expertise concerned with contaminated sediments. The Center’s mission is to advance the development and application of sound science and engineering principles and technology in the assessment and management of contaminated sediments. The Center pursues this mission through sponsoring development of new initiatives and innovative technologies, organizing and sponsoring technical workshops and symposia, and working on contaminated sediment projects with other organizations within the Corps, Department of Defense, other federal and state agencies, academia, and the private sector.

With more than two decades of experience in various aspects of identifying, delineating, assessing, remediating, and managing contaminated sediments, Corps engineers and scientists are on the cutting edge of research in this important area. This expertise is a direct result of research and development activities funded in support of the Corps’ navigation mission and reimbursable work related to site assessment and cleanup for other elements within the U.S. Department of Defense, the U.S. Environmental Protection Agency, and others.

- CCS support to the Superfund Sediment Resource Center

Work for Others | What's New
Educational Outreach

Objectives
• Promote understanding of navigation and dredging
• Create a Corps-Classroom connection

Target Users
• K-12+ Students
• Teachers
• Home Schoolers
• Corps Employees

Site Components
• Unit lessons
• Classroom activities
• Demos and Experiments
• Interactive quiz games
• Young Engineer’s Club
• Corps and government links
• Teacher resources
• Education links
Points of Contact:

- E2-D2 – Doug Clarke, 601-634-3770
- ODD – Charlie Lutz, 601-634-2489
- BSAF – Charlie Lutz, 601-634-2489
- ERED – Charlie Lutz, 601-634-2489
- Trophic Trace – Igor Linkov, 617-233-9869
- UDMEED – Elly Best, 601-634-4246
- ADDAMS Models – Paul Schroeder, 601-634-3709
- Outreach Site - Dena Dickerson, 601-634-3772
- T&E Species – Dena Dickerson, 601-634-3772

Web Master – Ginny Dickerson, 601-634-4261

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