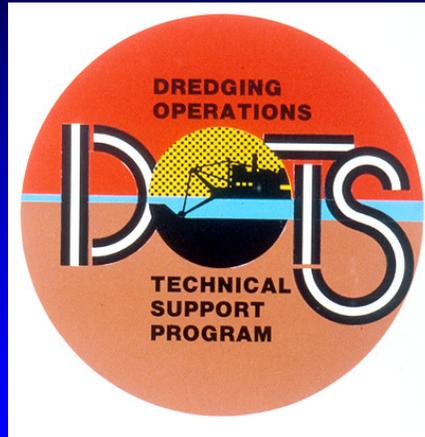


# Dredging Operations Technical Support Program (DOTS)

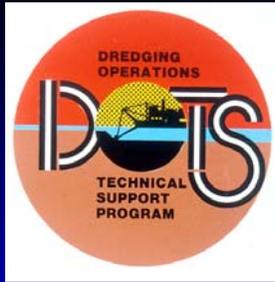


*Since 1978*

**Dr. Doug Clarke**

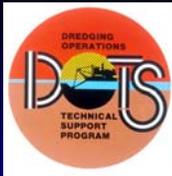
## **DOTS MISSION AREA**

# **NAVIGATION**



## **DOTS FUNCTIONS**

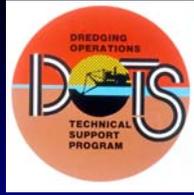
- **Technology Transfer**
  - **Direct Technical Support**
  - **Training & Outreach**
  - **Technology Application**



## **Direct Technical Support**

### **A Response Can.....**

- **be initiated by letter or e-mail request**
- **consist of up to 2 weeks of senior scientist or engineer time & travel**
- **range from phone calls to on-site assistance**
- **result in products such as an MFR, technical document, or litigation testimony**



## Activities

- **Training**
  - **Dredged Material Assessment and Management Seminar**
    - San Francisco, 2002
    - Denver, 2003
    - Cleveland, 2004
    - Boston, 2005

## DOTS GOAL

- **Provide a gateway to comprehensive, up-to-date resources on all engineering and environmental aspects of navigation**
  - **Web-based tools**
  - **Maintain network of key points of contact**

## Dredging Operations Technical Support Program

U.S. Army Corps of Engineers | Engineer Research & Development Center | Environmental Laboratory



**Program Manager: Dr. Douglas Clarke**  
**Program Monitor: Mr. Joseph Wilson**

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!**

What's New

Research

Databases

Beneficial Uses of Dredged Material

Publications

Guidance Documents

Models

Center for Contaminated Sediments

Expertise/Contacts/Research Teams

Training

Dredging Resources

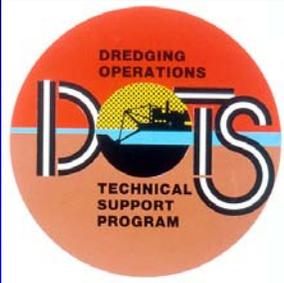
Education Center

Related Sites

ACCORD

# DOER

## Research Links



**Dredging Operations and Environmental Research**  
*... striking the balance*

U.S. Army Corps of Engineers | Engineer Research and Development Center | Warrington

**Point of Contact**  
Robert M. Angier, Ph.D., Senior Scientist (EL)  
William H. McAnally, Ph.D., Technical Director (CIL)

**DOER Focus Areas**  
Contaminated Sediments  
Environmental Wetlands  
Ecosystems/Restoration  
Sedimentation  
Sediment Transport/Placement  
Soil Investigation

**Technology Transfer**  
Transfer  
Technical notes  
Publications  
Research Grants

**Research Team**

**Tools**  
Dredging Calculators and Conversion Tools  
AquaSense  
DOTS Sediment Reducer (v1.1)

**Related WES links**  
Coastal and Hydraulic Laboratory/Dredging Environmental Laboratory/Dredging Laboratory/Technical Support

**USACE Program Monitors**

• Barry Hultquist, Navigation	• Joseph E. Wilson, Navigation
• Charles Chesnut, Planning	• Michael J. Klotzerman, Engineering

# DMRP

# DRP

# FVP

# LEDO

# PUBLICATIONS

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

**Dredging Operations Technical Support Program**  
Publications

(U.S. Army Corps of Engineers | Engineer Research and Development Center | Environmental Laboratory | Wainwright)

- **Environmental Effects & Evaluation and Deposit (EEDD)**  
Nonpublic publications reference database containing reports, journal articles, conference proceedings, and publications available from world wide sources. The database is updated continuously and contains no only EEDD references, but includes some other works.
- **Technical Reports**  
Dredging Operations and Environmental Research (DOER)  
Fang, Texas Effects of Dredging Operations (1-FEH)  
Environmental Effects of Dredging Program  
Archived Former Programs:  
Dredged Material Research Program (DMRP): List | Summary reports online  
Dredging Research Program (DRP): List | Summary reports online  
Field Verification Program (FVP): Summary reports online  
Research Briefs: [View all research briefs](#) | [View all research briefs \(1-FEH\)](#) | [View all research briefs \(1-FEH\)](#)
- **Influence of Food Ratios on Sediment Toxicity in Mussels (*Mytilus edulis*)** (Austriak, Polychaeta)  
Dredge Disposal: Comparison Demonstration of Boston Harbor  
Information Technology  
Dredging Research
- **Technical Notes**  
Dredging Operations and Environmental Research (DOER)  
Environmental Effects of Dredging Program (see also 1-FEH, EEDD, and other programs)  
Dredging Research Program (DRP) (Archived)

[Click to EDC's homepage \(link to Content for Contaminated Sediments\)](#)

Continued "Click on content"  
Updated May 23, 2004

# GUIDANCE DOCUMENTS

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

**Dredging Operations Technical Support Program**  
Guidance Documents

(U.S. Army Corps of Engineers | Engineer Research and Development Center | Environmental Laboratory | Wainwright)

- **Engineer Manuals**  
"Dredging and Dredged Material Disposal," Engineer Manual 1110-2-2025  
"Dredged Material Beneficial Use," Engineer Manual 1110-2-2026  
"Control of Dredged Material," Engineer Manual 1110-2-2027  
Guidelines for Subaqueous Dredged Material Capping (2-F-ang Series)  
Island Test Manual  
Joint EPA-USACE Implementation Memorandum (2-F-3-ang)  
Island Testing Manual
- **Leachate Guidelines**  
USACE Implementation Memorandum (2-F-2-ang)  
ref = Technical Framework  
ref = (2-F-2-ang) Leachate Testing and Evaluation for Freshwater Sediments  
ref = (2-F-2-ang) Leachate Testing and Evaluation for Estuarine Sediments  
ref = (2-F-2-ang) Technical Notes: Technical Considerations for Application of Leach Tests of Sediments and Dredged Material
- **Other Test Manual (Evaluation of Dredged Material Proposed for Ocean Disposal)**  
• **Technical Framework (Evaluating Environmental Effects of Dredged Material Management Alternatives)**  
• **USACE Implementation Memorandum for Sediment Quality Guidelines (SQGL) (References are linked from within the pdf document)**  
• **Regional Guidance**  
Great Lakes Dredged Material Testing & Evaluation Manual  
Dredged Material Evaluation Framework, Lower Columbia River Management Area (Final, November 1998)

**Evaluating Environmental Effects of Dredged Material Management Alternatives**  
- A Technical Framework

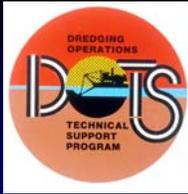
U.S. Army Corps of Engineers | Department of the Army | EP 600-2-004  
Wainwright | U.S. Army Corps of Engineers | November 1998

**TABLE OF CONTENTS**

**PREFACE**

**1.1 INTRODUCTION**

- Applicability, background, and regulatory context
- 2.1 OVERVIEW OF ENDOGENE, EXOGENE AND MAN-INDUCED ALTERNATIVES
- Developing agreement on changes, transportation and placement
- 3.1 FRAMEWORK FOR DETERMINING ENVIRONMENTAL ACCEPTABILITY
- Project requirements, identification, screening, and selection of alternatives
- 4.1 AUTHORITY OF CORP-WATER USE/REGULATIONS



# 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)**

## E2-D2

- Query
- Disclaimer
- Introduction
- Points of Contact
  
- DOTS
- DredgeLine



### Environmental Effects & Dredging and Disposal

[U.S. Army Corps of Engineers](#) | [Engineer Research and Development Center](#) | [Environmental Laboratory](#) | [Search EL](#)

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](#)

## E2-D2

- Query
- Disclaimer
- Instructions
- Related Sites
- Points of Contact

- DOTS



### Environmental Effects & Dredging and Disposal

#### Simple Query

This query allows searches for authors, titles, conferences, journals, and keywords.

#### Advanced Query

Query by

This query allows searches by author, title, or keyword.

#### Multiple Query

Query by    and

This query allows searches by a **combination** of author, title, or keyword.

## E2-D2

- Query
- Disclaimer
- Instructions
- Related Sites
- Points of Contact

- DOTS



### Environmental Effects & Dredging and Disposal

Query

Records 1 - 10 of 268 matching query "*turbidity*"

- 1 [Tidal and turbidity effects on the shallow-water fish assemblage of Kuwait Bay.](#)  
Abou-Seedo, F.; Clayton, D.A.; Wright, J.M. 1990. Tidal and turbidity effects on the shallow-water fish assemblage of Kuwait Bay.
- 2 [The effects of intermittent exposure to suspended solids and turbulence on three species of freshwater mussels.](#)  
Aldridge, D.W. 1987. The effects of intermittent exposure to suspended solids and turbulence on three species of freshwater mussels.
- 3 [Turbidity and temperature effects on oxygen consumption in the zebra mussel \(\*Dreissena polymorpha\*\).](#)  
Alexander, J.E.; Thorp, J.H.; Fell, R.D. 1994. Turbidity and temperature effects on oxygen consumption in the zebra mussel (*Dreissena polymorpha*).
- 4 [The role of particulate matter in the fate of contaminants in aquatic ecosystems - Parts I and II.](#)  
Allen, R.J. 1986. The role of particulate matter in the fate of contaminants in aquatic ecosystems - Parts I and II.
- 5 [Generation of resuspended sediment at the cutterhead.](#)  
Andrassy, J.B. 1987. Generation of resuspended sediment at the cutterhead.
- 6 [Dredging of polluted sediments in the First Petroleum Harbor, Rotterdam.](#)   
Angremond, K. d.; Jong, A.J. de; Waard, C.P. de. 1984. Dredging of polluted sediments in the First Petroleum Harbor, Rotterdam.
- 7 [A tank system for studying benthic aquatic organisms at predictable levels of turbidity](#)

# Ocean Disposal Database

Welcome to the United States Army Corps of Engineers Ocean Disposal Database Website

[ODD Home](#)

Click on Corps of Engineers Division Map to locate a specific disposal site,

Choose a [Report](#) or Search for [Disposal Site](#) or [Project Data](#)



Search Using [EPA Region Map](#)

## Reports:

Display volumes in:  [Cubic Yards](#)  [Cubic Meters](#)

- \* (1) [Amount disposed by all districts](#)
- \* (2) [Amount disposed at a single ocean site](#)
- \* (3) [Amount disposed within a single EPA region](#)
- \* (4) [Amount disposed in each major US Ocean](#)
- \* (5) [Amount disposed by a single district](#)
- \* (6) [Amount disposed by year, all districts](#)
- \* (7) [Amount disposed that met the exclusionary criteria](#)
- \* (8) [Total number of disposal projects by year](#)
- \* (9) [View data for an individual dredging project](#)

\*Click [here](#) to see the description and details of a particular report.

Files available for [Download](#)

## Ocean Disposal Database

Amount of Dredged Materials Ocean Disposed By Year in Cubic Yards at the Disposal Site

[Home/Choose a Disposal Site](#)

Site Name: MASSACHUSETTS BAY DISPOSAL SITE

Year	Total Quantity
1976	260,000
1977	104,200
1978	33,100
1979	91,800
1980	92,100
1981	315,200
1982	846,000
1983	282,900
1984	206,900
1985	273,300
1986	232,100
1987	118,700
1988	346,100
1990	224,100
1991	29,700
1992	1,321,500
1993	577,500
1994	226,700
1995	78,600

# 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](#)

## BSAF Organism Groups

### Select Organism Group of interest

Group

02013

These data have been compiled by personnel of The US Army Engineer Research and Development Center, Waterways Experiment Station, Environmental Laboratory (CEERD-EP-R). It is strongly suggested that users verify that the displayed data are appropriate for their use before basing any decisions on them.

[Return to BSAF Home](#)

Data were last updated on Sept. 1, 2004

Please contact Charlie Lutz with problems, suggestions, additions, etc. --- [Send E-mail](#)

Powered by dBase Plus software (© dBI Inc.)

## BSAF Data for *Pseudopleuronectes americanus*

Chemical	BSAF (n)	Error	Type	Wet/Dry	Tissue	Used?
PCB-MIXTURE	0.660 (231)	1.520	CV%	Dry	Unknown	yes <a href="#">Data</a>

There are not enough data to calculate grand mean and root mean square error for this species.

The range of BSAF values is 0.660 to 0.660.

Please Click Your Back Button To Select A Different Organism

The column **Type** indicates the type of error reported for these data. SE was converted to SD for statistical calculations.

The error type abbreviations are **SD** = standard deviation, **SE** = standard error, **CI** = confidence interval, **SEM** = standard error of the mean, **CV** = Coefficient of Variation, and **NA** = not available (unknown).

The column **Wet/Dry** indicates wet or dry weight. **Wet** = all values were wet weight, **Dry** = all values were dry weight, **Both** = sediment was dry weight, tissue was wet weight, **???** = Unknown, not specified in reference.

The column **Used?** indicates whether or not the BSAF data were used in the Grand Mean and Error calculations. Only data containing mean, error, and number were used in Grand Mean and RMS Error calculations.

Clicking on the **Data** link will display additional data for this record

These data have been compiled by personnel of The US Army Engineer Research and Development Center, Waterways Experiment Station, Environmental Laboratory (CEERD-EP-R). It is strongly suggested that users verify that the displayed data are appropriate for their use before basing any decisions on them.

[Return to BSAF Home](#)

## The Environmental Residue-Effects Database (ERED)

[U.S. Army Corps of Engineers](#) | [Engineer Research and Development Center](#) | [Environmental Laboratory](#) | [Search EL](#)

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 tissue 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 Points of Contact: [Dr. Todd Bridges](#) [E-mail](#) [Charlie Lutz](#) [E-mail](#)

- [Quality Assurance/Quality Control Issues](#)
- [User Directions](#)
- [Data Coverage](#)
- [Dredging Applications](#)
- [The Nature of Toxicological Effects](#)
- [Interpreting Bioaccumulation](#)
- [Acknowledgments](#)

Last Data Update - November 2004

[Search the ERED](#)

Best Viewed With Internet Explorer 4, SP 2 or higher



(No Plug-in needed)



- [ERED Home](#)
- [Search ERED](#)
- [Preferences](#)
- [Bibliography](#)
- [Help](#)
- [Comments](#)

### ERED Contains

Results	5955
Studies	1106
Species	239
Analytes	270
Effects	15
Endpoints	72

QUERY

SUMMARY

DETAIL

GRAPH

REFERENCES

### Search ERED

Species Scientific Name	Species Common Name	
-- All --	-- All --	
Analyte Name	Synonyms	
-- All --		
Analyte Chemical Class	CAS No	
-- All --	-- All --	
Effect Class	Toxicity Measure	Exposure Route
-- All --	-- All --	-- All --
Species Body Part	Species Start Lifestage	
-- All --	-- All --	
Species TSN Code		
-- All --		

Clear All

## Upland Dredged Material Environmental Effects Database (UDMEED)

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

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.

- ▶ UDMEED Main Search Page
- ▶ Introduction
- ▶ Bibliography

- ▶ Data Coverage
- ▶ Application for Management of Dredged Material in Upland Sites

- ▶ The Nature of Toxicological Effects
- ▶ Interpreting Bioaccumulation Data
- ▶ Acknowledgements

### Technical POCs:

Dr. Elly P.H. Best  
Charles H. Lutz

Support  
Set Preferences



Dredging Operations Technical Support (DOTS) Program

Webdate: February 20, 2004  
Comments / Whom to contact  
Privacy and Security Notice



## Upland Dredged Material Environmental Effects Database (UDMEED)

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

### Search the Database

Select parameters below to search the Upland Dredged Material Environmental Effects Database. To help you find the species or chemical of interest, you can limit your search by habitat, taxonomic kingdom, or chemical class. For instance, instead of reviewing the entire list of chemicals, you can first select a chemical class (e.g., metals), then only analytes in that class will appear in the Chemical Name drop-down box.

Database Search Form

**Habitat:**

Any Habitat     Terrestrial, Natural Soil     Terrestrial, Upland Dredged Material  
 Wetland, Natural Sediments     Wetland, Dredged Material

**Kingdom:**

Any Kingdom     Plantae     Animalia     Protista  
 Fungi     Monera

**Species Scientific Name**  
Spartina alterniflora

**Chemical Class**  
Metal     Chemical Name     Chemical Common Name  
-- Any --

**Effects Class**  
Accumulation

Number of Matching Record: 17       

[Back](#)

[Bibliography](#)

[Home](#)



**USACE Sea Turtle  
Data Warehouse**

US Army Corps  
of Engineers



---

[Home](#)

[Introduction](#)

[Annual Allowed Takes](#)

**View Data By**

- [Divisions](#)
- [Districts](#)
- [Projects](#)
- [Turtle Species](#)

**Total Cubic Yards**

- [Fiscal Year Table](#)
- [Fiscal Year Graph](#)

**Total Turtle Takes**

- [Takes Graphs](#)
- [Fiscal Year](#)
- [Calendar Year](#)

**Advanced Data Reports**

- [Takes](#)
- [Water Temp](#)

[References](#)

[Observer Forms](#)

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



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 ...](#)

---



**USACE Sea Turtle  
Data Warehouse**

US Army Corps  
of Engineers



---

[Home](#)

[Introduction](#)

[Annual Allowed Takes](#)

**View Data By**

- [Divisions](#)
- [Districts](#)
- [Projects](#)
- [Turtle Species](#)

**Total Cubic Yards**

- [Fiscal Year Table](#)
- [Fiscal Year Graph](#)

**Total Turtle Takes**

- [Takes Graphs](#)
- [Fiscal Year](#)
- [Calendar Year](#)

### Annual Allowed Takes

USACE Region	Biological Opinion	Loggerheads	Kemp's Ridley	Greens	Hawksbills	Sturgeon (Gulf & Shortnose)
North Atlantic Division (North of NC)	2003	Varies by channel and cubic yards dredged				
South Atlantic Division (NC thru FL)	25 Sep 1997	35	7	7	2	5 (Shortnose)
Jacksonville District (FL West Coast)	19 Nov 2003	5	3	3	1	1 (Gulf)
Mobile District (North Gulf of Mexico)	19 Nov 2003	5	3	3	1	2 (Gulf)
New Orleans District (N. Gulf of Mexico)	19 Nov 2003	15	7	3	1	1 (Gulf)
Galveston District (West Gulf of Mexico)	19 Nov 2003	15	7	5	1	N/A
Combined Gulf of Mexico	19 Nov 2003	40	20	14	4	4 (Gulf)

---

## Dredging Operations Technical Support Program

U.S. Army Corps of Engineers | Engineer Research & Development Center | Environmental Laboratory



### Models

- What's New
- Research
- Databases
- Beneficial Uses of Dredged Material
- Publications
- Guidance Documents
- Models
- Center for Contaminated Sediments
- Expertise/Contacts /Research Teams
- Training
- Dredging Resources
- Education Center
- Related Sites
- ACCORD

- **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.



## Environmental Laboratory



Home
Research
Expertise
Products
Programs
Training
Search

**Databases**

**Publications**

- [Technical Reports](#)
- [Technical Notes](#)
- [Technical Notes Companion](#)
- [Journal Articles](#)
- [Bulletin](#)
- [Conference](#)
- [Other Reports](#)

**Fact Sheets**

- [Research](#)
- [Project](#)
- [BRDC](#)

**Models**

- [Aquatic Plant](#)
- [Dredged Material](#)
- [Health Risk Assessment](#)
- [Landfill](#)
- [Water Quality](#)
- [Other](#)

[Information Systems](#)

### Dredged Material Disposal Management Models

Model	Application Programs	Description	Download Self-extracting, Executable files	Download Document Files
ADDAMS: <a href="#">(readme_list)</a>	Setting Test Tool	Tool to Aid Conduct of Settling Test and Setup	<a href="#">SetForm.xls</a>	<a href="#">SetPro.pdf</a>
	Windows CDF Version 1.0	Integrated CDF Design Module (SETTLE and DYECON)	Not Yet Available	
 <a href="#">(Info)</a>  <a href="#">(Y2K Compliance)</a>	DOS SETTLE Version 3.0	Design of Confined Disposal Facilities (CDFs) for Suspended Solids Retention and Initial Storage Requirements	<a href="#">zsettle.exe</a>	<a href="#">ee-06-18.pdf</a>
	DOS DYECON Version 3.0	Determination of Hydraulic Retention Time and Efficiency of CDFs	<a href="#">zdyecon.exe</a>	<a href="#">ee-06-17.pdf</a>
POC: <a href="#">Paul Schroeder</a>	CDFATE Version 1.0	Computation of Mixing Zone Size or Dilution for Continuous Discharges	<a href="#">zcdfate.exe</a> (DOS Version) <a href="#">zcdfatew.exe</a> (Windows Version)	<a href="#">cdfate.pdf</a>
	PSDDF Version 2.1	Evaluation of Consolidation, Compression, and Desiccation of Dredged Fill for Determining Long-Term Storage Requirements	<a href="#">zpsddf.exe</a>	<a href="#">View on-line or download psddf.exe</a>
	Windows EFFLUENT Version 1.0 (1/07/00)	Combined effluent pathway evaluation module (EFQUAL and LAT-E).	<a href="#">zefluent.exe</a>	

## TrophicTrace: A Tool for Assessing Risks from Trophic Transfer of Sediment-Associated Contaminants

[U.S. Army Corps of Engineers](#) | [Engineer Research and Development Center](#) | [Environmental Laboratory](#) | [Search EL](#)

POC: [Todd S. Bridges, Ph.D.](#)

TrophicTrace is an Excel™ add-in that can be used to calculate, with inputs provided by users, potential human health and ecological risks due to bioaccumulation of sediment-associated contaminants. The model estimates expected concentrations in fish using a sediment-based food-web model for organic compounds, via trophic transfer factors from invertebrates to fish for certain metals, and via bioconcentration factors from water to fish for the remaining metals and hydrophilic organic compounds. Risks are calculated following USEPA and USACE risk assessment guidance (USEPA, 1989, 1997a, USEPA/USACE, 1998; Cura et al., 1999). *TrophicTrace* allows users to characterize the uncertainty associated with risk estimates using trapezoidal fuzzy numbers. Uncertainties can be propagated using fuzzy arithmetic principles that provide risk estimates in the form of trapezoidal fuzzy numbers. Example data sets are provided within *TrophicTrace* for demonstration purposes only. Use of *TrophicTrace* to evaluate the risks posed by a specific sediment or site must be based on appropriate, site-specific inputs.

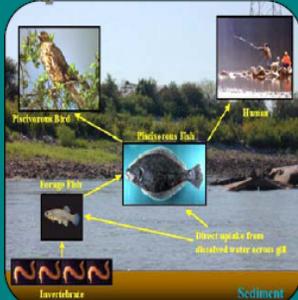


Three items are provided for download: The *TrophicTrace* executable, the *TrophicTrace* Users Manual, and a Management Guide that provides program-specific guidance to Corps dredged material managers.

Users are invited to provide feedback to the POC on any aspect of *TrophicTrace* and its functionality. This input will be considered during development of future updates.

- [Download \*TrophicTrace\* version 3.04](#)
- [TrophicTrace Users Manual](#)
- [Dredged Material Management Guide](#)

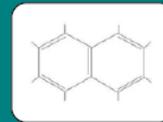
## TrophicTrace



[Help](#)   [Create Output](#)

- [Chemicals](#)
- [Environment](#)
- [Invertebrates](#)
- [Fish](#)
- [Human Exposure](#)
- [Mammals](#)
- [Avian](#)

### PCBs (Total)



- [Add New](#)
- [Edit](#)
- [Delete](#)
- [Home](#)
- [Detail](#)

### Child Angler



- [Add New](#)
- [Edit](#)
- [Delete](#)
- [Home](#)
- [Detail](#)

### Summer Flounder



- [Add New](#)
- [Edit](#)
- [Delete](#)
- [Home](#)
- [Detail](#)

PREPARED BY  
 KATHERINE VON STACKELBERG  
 ALLA BURMISTROVA  
 MENZIE-CURA & ASSOCIATES, INC.  
 ONE COURTHOUSE LANE, SUITE TWO  
 CHELMSFORD, MA 01824



## Center for Contaminated Sediments

[U.S. Army Corps of Engineers](#) | [Engineer Research and Development Center](#)  
[Environmental Laboratory](#) | [Search EL](#)

[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](#)

### [Capabilities](#)

### [Expertise](#)

### [Guidance Documents](#)

### [Technology Transfer](#)

### [Case Studies & Projects](#)

### [Related Sites](#)

### Local related links:

- [DOER](#)
- [DOTS](#)
- [Environmental Chemistry](#)
- [Hazardous Waste](#)

## Beneficial Uses of Dredged Material

[U.S. Army Corps of Engineers](#) | [Engineer Research and Development Center](#) | [U.S. Environmental Protection Agency](#)



### Introduction



### Engineered Uses



### Environmental Enhancement



### Agricultural/ Product Uses



Most dredged material can be a valuable resource and should be considered for beneficial uses. The purpose of this site is to demonstrate potential beneficial uses of dredged material by presenting existing case studies as examples. Category descriptions, procedural outlines, and reference resources are also provided.

This site is a collaborative effort between  
U.S. Environmental Protection Agency and U.S. Army Corps of Engineers

[Environmental Laboratory](#) | [Coastal & Hydraulics Laboratory](#) | [DOTS](#)  
[Warning](#) | [Work for Others](#) | [Technology Transfer](#) | [What's New?](#)

# Web 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

U.S. Army Corps of Engineers Education Center

## U.S. Army Corps of Engineers Education Center

Welcome to the USACE's Education Center. This site is for students, teachers, librarians and other educators to access our many educational resources.

- [Topics](#)
- [Corps Stories](#)
- [Navigation Lessons](#)
- [Navigation Games](#)
- [Related Links](#)
- [Kids links](#)

Click to see Fun Science Experiments



## Dredging Operations Technical Support Program

### Expertise / Contacts / Research Teams

| [U.S. Army Corps of Engineers](#) | [Engineer Research and Development Center](#) | [Environmental Laboratory](#) | [Warning](#) |

- [List of Corps of Engineers \(CE\) Dredged Material Testing Specialists \(USACE experts, nationwide\)](#)
- [Center for Contaminated Sediments Expertise \(USACE experts, nationwide\)](#)
- [DOER Research Team \(Currently ongoing research\)](#)

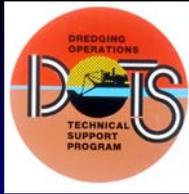
[Back to DOTS homepage](#) | [Back to Center for Contaminated Sediments](#)

*Comments / Whom to contact  
Updated July 18, 2000*

## Dredged Material Testing Specialists

| [U.S. Army Corps of Engineers](#) | [Engineer Research and Development Center](#) | [Environmental Laboratory](#) | [Warning](#) |

<u>Division/District</u>	<u>Contact Name</u>
CE Headquarters	Joe Wilson, Kirk Stark
Great Lakes and Ohio River Division	Jan Miller
• Great Lakes Region (Chicago, IL)	
• Ohio River Region (Cincinnati, OH)	
Buffalo, NY	Scott Pickard, Gary McDannell
Chicago, IL	Linda Sorn, Jennifer Miller, Ajit Vaidya
Cincinnati, OH	Bill Harder
Detroit, MI	Pam Horner, Paul Baxter
Huntington, OH	Tim Fudge, Vince Marchese
Louisville, KY	Vincent Marchese
Nashville, TN	vacant
Pittsburgh, PA	Nancy L. Taylor, Patience N. Nwanna
Mississippi Valley Division	Steve Jones
Memphis, TN	Andy Lowery
New Orleans, LA	Linda Mathies
Rock Island, IL	Clint Beckert
St. Louis, MO	Kevin Slattery
St. Paul, MN	James Sentz
Vicksburg, MS	Karen Dove-Jackson



<http://el.erdc.usace.army.mil/dots>

**Web Master – Ginny Dickerson, 601-634-4261**

**Points of Contact:**

- **E2-D2 – Doug Clarke, 601-634-3770**
- **ODD – Charlie Lutz, 601-634-2489**
- **BSAF – Charlie Lutz, 601-634-2489**
- **ERED – Todd Bridges, 601-634-2489**
- **UDMEED – Elly Best, 601-634-4246**
- **Beneficial Use Site, Sea Turtle Data Warehouse,  
Education Site – Dena Dickerson, 601-634-3772**