CE-Dredge

A Dredging Business Application

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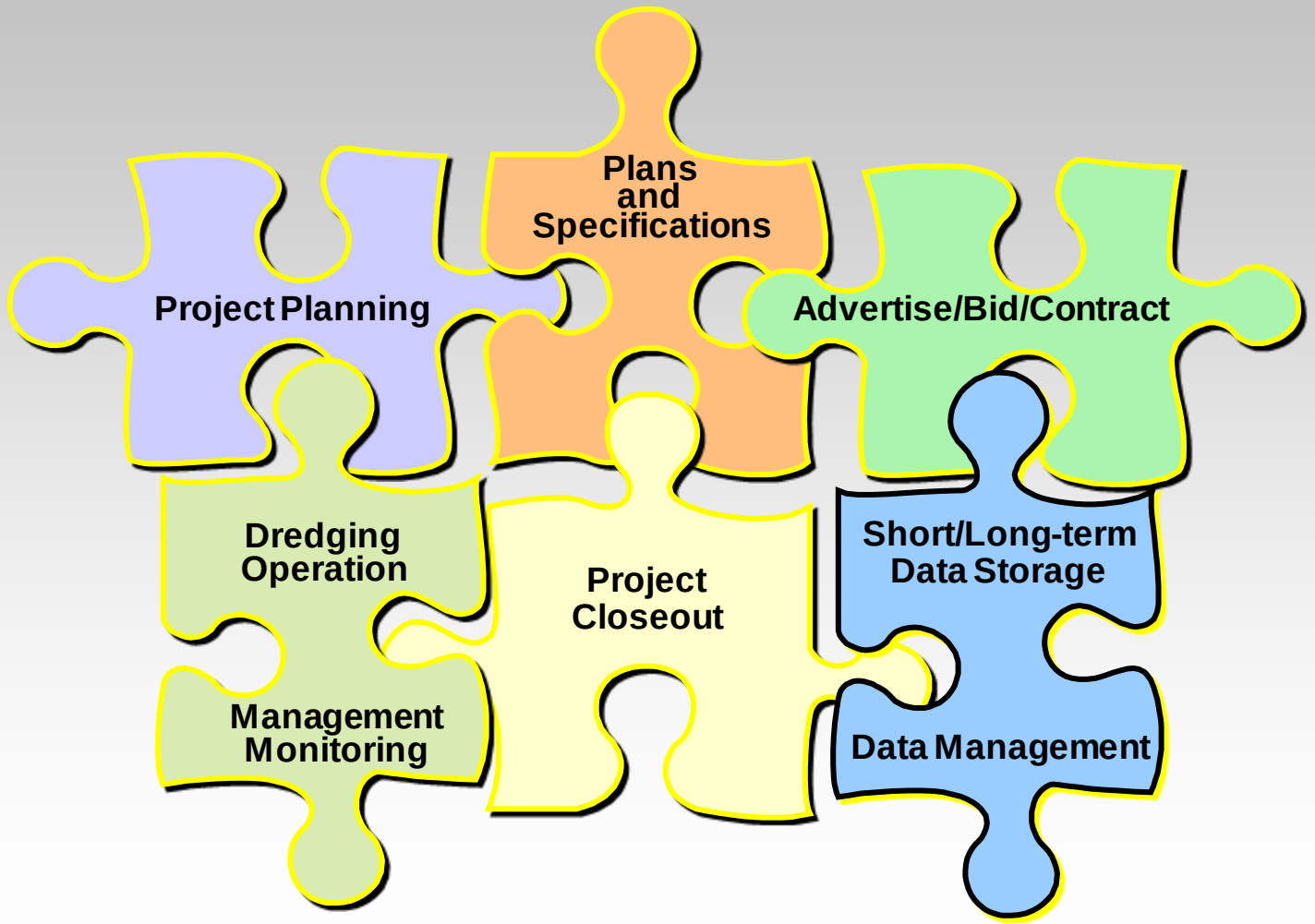
Linda Lillycrop
Rose Dopsovic
Spatial Data Branch
USACE Mobile District

CE-Dredge – Comprehensive Management



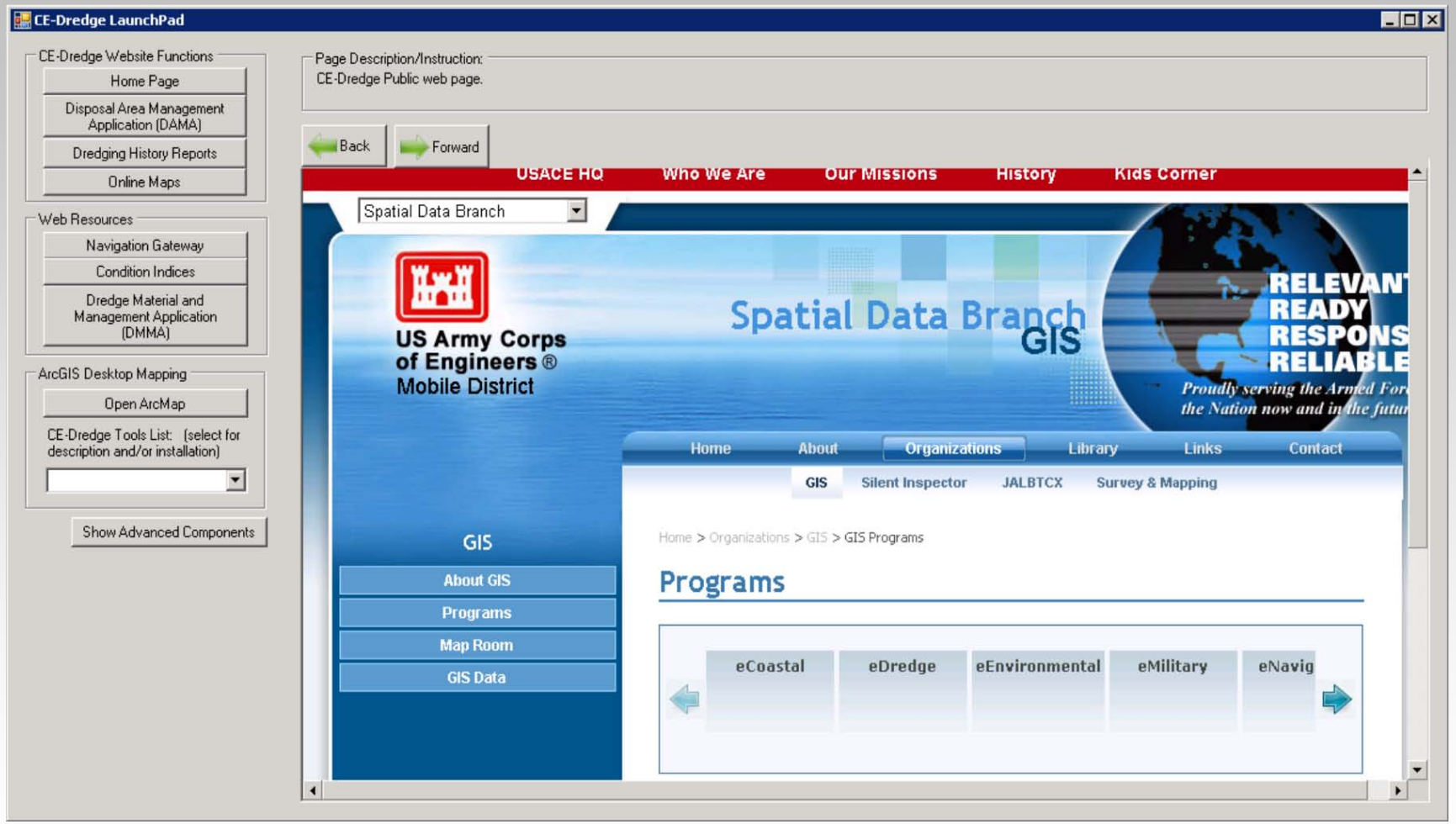
Goals

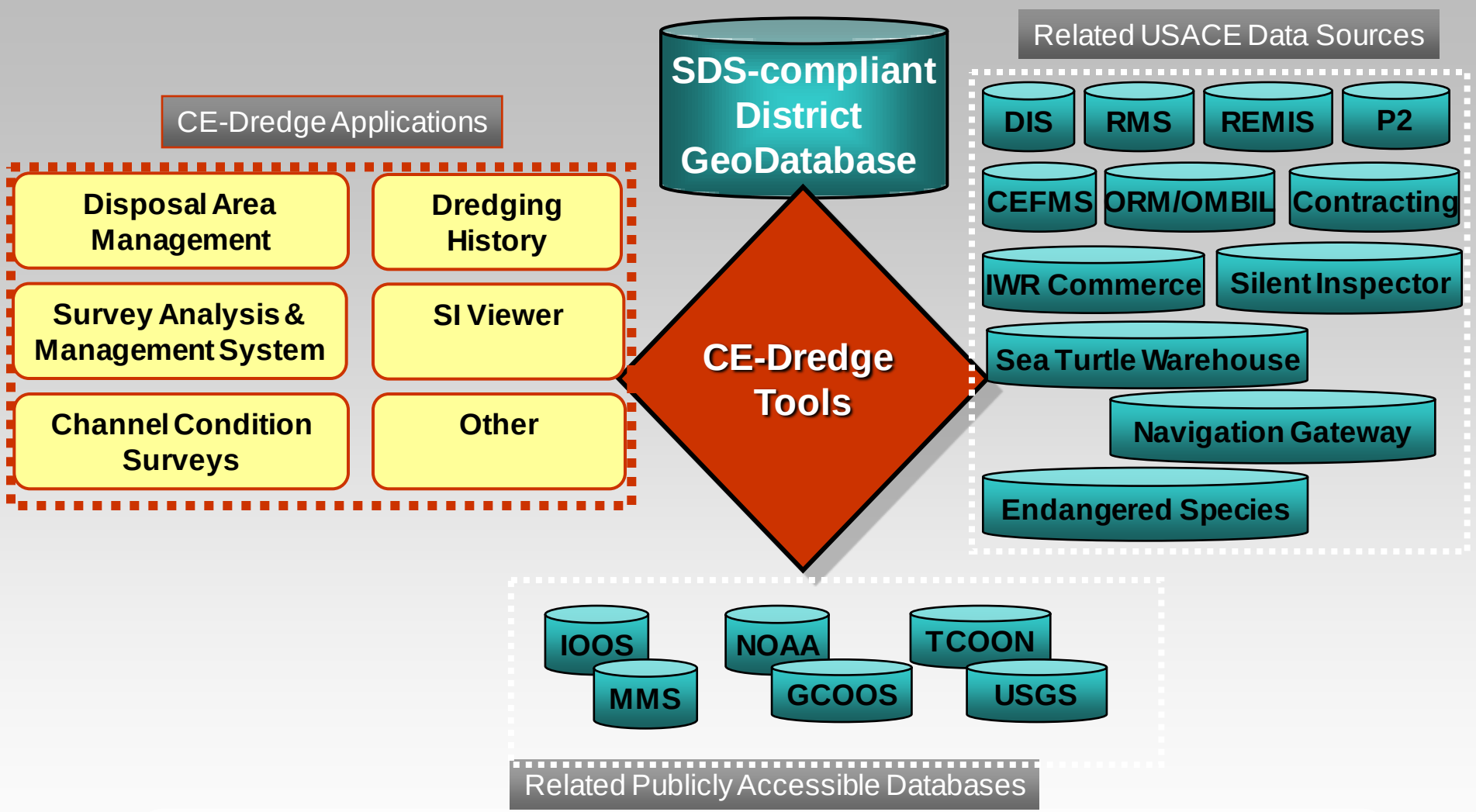
- The CE-Dredge program provides a single integrated system for the planning, monitoring, and management of USACE Dredging Operations.

- This dynamic interaction between existing databases provides access to national dredging information and data through a single integrated system.

- CE-Dredge is comprised of many different components.
  - Engineer, Scientist, or GIS professional
  - Managers

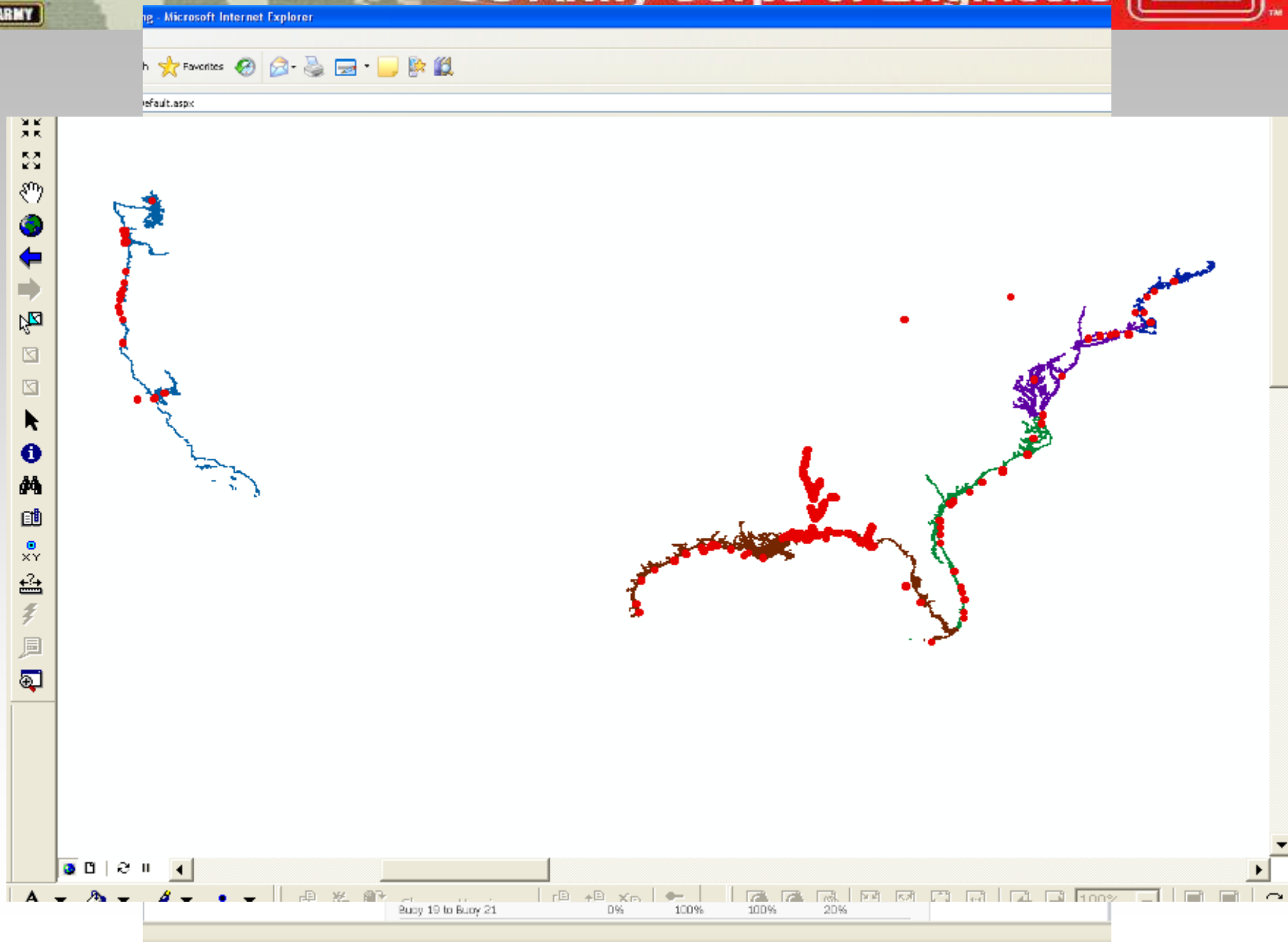
Component Overview





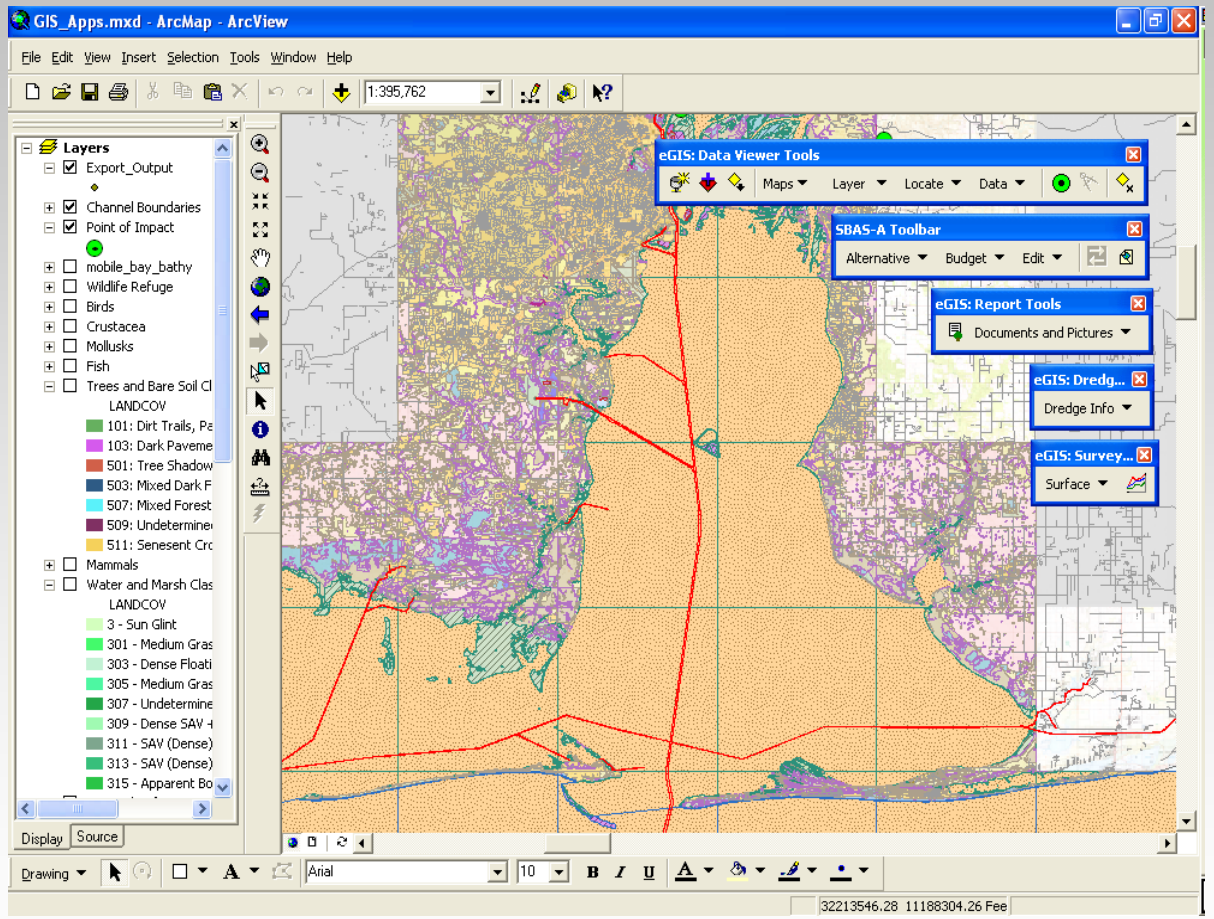
Upon ***CE-Dredge*** setup and installation, the CE-Dredge tools and applications manage all connections to pertinent databases. This coordination reduces and/or eliminates duplication of efforts to populate dredging information and data. When users choose their desired interface (web or ArcGIS desktop), all data is referenced from the single integrated system.

US Army Corps of Engineers



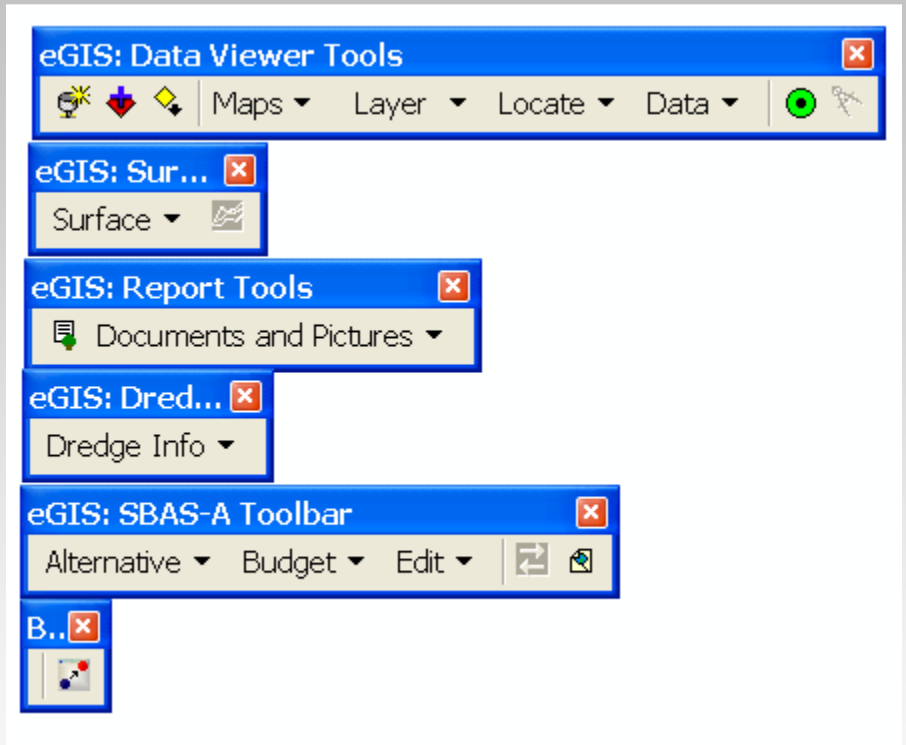
The Interface: Desktop

Custom applications were built to standardize the data processing and analysis procedures. Toolbox is assembled based on user needs.



CE-Dredge GIS-Specific Toolbox

- Data Viewer Tools
- Surface Tools*
- Report Tools
- Dredge Tools*
- SBAS-A Tools*
- Profile Tool*



- *Designed specifically for the eCoastal environment

Data Retrieval

Untitled - ArcMap - ArcView

File Edit View Insert Selection Tools Window Help

1:3,244,039

Layers
- GDT County Outlines
- County Boundaries

eGIS: Data Viewer Tools: Maps Layer Locate Data

eGIS: Dredg... Dredge Info

eGIS: Survey... Surface

eGIS: Report Tools: Documents and Pictures

Add Data

Select by Project | Select by Category | **Select by Keyword** | Edit Layers

Enter Search Keyword:

mobile

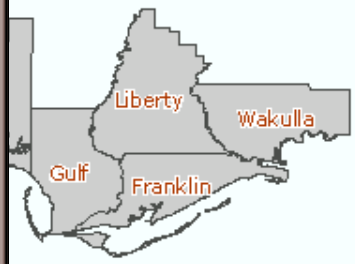
Search for Layers

Search Results:

Project	Category	Layer	Description
Baseline 2002	Buildings	Baseline 2002 ...	Mobile and Baldwin Co....
Baseline 2002	Transportation Air	Baseline 2002 ...	Mobile & Baldwin Count...
Baseline 2002	Transportation ...	Baseline 2002 ...	Mobile & Baldwin Count...
Baseline 2002	Buildings	Baseline 2002 ...	Mobile & Baldwin Count...

Add Selected Layer

Close

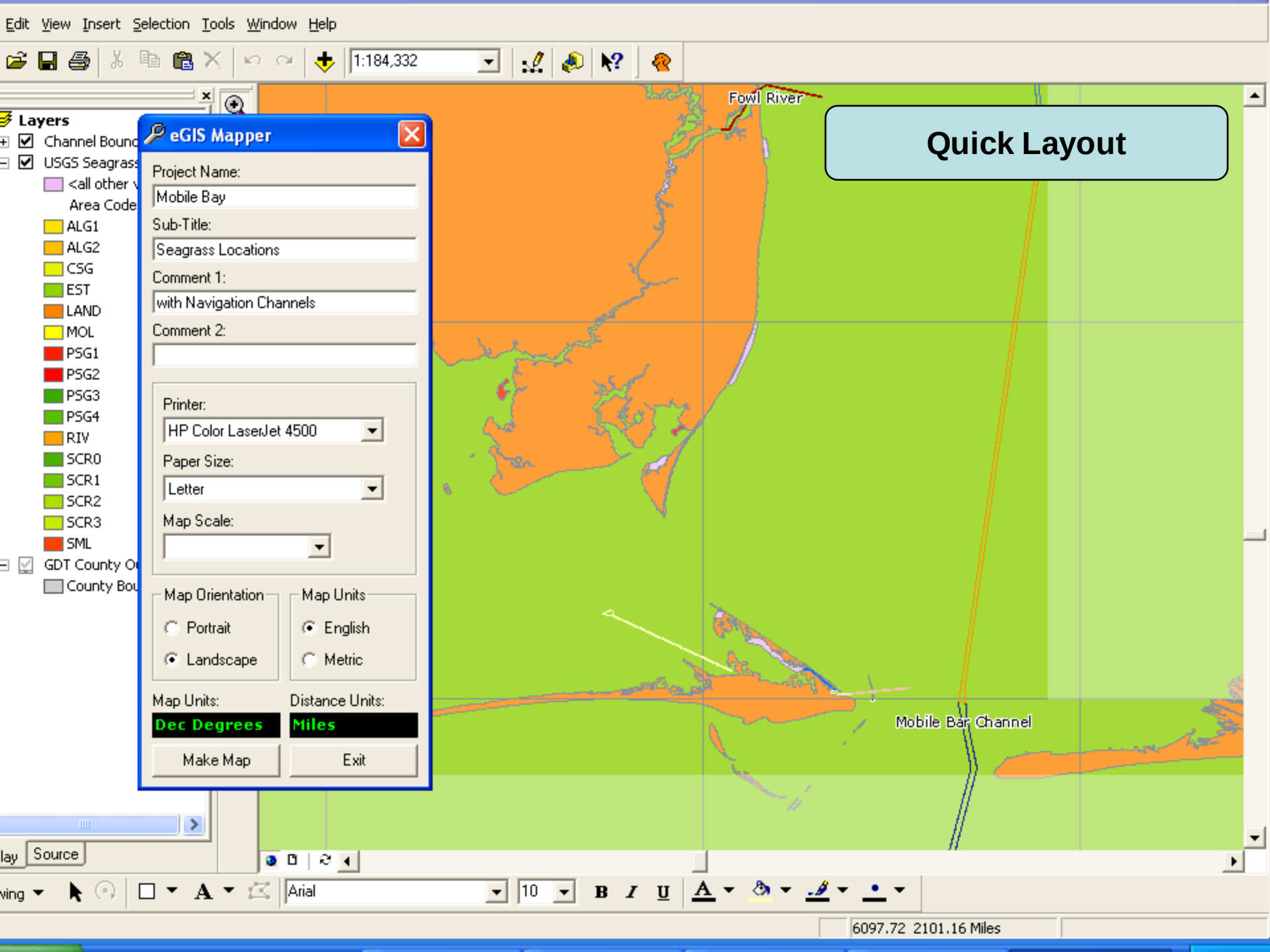


Display Source

Drawing Arial 10

87°34'2.83"W 30°56'27.68"N

start | Inbox - Micro... | 6 Microsoft... | D:\mydocum... | Adobe Acrob... | Untitled - Arc... | 10:03 AM


Quick Layout
Edit View Insert Selection Tools Window Help
1:184,332
Layers
Channel Bound
USGS Seagrass
<all other
Area Code
ALG1
ALG2
CSG
EST
LAND
MOL
PSG1
PSG2
PSG3
PSG4
RIV
SCR0
SCR1
SCR2
SCR3
SML
GDT County O
County Bou
Source
eGIS Mapper
Project Name:
Mobile Bay
Sub-Title:
Seagrass Locations
Comment 1:
with Navigation Channels
Comment 2:
Printer:
HP Color LaserJet 4500
Paper Size:
Letter
Map Scale:
Map Orientation
Portrait
Landscape
Map Units
English
Metric
Map Units:
Dec Degrees
Distance Units:
Miles
Make Map
Exit
Fowl River
Mobile Bay Channel
Arial
10
6097.72 2101.16 Miles

Edit View Insert Selection Tools Window Help

1:184,332

Layers

eGIS Mapper

Project Name:
Mobile Bay

Sub-Title:
Seagrass Locations

Comment 1:
with Navigation Channels

Comment 2:

Printer:
HP Color LaserJet 4500

Paper Size:
Letter

Map Scale:

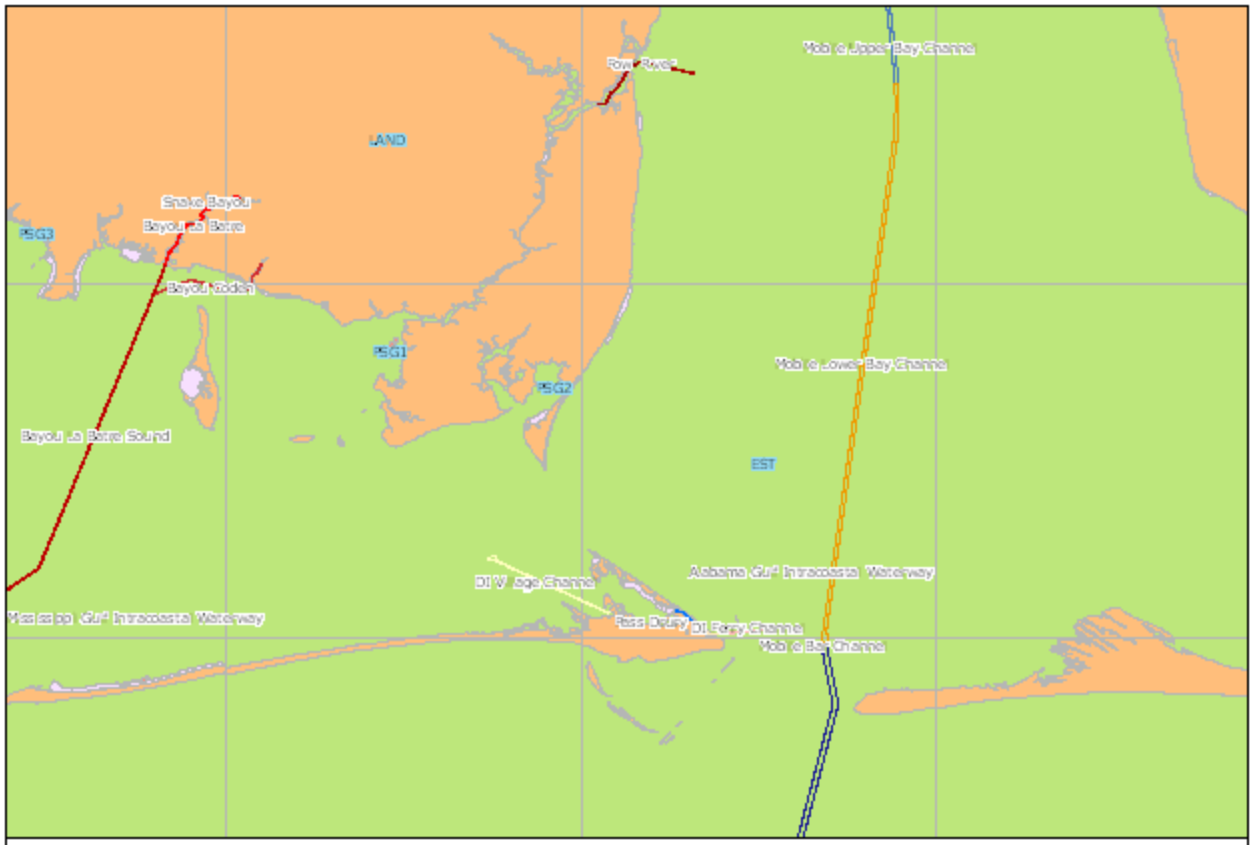
Map Orientation
- Portrait
- Landscape

Map Units
- English
- Metric

Map Units: **Dec Degrees**

Distance Units: **Miles**

Make Map | Exit



Source

Arial 10

6102.17 2104.82 Miles | 0.53 8.00 Inches

Edit View Insert Selection Tools Window Help

1:247,496

eGIS: Data Viewer Tools

Maps Layer Locate Data

Layers

- Channel Boundaries
- USGS Seagrass Locations
  - <all other values>
  - Area Code
  - ALG1
  - ALG2
  - CSG
  - EST
  - LAND
  - MOL
  - PSG1
  - PSG2
  - PSG3
  - PSG4
  - RIV
  - SCR0
  - SCR1
  - SCR2
  - SCR3
  - SML
- GDT County Outlines
  - County Boundaries

Source

LAND

PSG3

PSG1

PSG2

Excel To Points

Open Workbook

Table

DD Values

X Item

X_Decimal_Longitude

Y Item

Y_Decimal_Latitude

Select Item(s) To Include As Attribute Values

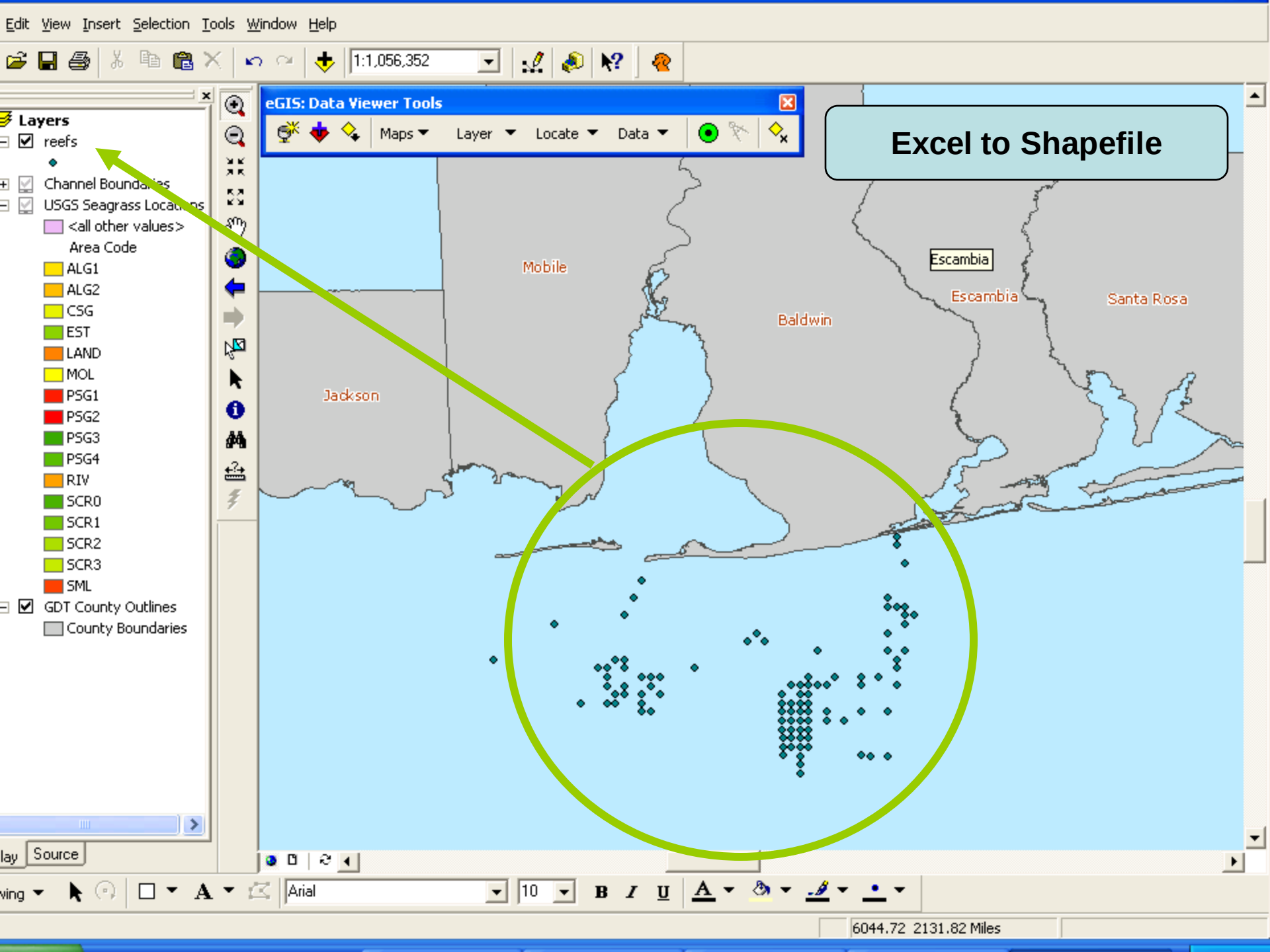
distance_nm_PP
distance_nm_SIL
Reef

Create Points

Arial 10

Excel Data As Point Layer

6090.85 2102.99 Miles


Excel to Shapefile
Edit View Insert Selection Tools Window Help
1:1,056,352
eGIS: Data Viewer Tools
Maps
Layer
Locate
Data
Layers
reefs
Channel Boundaries
USGS Seagrass Locations
<all other values>
Area Code
ALG1
ALG2
CSG
EST
LAND
MOL
PSG1
PSG2
PSG3
PSG4
RIV
SCR0
SCR1
SCR2
SCR3
SML
GDT County Outlines
County Boundaries
Source
Mobile
Escambia
Escambia
Santa Rosa
Baldwin
Jackson
Arial
10
6044.72 2131.82 Miles

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Menu

- Disposal Area Tracker
- Contract Manager
- Disposal Area Inspections
- Apply for Beneficial Usage
- Reports and Documents

Disposal Area Inspections

Insp Date: 2009 | Disp Area: --- | Type: --- | Status: --- | search

Insp Date	Disp Area	Type	Insp ID	Status	Print
1/13/2009	C05	ICND	INSP-2009-00001	COMPLETE	
1/23/2009	C08	ICND	INSP-2009-00002	COMPLETE	
2/5/2009	AB04	ICND	INSP-2009-00004	COMPLETE	
2/4/2009	C04	ICND	INSP-2009-00005	COMPLETE	
2/9/2009	C01	ICND	INSP-2009-00011	COMPLETE	
2/10/2009	C09	ICND	INSP-2009-00012	COMPLETE	
2/18/2009	C03	ICND	INSP-2009-00017	COMPLETE	
2/19/2009	C12	ICND	INSP-2009-00018	COMPLETE	
2/19/2009	C13	ICND	INSP-2009-00019	COMPLETE	
2/18/2009	AL05	ICND	INSP-2009-00020	COMPLETE	
2/10/2009	C10	ICND	INSP-2009-00021	COMPLETE	
2/12/2009	C06	ICND	INSP-2009-00022	COMPLETE	
2/12/2009	C07	ICND	INSP-2009-00023	COMPLETE	
2/12/2009	PC01	ICND	INSP-2009-00024	EDIT	
2/27/2009	G03	ICND	INSP-2009-00025	EDIT	
	C17A	ICND	INSP-2009-00028	NEW	
	C17B	ICND	INSP-2009-00029	NEW	
	C18	ICND	INSP-2009-00030	NEW	
	C20A	ICND	INSP-2009-00032	EDIT	
	C20B	ICND	INSP-2009-00033	EDIT	
	C21	ICND	INSP-2009-00034	EDIT	
2/24/2009	C15	ICND	INSP-2009-00035	COMPLETE	
2/24/2009	C16	ICND	INSP-2009-00036	COMPLETE	
2/25/2009	C19	ICND	INSP-2009-00037	COMPLETE	

waterline.

Shore Access Lane : COR-00116 *(C05)* Photo: view

Description: Southern SAL to primary cell; good condition; small trees; 15-ft vertical bluff at waterline.

Part III: Repairs and Comments

C05-P1:

Repairs Needed Prior to Next Usage? yes ___X___ no _____

If yes, describe repairs:

Clear SAL, dikes, and replace drainage structures.

Comments:

Option 1: Install 2-36' CMP's in crossdike, and replace existing final discharge CMP's with wierbox. Note - R&D dike crown clearing and SAL clearing was performed in Jan 2009.

C05-S1:

Repairs Needed Prior to Next Usage? yes ___X___ no _____

If yes, describe repairs:

Clear SAL, dikes, and replace drainage structures.

Comments:

Option 2: Swap primary and secondary cells; remove existing CMP's, install CMP's in crossdike, install weirbox in low SW corner of DA. Note - R&D dike crown clearing and SAL clearing was performed in Jan 2009.

SAMS File Import Wizard - Metadata Form

Channel_Performance.mxd - ArcMap - ArcView

File Edit View Bookmarks Insert Selection Tools Window Help

1:32,373,238 | Labeling | Fast | 0 | 3D Analyst | Layer: MossLanding

Editor | Spatial Analyst

Untitled - ArcMap - ArcInfo

File Edit View Bookmarks Insert Selection Tools Window Help

1:22,699 | Network: | Flow | Analysis | Trace Task: Find Common Ancestors

Editor | Task: Create New Feature | Target: | 3D Analyst | Layer: | ArcPad Data Manager

Spatial Analyst | Layer:

Maps | Layer | Data | Misc | Projection: | XTools Pro

Labeling | Fast | Additional Utilities | 0

Layers

- MB050504C
  - z
  - -61.980000 - -50.880000
  - -50.879999 - -48.280000
  - -48.279999 - -45.280000
  - -45.279999 - -41.680000
  - -41.679999 - -37.810000
  - -37.809999 - -34.010000
  - -34.009999 - -30.580000
  - -30.579999 - -27.650000
  - -27.649999 - -24.430000
- BAM-0001
  - WATER_DEP
  - -56.32 - -46.37 FT
  - -46.37 - -39.09 FT
  - -39.09 - -34.04 FT
  - -34.04 - -29.59 FT
  - -29.59 - -24.8 FT
  - -24.8 - -20.74 FT
  - -20.74 - -17.21 FT
  - -17.21 - -10.12 FT
- MB050504C_CopyFeatures_CopyF
  - z
  - -61.980000 - -50.880000
  - -50.879999 - -48.280000
  - -48.279999 - -45.280000
  - -45.279999 - -41.680000
  - -41.679999 - -37.810000
  - -37.809999 - -34.010000
  - -34.009999 - -30.580000
  - -30.579999 - -27.650000
  - -27.649999 - -24.430000
- gcwgs84_vector.GCWGS84.noaa_shoreline
- Navigation Channel Features
  - Feature
  - CENTERLINE
  - QRL
  - QRR
  - STATION
  - TOELINE
  - TOSLINE
- dddfeat1

Display | Source | Selection | Catalog

ArcToolbox

- 3D Analyst Tools
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- Tracking Analyst Tools

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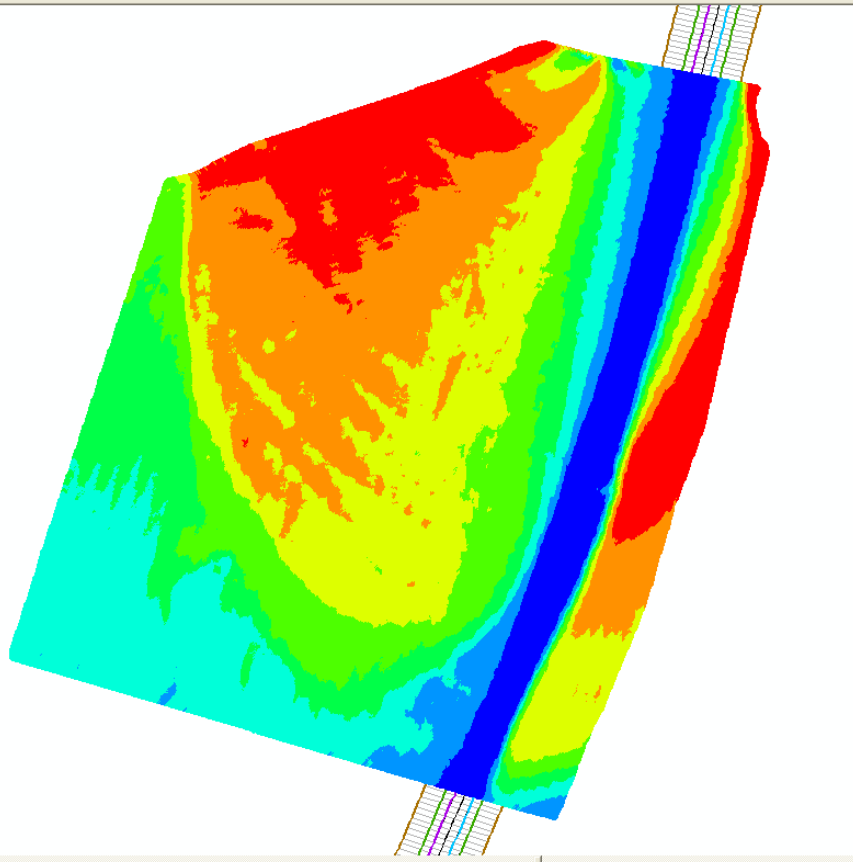


Display | Source

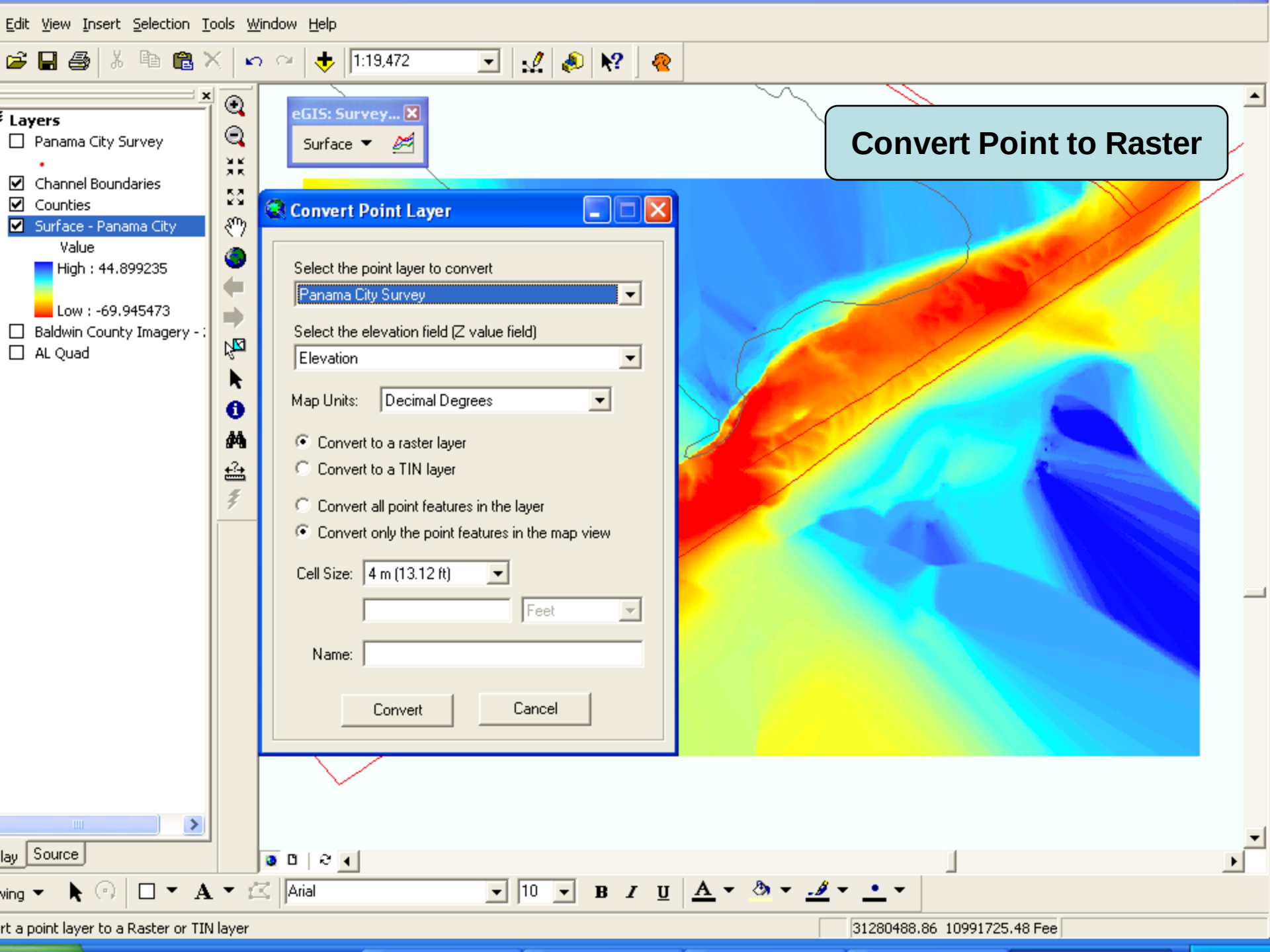
Drawing | Arial | 10 | 100%

-88.083 30.18 Decimal Degrees

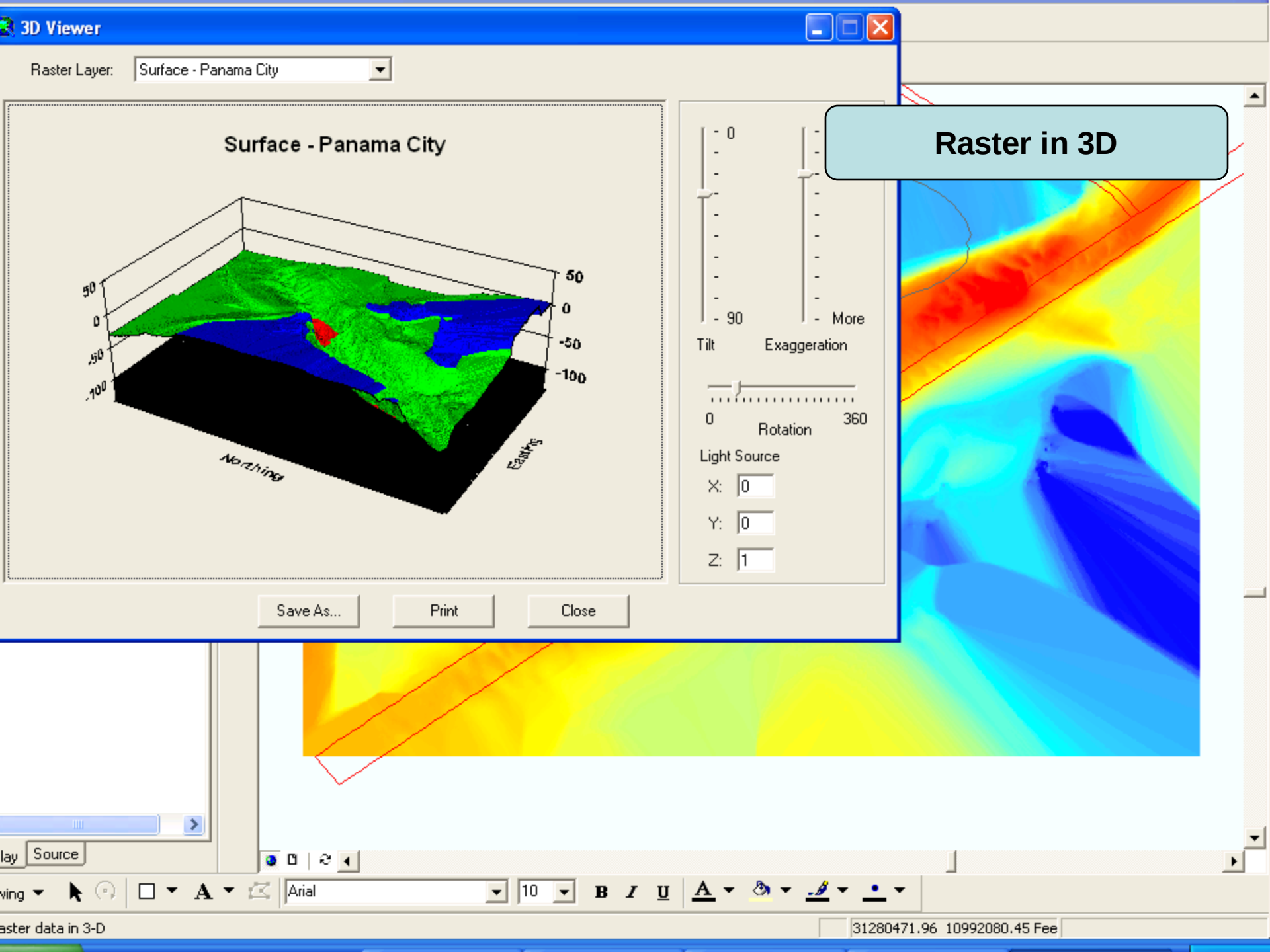
Survey Analysis Tools

- Users have the ability to generate user-defined grid surfaces and TINs.
- View the data in 3D
- Cut cross-section profiles through the data
- Calculate the depth differences

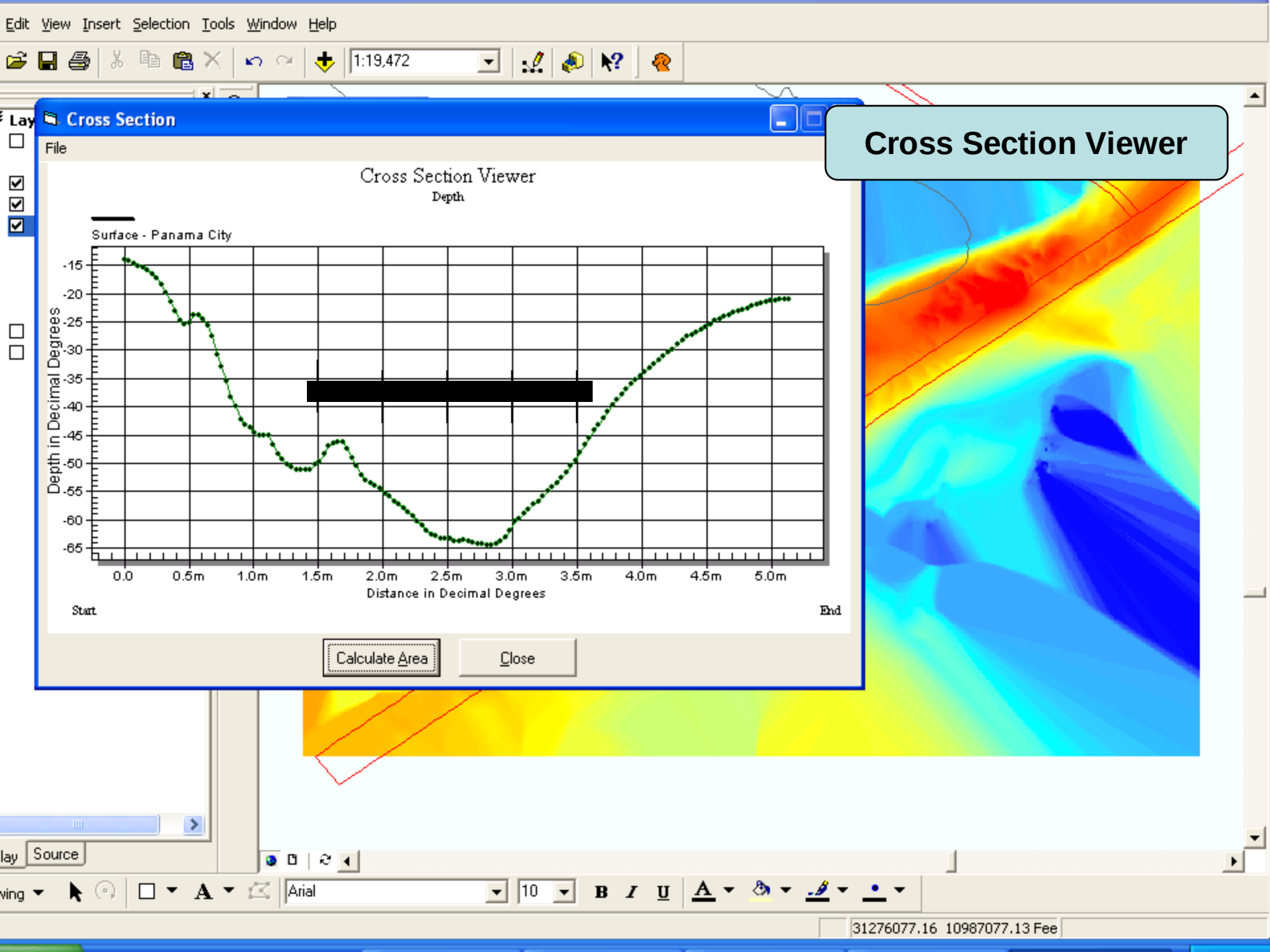
Convert Point to Raster



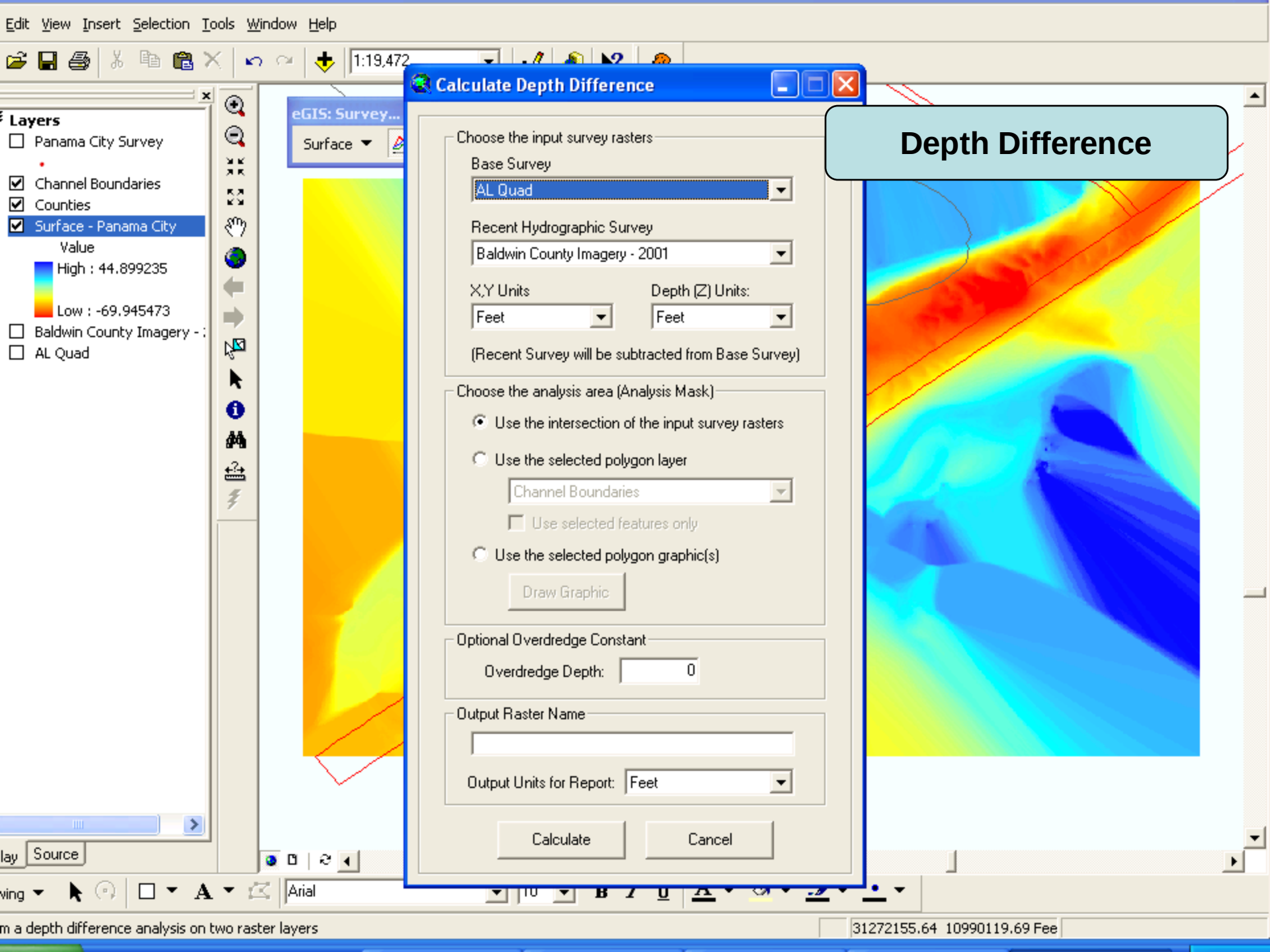
Raster in 3D


3D Viewer
Raster Layer:
Surface - Panama City
Surface - Panama City
50
0
-50
-100
Northing
Easting
0
90
Tilt
More
Exaggeration
0
360
Rotation
Light Source
X: 0
Y: 0
Z: 1
Save As...
Print
Close
Source
Arial
10
aster data in 3-D
31280471.96 10992080.45 Fee

Cross Section Viewer

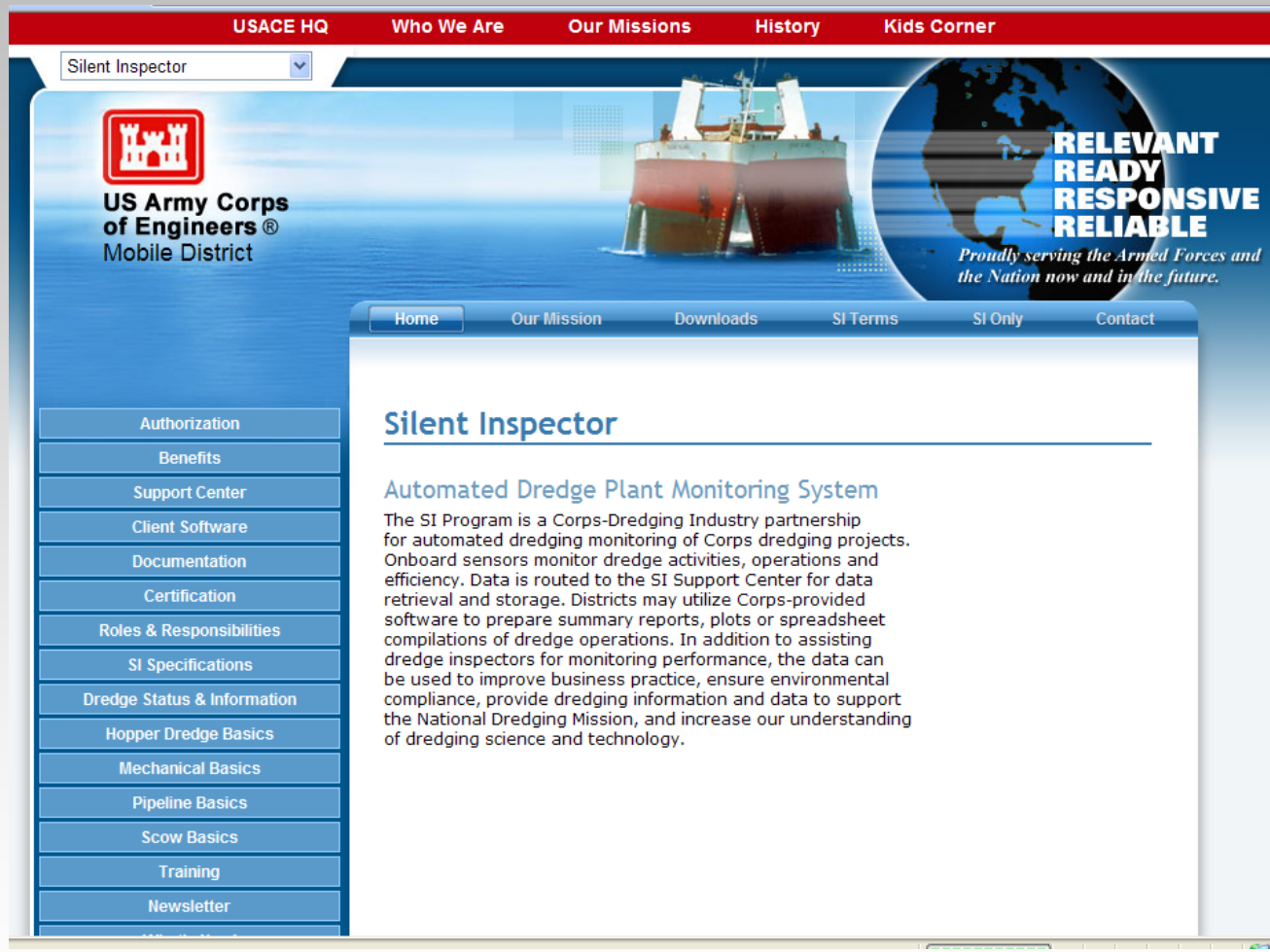


Depth Difference

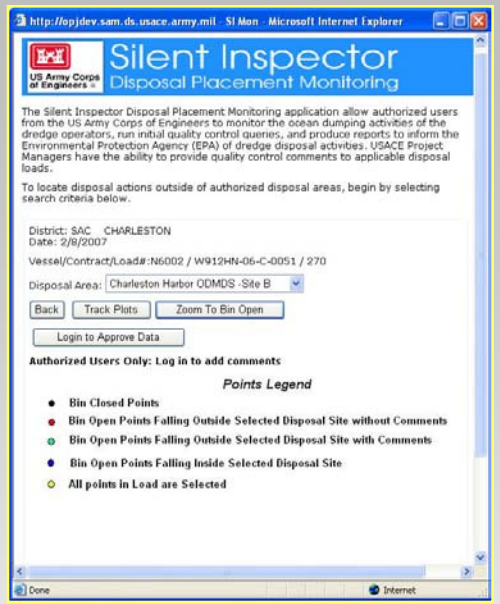


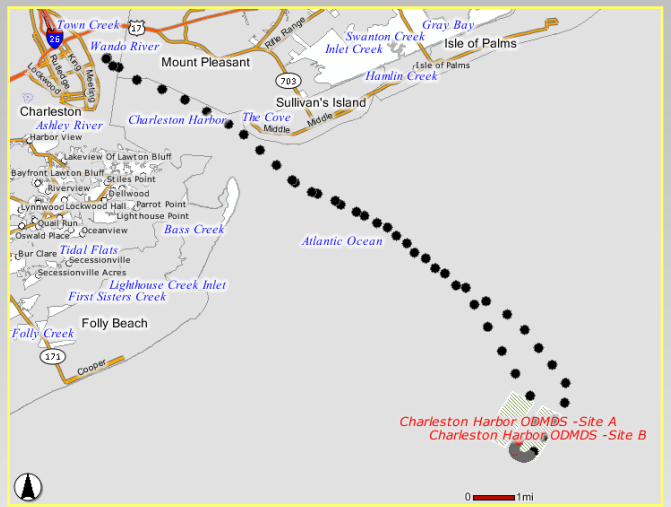
Silent Inspector

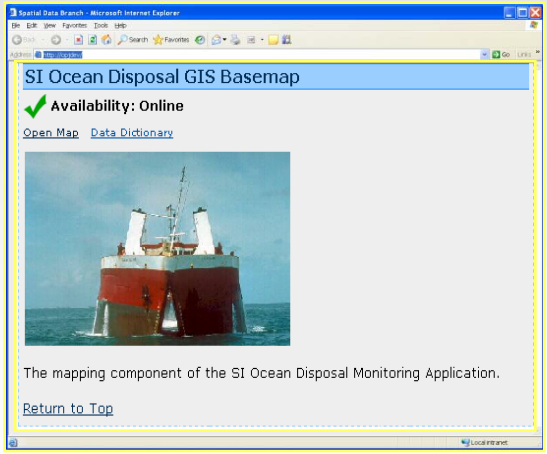
- The SI Program is a Corps-Dredging Industry partnership for automated dredging monitoring of Corps dredging projects. Onboard sensors monitor dredge activities, operations and efficiency.

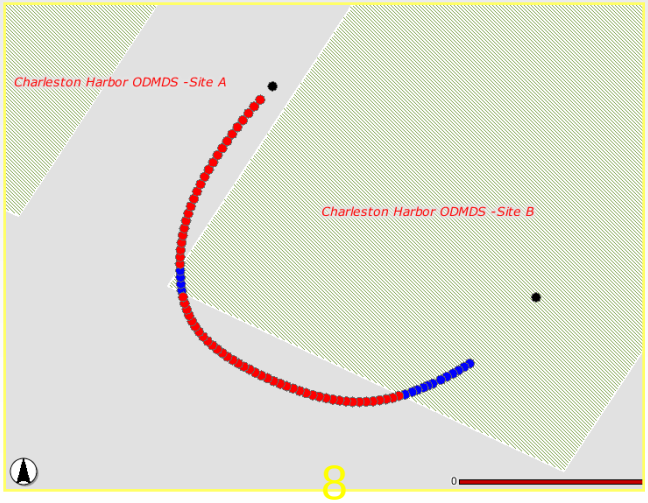


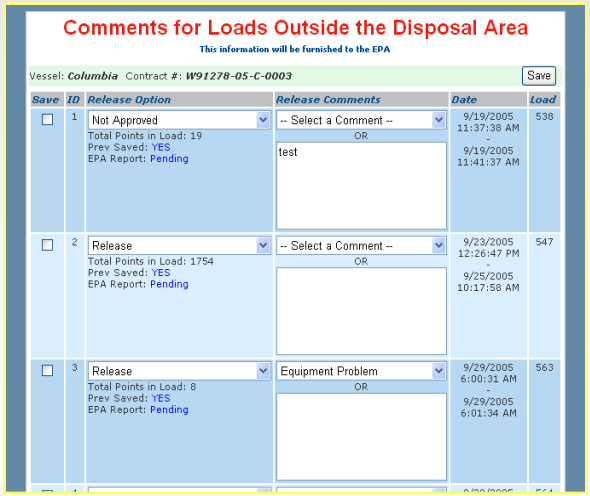
Ocean Disposal Monitoring



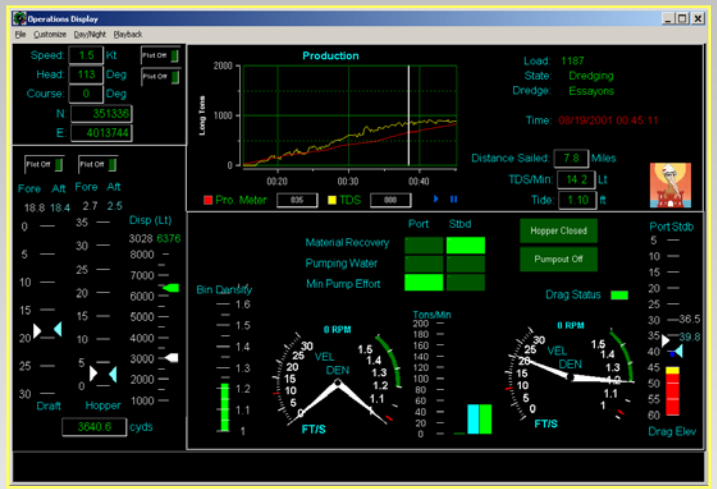


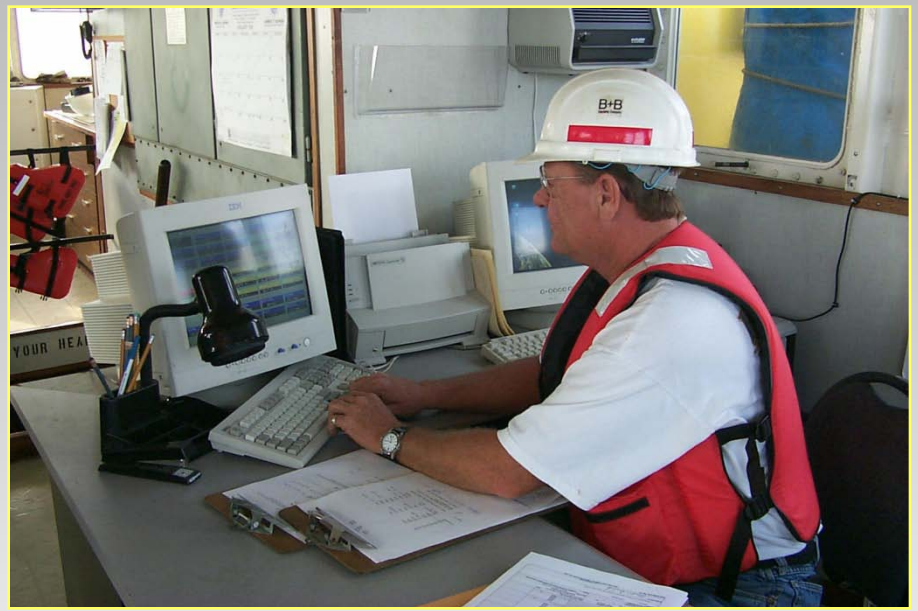


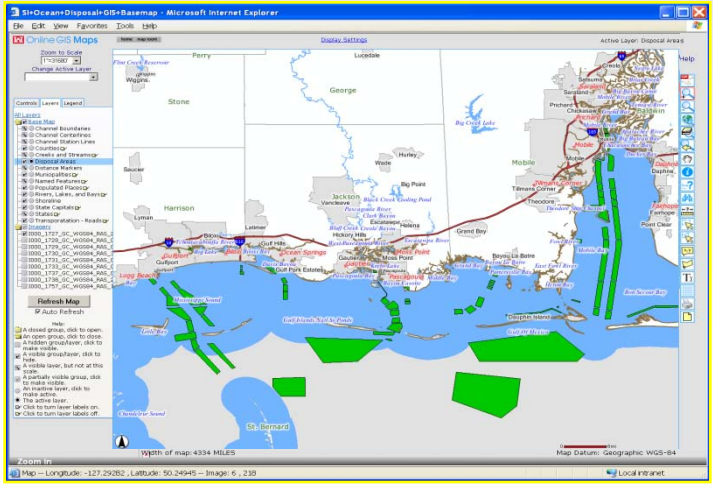




On-Board Dredge Viewer







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