

# **SATELLITE AND GIS DATABASE OF LOUISIANA: A CONTINUATION OF TRAINING**

Anthony J. Lewis, DeWitt H. Braud, R. Hampton Peele  
Louisiana State University

**Technical Report Series  
00-007**

---

## **DISCLAIMER**

This report was prepared under a contract between the Department of Geography and Anthropology, Louisiana State University and the Louisiana Applied and Educational Oil Spill Research and Development Program (OSRADP). The contents of this document do not necessarily reflect the views and policies of the Louisiana Oil Spill Coordinator's Office—Office of the Governor or those of the Louisiana Applied and Educational Oil Spill Research and Development Program, nor does mention of trade names or commercial products constitute endorsement of or recommendation for use by the state of Louisiana.

## **REPORT AVAILABILITY**

Additional copies of this report may be obtained by writing to:

The Louisiana Applied and Educational Oil Spill Research and Development Program  
2000 Deliverables  
258 A/B Military Science Building  
Baton Rouge, Louisiana 70803

Telephone Number: (225) 578-3477 ● FAX Number (225) 578-0403

*or from*

The Louisiana Oil Spill Coordinator/Office of the Governor  
Natural Resources Building 625 N. 4<sup>th</sup> St., Rm. 800  
Baton Rouge, Louisiana 70802

Telephone Number: (225) 219-5800 ● FAX Number (225) 219-5802

## **CITATION**

Lewis, A.J., D.H. Braud and H.R. Peele. 2000. Satellite and GIS Database of Louisiana: A continuation of training. Department of Geography and Anthropology, Louisiana State University. Louisiana Applied and Educational Oil Spill Research and Development Program, OSRADP Technical Report Series 00-07.

---

## **TABLE OF CONTENTS**

[1.0 Introduction](#)

[2.0 Methods](#)

[3.0 Relevance](#)

[4.0 Work Plan and Schedule](#)

[5.0 Deliverables](#)

[6.0 Summary of Introductory and Training Sessions](#)

[6.1 Locations and Dates](#)

[6.2 Workshop Registration and Attendance](#)

[6.3 Course Evaluations](#)

[7.0 Problems Encountered](#)

[8.0 Results](#)

## **LIST OF FIGURES**

[Figure 1.1](#) Brochures mailed by group

[Figure 1.2](#) Training session attendance by group

[Figure 4.1](#) Event-flow diagram

[Figure 6.1](#) Location and dates of workshops

[Figure 6.2](#) Workshop attendance

[Figure 6.3](#) Comment questions

## **LIST OF TABLES**

[Table 2.1](#) Louisiana Oil Spill CD training topics to be covered

[Table 4.1](#) Louisiana Oil Spill CD training topics to be covered

[Table 6.1](#) Evaluation summary: Course instruction for training sessions

[Table 6.2](#) Evaluation summary: Course content for training sessions

[Table 6.3](#) Summary of participants' comments

## **ACKNOWLEDGEMENTS**

The authors would like to thank the staff at the LSU Computer Training Facility in the Division of Continuing Education for their technical support during the workshops. We also thank the following entities for allowing us to use their computer facilities at no cost or little cost to the project:

Texaco Training Center  
New Orleans, LA

McNeese State University  
Lake Charles, LA

University of Louisiana  
Monroe, LA

CADGIS Lab and Department of Geography and Anthropology  
Louisiana State University  
Baton Rouge, LA

We wish to thank Dr. Don Davis of OSRADP for his continuing support and vision about the importance of education. Diana Reynolds, also with OSRADP, always responded graciously when asked for help. Kelly Bessonnet helped put the brochure together and made arrangements for the workshops. Marie Chifici assisted by copying and collating the workshop materials. Wendy Thompson always helped when needed.

---

## Satellite and GIS Database of Louisiana: A Continuation of Training

---

### Abstract

The Louisiana Oil Spill Coordinator's Office (LOSCO), with the support of numerous co-sponsors, has released two CD-ROM sets that include valuable visual and graphic data pertaining to the state of Louisiana. The latest CD package, entitled *Louisiana GIS CD*, is the focus of this project. This two CD-ROM set contains a digital set of 30-meter resolution, Landsat TM satellite imagery. The CD-ROM set also provides: (1) spatial data layers (place names, roads, parish boundaries, etc.) that can be displayed in conjunction with the satellite imagery, and (2) ArcView and Geomedia GIS software. A satellite tour of Louisiana with images and text is also included, as are tutorials, metadata, and documentations.

This project was a continuation of a training effort initiated in 1998 that explained how to use the *Louisiana GIS CD*. This year's training effort targeted the same user groups as did previous years' efforts (oil and gas personnel; federal, state and local government agencies; community service organizations; and educators). The training activities were intended for users of the Louisiana GIS CD who were not familiar with satellite digital data or the techniques used to access, display, and analyze the datasets. To accomplish our goals, a series of 12 free computer based training workshops were conducted at five different locations, in four cities throughout Louisiana (Baton Rouge, New Orleans, Lake Charles, and Monroe). The hands-on computer based training focused on applying and using the spatial data on the *Louisiana GIS CD*.

Hardcopy educational materials were developed and distributed to all workshop participants in order to:

1. assist learning during the workshop, and
2. provide supportive/refresher training material following the workshop.

A total of 134 participants attended the 12 free training sessions. Course evaluations were conducted following the training sessions, and all of the evaluations were high. Instructor ratings ranged from 4.56 to 4.89 on a scale of 5. Course content ratings ranged from 4.57 to 4.67. The overall rating for course content was 4.67, and the overall rating for instructors was 4.80.

---

## 1.0 Introduction

In 1999, the Louisiana Oil Spill Coordinator's Office (LOSCO) and co-sponsors released a second CD-ROM set of statewide geo-spatial datasets. This set was used as the basis for the training provided in this project. This two CD-ROM set, entitled the *Louisiana GIS CD*, was produced in cooperation with 12 state and federal agencies. The *Louisiana GIS CD* includes 41 geo-spatial layers of information ranging from Landsat TM data, to geology, to threatened and endangered species, to the Geographic Names Information System. A listing of the data layers by type is as follows:

RASTER: UTM Zone 15 Coordinates (meters), NAD-83 Datum, Geotiff Packbit Compression

- Landsat Thematic Mapper Satellite Image (North and South)
- National Wetlands Inventory 1988 Habitat Data

POLYGONS: Geographic Coordinates (Decimal Degrees La/Lon), NAD-83 Datum, ArcView Shapefiles

- 1:100,000 Quad Index Grid (NAD-83)
- 1:24,000 Quad Index Grid (NAD-83)
- Aquifer Recharge Areas
- Coastal Land/Water Interface
- Coastal Wetlands Conservation Plan Boundary
- Drainage Basins and Sub-segments
- FEMA Flood Zones (Tiled by Parish)
- General Soil Associations
- Geology
- Louisiana State Boundary
- Major Rivers and Lakes
- Marsh Vegetation Salinity
- Official Coastal Zone Boundary
- Parish Political Boundaries
- Quarter Quad Index Grid (NAD-83)
- USGS 1:24,000 Quad Map Index
- USGS DRG Parish Political Boundaries
- Wildlife Management Areas
- Wildlife Refuges

LINES: Geographic Coordinates (Decimal Degrees La/Lon), NAD-83 Datum, ArcView Shapefiles

- Astronomical High Tide Line
- Local Roads (Tiled by Parish)
- Navigated Waterways
- Offshore Bathymetry

- Power Lines
- Primary Roads (Interstates, U.S. and State Highways)
- Railroads
- Stream Drainage Hydrography

POINTS: Geographic Coordinates (Decimal Degrees La/Lon), NAD-83 Datum, ArcView Shapefiles

- Abandoned Barge & Vessel Inventory
- Abandoned Non-Hazardous Oil Field Waste Pit & Facility Inventory
- Baseline Sampling & Analysis Field Data (1996-97, 1997-98, 1998-99)
- Early Warning Organic Compound Detection System
- Geographic Names Information System: Civic Facilities, Community Features, Physical Landforms, Vegetation Features, Water Features
- Pipeline Crossings
- Oil and Gas Wells (North and South)
- Populated Places (Cities, Towns, and Villages)
- Seabird Colonies

DATABASE: D-Base files

- Pipeline Companies
- Threatened & Endangered Species

It is important to note that the *Louisiana GIS CD-ROM* set was a cooperative effort including both state and federal groups. The sponsors were:

1. Louisiana Department of Environmental Quality
2. Louisiana Department of Natural Resources
3. Louisiana Department of Transportation and Development
4. Louisiana Department of Wildlife and Fisheries
5. Louisiana Oil Spill Coordinator's Office
6. Louisiana Oil Spill Research and Development Program
7. Louisiana State University, Department of Geography and Anthropology
8. Louisiana State University, Louisiana Geography Education Alliance
9. USGS National Wetlands Research Center
10. Environmental Systems Research Institute
11. Intergraph Corporation

The data on the CD-ROMs are accessible using the GIS software provided by ESRI (Environmental Systems Research Institute) and Intergraph Corporation. Either of these software packages can display spatial data, zoom in and out, perform queries, select features, and take measurements. The spatial data on the new CD-ROM set can also be imported to more advanced versions of the software to allow for more sophisticated GIS operations.

Since the target distribution groups (oil and gas industry personnel; federal, state and local government agencies; community service organizations; and educators) for these CD-ROMs were not likely to be familiar with the satellite imagery, the spatially referenced digital datasets, or the GIS software, we conducted a series of 12 free computer based training workshops in four different Louisiana cities (Baton Rouge, New Orleans, Lake Charles, and Monroe). The wide geographic distribution of the training sites provided potential participants with easy access to the training. Oil and gas industry and supporting business personnel were the primary groups targeted for these training workshops, as evidenced by the percentage of the those groups on our mailing list for brochures and information (see Figure 1.1). The next largest group receiving the brochures was government agencies (22%), followed by education groups (7%). Evaluations were conducted at every session; summations are provided later in the report.

A comparison of Figure 1.1 with Figure 1.2 shows a shift in percent attended by group compared to the groups targeted by mail. As with the previous year, the major targeted groups (oil and gas and supporting businesses) sent lower percentages to the training sessions than received brochures. These groups accounted for less than 50% of the attendees. On the other hand, 22% of the brochures went to government agencies and personnel; however, 29% of the attendees were from this group. The major discrepancy between the percent targeted and the percent attended was the education group, which had an attendance percentage of over three times the percentage that received brochures. More specifics on the locations and dates are provided below (see "Summary of the Introductory and Training Sessions").

An important aspect of this project was the distribution of a training/instructional book to help aid learning during the sessions and to provide a review for the participants upon return to their workplaces. The instructional books had been prepared for the previous workshops and were revised for this project. The training booklet contained sections on the following subjects:

1. remote sensing
2. GIS Tools
3. GIS lessons (three sections)

In summary, the training sessions and materials helped insure that the satellite and other GIS-based datasets on the *Louisiana GIS CD* will be utilized completely and effectively.

## **2.0 Methods**

Twelve six-hour training sessions were held between September 1999 and June 2000. The goal of the training was to introduce the data layers on the *Louisiana GIS CD* and the application of these datasets to the targeted groups. The sessions emphasized hands-on activities and use of supportive educational materials both during and after the sessions.

The sessions began with lectures, followed by computer based demonstrations and guided hands-on computer based training periods.

The targeted audiences for the training sessions included:

1. managers and technical personnel working in the oil and gas industry,
2. personnel in federal, state and local government (for example, the Office of Emergency Preparedness and extension agency personnel), and
3. K-12 educators in Louisiana.

To facilitate the identification of potential participants and the sites for these workshops, the project personnel reviewed the following:

1. OSRADP's mailing list,
2. mailing lists developed during the previous year's training project with OSRADP,
3. oil and gas industry connections through LOSCO, and
4. a mailing list of teacher consultants made available through LaGEA.

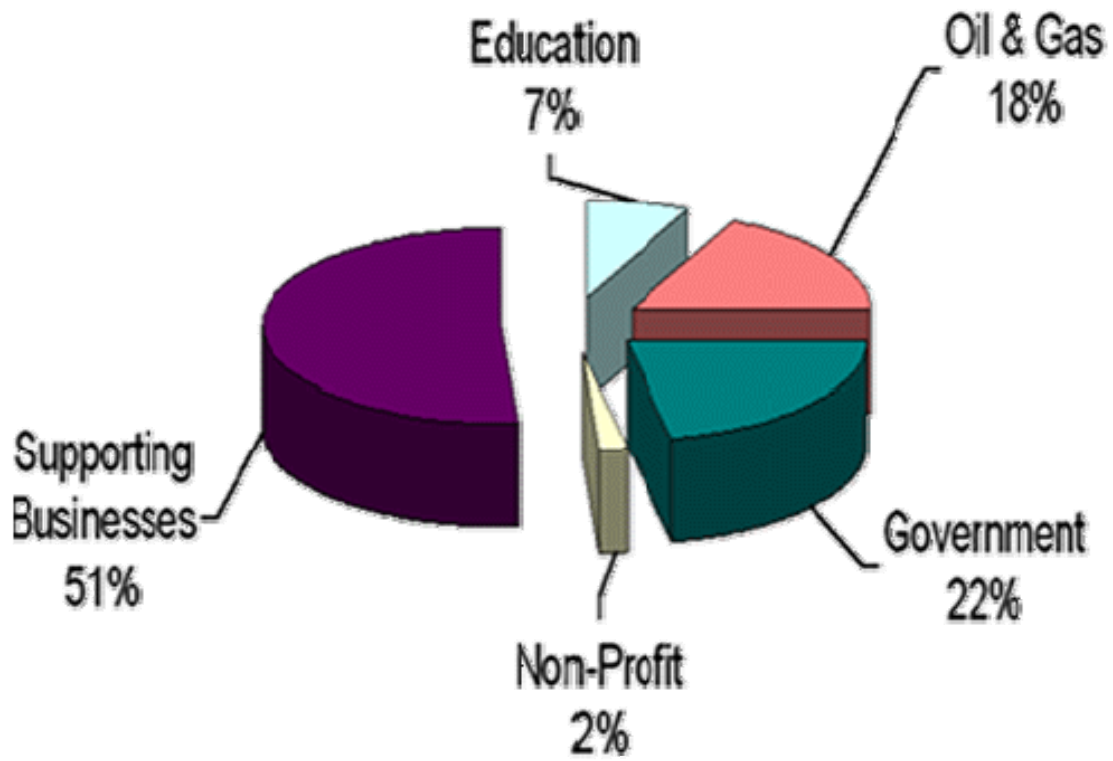
The primary target groups were contacted by mail and via personal contacts. Eight sessions were held at Louisiana State University. Several federal agencies and oil and gas companies in Louisiana helped arrange facilities for the other training sessions. The off-campus locations that provided training facilities at no cost or low cost were the following:

1. Texaco Corporation, Texaco Training Center, New Orleans, LA
2. McNeese State University, Lake Charles, LA
3. University of Louisiana, Monroe, LA.

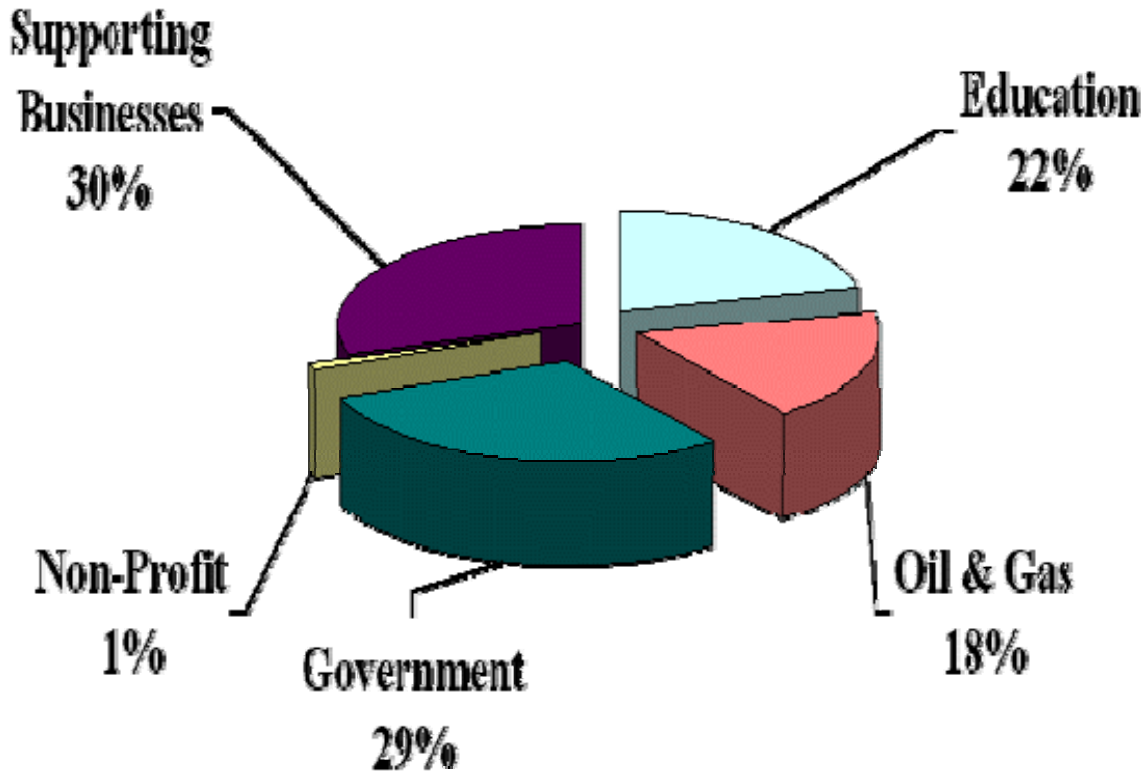
Two two-sided, one page brochures advertising the training sessions were prepared. The brochures were sent in two mailings to the targeted groups. A copy of the brochure is provided in Appendix A. The brochures identified:

1. who should attend,
2. when and where the training would be held,
3. topics to be covered in the training,
4. a list of some potential applications of the data related to oil spill scenarios, and
5. registration and contact information.

Each of the two bulk mailings sent the advertising brochures to approximately 500 addresses. Other targeted mailings were made to selected individuals or locations. The mailing list is available through the Louisiana Applied and Educational Oil Spill Research and Development Program at Louisiana State University.



**Figure 1.1** *Brochures mailed by group; two bulk mailings; 490 brochures each.*



**Figure 1.2** *Training session attendance by group.*

Conducting the training sessions in four different cities around the state helped assure the widest possible information dissemination about the *Louisiana GIS CD*. As mentioned previously, Figure 1.1 provides a summary of the groups on the mailing list by percent. Most of the flyers were sent to businesses supporting the oil and gas industry, many of which are involved in oil spill cleanups. A comparison of the percentages of attendance by group (Figure 1.2) with Figure 1.1 indicates that more people from the educational and the governmental groups attended than received the brochure. The educational group represented 22% of the total attendees, which is more than three times the percentage (7%) of those who received the brochure. On the reverse end, 51% of the brochures went to supporting businesses, but they only represented 30% of the total attendees. More government groups attended (29%) than received brochures (22%), but by only a small percentage. The oil and gas group received 18% of the brochures; 18% of the attendees were from that group.

Understanding why the highest ratio of brochures sent/attendees was recorded with the educational group (+3 times) and the lowest was with the supporting business group (-1.7 times) is not completely resolved. However, several comments can be made. First, the group of educators on the mailing list represented a more focused and interested pool of potential attendees. The mailing to the supporting business group may have included

recipients who were not interested in the technical applications of Louisiana satellite imagery or the accompanying geo-spatial databases.

The general outline for the 12 six-hour training sessions is provided in Table 2.1. This outline was modified to include suggestions from past participants and includes the name of the training section leader.

---

**Table 2.1** Louisiana Oil Spill CD Training Topics To Be Covered

1. **INTRODUCTION** - DeWitt Braud

**A. Geographic Information System**

- Real World Location Coordinates
- Spatial Features Linked to Database Attributes
- Intelligent Data
- Display, Query, Analytic Functions

**B. ArcView Project**

- Open Project
- Stores Document List, Data Location, Organization, Display Characteristics
- Changes Can Be Saved to New Project

**C. ArcView Windows**

- Project Window Contains Document List
  - View
  - Table
  - Chart
  - Layout
  - Script
- View Window
  - Bubble Help
  - Button Help Description
  - Use Help Button for Explanation of Buttons

2. **VIEW** - DeWitt Braud

**\* Pull-Down Menu Name » Function Name**

**A. Properties:** Reset to Feet

- View » Properties\***
- Map Units [meters]
- Distance Units [feet]
- Do Not Change Projection

**B. Table of Contents**

- Themes/Layers**
- Points, Lines, Polygons, Rasters (images)

Features, Symbols  
Review List of Themes

**Display on/off**

*Points: Vegetation*

Lines: Interstate, Pointe Coupee Roads  
Polygons: Parishes: Filled, Outline  
Image: Pointe Coupee

**Theme Activation**

**Display** Facilities  
**Activate** Facilities  
Open DataBase Table  
Attributes Linked to Spatial Feature [Intelligent Data]  
Functions Change for Active Window

**Theme Overlay Order**

**Display** Parish Outlines and Soil Themes  
Drag Parish Outline Under Soils To Hide, Then Reset

**Legend Editor**

Control Symbology, Color, Fill, Pattern, Transparency, Outline  
Apply Unique Colors to Facility Types  
Double Click Theme Facilities  
**Legend Type** [Unique Value]  
**Values Field** [Type]  
**Apply**  
**Display**  
Apply Unique Colors to Soil Associations  
Double Click Soils Theme  
**Legend Type** [Unique Value]  
**Values Field** [Associated]  
**Apply**  
**Display**  
**Theme » Hide Legend**

**Text Labels**

**Window » Show Symbol Window**  
**ABC:** Set Size 10  
x Dismiss Window  
**Display** Parish Theme  
Activate Parish Theme  
**Theme » Auto-Label**  
Allow Overlapping Labels  
**Theme » Remove Labels**  
**Add Theme** East Baton Rouge Parish Image  
**View » Add Theme**  
Set Image Data Source  
Navigate and Select EBR Parish tif File  
**Drag** to Proper Order in Table of Contents  
**Display**

**Tiling:** By Parish

3. **FUNCTIONS** - DeWitt Braud

**A. Zoom**

**Zoom Tool** (in/out): From Point, Box, From View Center

Activate Parish Theme

Reset **Zoom to Active Theme** Parishes

**Select Feature** in Active Theme (Parishes) with **Selection Tool**

Click or Draw Selection Box in Desired Parish(es)

Select Point Coupee Parish

Verify Selection: **Open Theme Table**

Scroll To Find Highlighted Record or **Promote** to Top

**Zoom to Selected** Parish: Pointe Coupee

**Zoom to Theme** St. Mary Parish Image

*Turn on Image*

*Turn on Roads*

**Zoom In** to Town of Franklin using Box

**Display** St. Mary Image à Note value of Image Background

**Get Lat/Lon of Point**

**B. Feature ID** of Active Theme

Activate Parishes: **i** identify

Activate Roads: **i** identify

Turn on Community Theme

Activate Community: **i** identify

Activate Quad24 Theme: **i** identify (**undisplayed**)

**C. Feature Query:** Selection and Location Using Criteria

**Reset Selection Color** to Bright Green

Activate Project Window

**Project » Properties**

Set Selection Color

**Find and Highlight** Location of Road

**Display** St. Mary Parish Roads

*Activate St. Mary Parish Roads Theme*

**Query Builder** ( [Fename] = "La Hwy 70")

**Construct Query:**

Check Update Values Box

Click "Fename" from Fields List to Update Values

Double Click "Fename" from Field List to Build Query

Click = Operation Box

*Scroll Through Values List and Double Click "La Hwy 70"*

**Click New Set**

**Zoom to Selected** Feature

*View Relocates to Morgan City and Centers on Highway 70*

**Relocate View** to Town of Franklin

Activate Community Theme

**Query Builder** ( [Name] = "Franklin" )

**Zoom to Selected** View is Positioned To Franklin

#### **D. Proximity Buffer**

**Identify and Select** Roads within 1000' Radius of Franklin Senior High School

Activate Community Theme

**Select School**

**Query Builder** ( [Name]= "Franklin Senior High School" )

Activate St. Mary Parish Roads Theme

**Theme » Select by Theme**

Select Features of Active Theme (Roads) That  
[are within a distance of]

The Selected Features of  
[Community]

Selection Distance [1000]ft

**New Set**

**Open Theme Table** for Roads

**Promote** Selected Records to Top

**Identify and Select** Community & Facility Features Within 2 mile Radius of

latitude/longitude Point

Set lat/lon Point (Use TableX Theme for now) May Need to Zoom Out

Activate Community and Facilities Themes

**Draw** 2 Mile Radius Circle from Point using Graphic Circle

Make Sure Graphic is Selected [brackets]

**Select Features Using Graphic**

**Open Theme Table** and **Promote** Records

**Identify Schools** Within the Two Mile Radius

Activate Community Theme

**Query Builder** ( [Type] = "school" )

**Select from Set**

**Open Theme Table** and **Promote** Records

Save Community Theme With Selected Records as New Theme

**Export Selected Records in Table to ASCII file**

Active Table Community

**File » Export**

Delimited Text

Open in Notepad

## E. Overlay

**Find Seabirds** in Terrebonne Parish

Activate Parish Theme

**Select Feature** Terrebonne Parish

**Zoom to Selected** Terrebonne

Activate Seabirds Theme

**Theme » Select by Theme**

Select Features of Active Theme (Seabirds) That  
[intersect]

The Selected Features of

[parishes]

## F. Measurement

**How much boom** is Needed to Contain a Hypothetical Spill?

Activate Iberia Parish Image Theme

**Zoom to Active Theme** and Turn on Iberia Parish Image

**Zoom In** to Weeks Island Vicinity

**Draw Point** at Oil Spill Location near Weeks

Assume SW Wind and Drift

**Draw Boom** (graphic line) to Contain Spill Movement

Color Boom Red

**Window » Show Symbol Window**

Select Red Color from **Palette**

**Measure** Length of Boom: Read Length in Lower Left of View

Determine Radius of Weeks Island

**Draw Circle** from Center: Read Radius in Lower Left of View

## G. Add Event Theme

**Activate Project** Window

Select Table Document

Add Table: Specify Delimited Text

Select Table 970703\_1.txt from CD

**Activate View 2>**

**View » Add Event Theme**

*Table 970703\_1.txt*

*X Field: utm\_east\_27*

*Y Field: utm\_north\_27*

**Display** and Activate New Theme

**Zoom to Active Theme**

## H. Summarize Field

**Activate 1999 Field Data Theme**

Open Theme Table

Activate Parish Name Field

Field » Summarize

Choose Water Salinity  
Average  
Add/OK  
Summary Table Shows Average Salinity by Parish

## I. Theme Attribute Display

**Display Parish Population** with Color Ramp  
Double Click Parish Theme to Display Legend  
Legend Type: Graduated Color  
Classification Field: Pop\_94  
Do Not Normalize  
Classify: Natural Breaks  
Color Ramp: Red Chromatic  
Apply  
**Select all Parishes >= 100K Population**  
Activate Parish Theme  
**Query Builder** Pop\_94 >= 100,000  
**New Set**  
**Create Chart** From Active Table window  
**Table » Chart**  
Field: Pop\_94  
Label Series using [Parish]  
Add  
OK

## J. Link Tables

**Open Theme Table**  
Parish Boundaries  
Co-Parish  
Pipeline Companies  
**Link the 3 Tables in One Direction:**  
**Select** *Parish* Field in both Parish Boundaries & Co-Parish Tables  
Activate Parish Boundaries  
**Table » Link**  
**Select** *Fname* Field in both Co-Parish & Pipeline Companies  
Tables  
Activate Co-Parish Boundaries  
**Table » Link**  
  
**Link the 3 Tables in the Opposite Direction:**  
**Select** *Fname* Field in both Co-Parish & Pipeline Companies  
Tables  
Activate Pipeline Companies Tables  
**Table » Link**  
**Select** *Parish* Field in both Parish Boundaries & Co-Parish Tables  
Activate Co-Parish Table

### **Table » Link**

Select a Pipeline Company from the Pipeline TAbble to highlight parishes in the view that the selected company operates.

Select a Parish in the view to highlight pipeline companies in the table that operate in the selected parish.

---

### **3.0 Relevance**

The recent release of the *Louisiana GIS CD*, developed under the direction of DeWitt Braud and distributed via LOSCO, has provided managers and personnel in state and federal agencies, industry, local government, and the educational community with an extremely valuable tool for visual displays, GIS-based analysis and research, and training of both adults and children. These CD-ROMs and the accompanying free software, along with the widespread availability of connections to the Internet, can facilitate communication and coordination of a wide range of activities, from resource management to emergency planning and response. Even though similar datasets have been released, relatively few people in Louisiana have the knowledge or experience needed to make the best use of the *Louisiana GIS CD*. Without training or technical assistance, many potential users will never use the datasets provided on this CD-ROM set. Very few industry, government, or service personnel have been exposed to either the type of spatial data on these CD-ROMs or the techniques necessary to view, analyze, query, and create maps with these datasets. Even fewer of our educators have the skills necessary to train or teach others how to access and utilize these datasets. These 12 six-hour training sessions educated 134 people in Louisiana about satellite spatial datasets and the 41 attached GIS information layers on the *Louisiana GIS CD*.

### **4.0 Work Plan and Time Schedule**

Two of the investigators (Braud and Peele) involved in this project directed the preparation and production of many of the geo-spatial datasets used in the project. They both have considerable experience using GIS software. DeWitt Braud was the project manager of the *Louisiana GIS CD*. The other two project investigators (Peele and Lewis) were also major contributors to the *Louisiana GIS CD*. Their expertise allowed the principal and co-principal investigators to focus on the central theme of this project ( i.e. training others to utilize the datasets). The main parts of the workplan included:

1. receiving and establishing the budget and project at Louisiana State University,
2. revising some of the instructional materials,
3. contacting potentially interested parties, including oil industry personnel federal, state and local governments agencies; community service organizations; and educators,

4. selecting locations throughout Louisiana for the training sessions,
5. presenting the training sessions,
6. evaluating the training sessions via questionnaires, and
7. producing quarterly reports and a final report.

The project was conducted over a 15 month period (May 1, 1999 through August 31, 2000). The workplan consisted of the elements noted in Table 4.1 and Figure 4.1.

---

**Table 4.1** Project Work Plan of Activities Sequenced by Time

May 1999..... Secure funding and establish contract budget codes.

May 1999..... Subcontract staff responsible for arranging sessions.

May 1999..... Hire undergraduate student to copy educational material and support other

activities related to the training sessions.

May 1999..... Contact sources that can provide potential groups and locations for training sessions.

May 1999..... Finalize the instructional material and practice upcoming presentations.

June 1999..... Prepare workshop brochure and mailing list.

July 1999..... Mail out brochures and schedule workshops.

Sept 1999..... Present first six-hour training session at Pleasant Hall, LSU, Baton Rouge.

Nov 1999..... Present second six-hour training session at Pleasant Hall, LSU, Baton Rouge.

Dec 1999..... Present third six-hour training session at Pleasant Hall, LSU, Baton Rouge.

Jan 2000..... Present fourth six-hour training session at Pleasant Hall, LSU, Baton Rouge.

Feb 2000..... Present fifth six-hour training session McNeese University, Lake Charles.

Mar 2000..... Present sixth six-hour training session at Pleasant Hall, LSU, Baton Rouge.



|   |  |  |  |  |  |  |  |  |  |  |  |  |   |  |   |   |
|---|--|--|--|--|--|--|--|--|--|--|--|--|---|--|---|---|
| R |  |  |  |  |  |  |  |  |  |  |  |  | n |  |   |   |
| S |  |  |  |  |  |  |  |  |  |  |  |  |   |  | n |   |
| T |  |  |  |  |  |  |  |  |  |  |  |  |   |  |   | n |

Apr 2000..... Present ninth six-hour training session at University of Louisiana, Monroe.

June 2000..... Present tenth six-hour training session at CADGIS, LSU, Baton Rouge.

June 2000..... Present eleventh six-hour training session at CADGIS, LSU, Baton Rouge.

July 2000..... Present twelfth six-hour training session at Pleasant Hall, LSU, Baton Rouge.

Aug 2000..... Prepare final report.

**Task Descriptions**

A..... Secure funding and establish contract budget codes.

B..... Subcontract staff responsible for arranging sessions.

C..... Hire undergraduate student to copy educational material and support other activities related to the training

sessions.

D..... Contact sources that can provide potential groups and locations for training sessions.

E..... Finalize the instructional material and practice upcoming presentations.

F..... Prepare workshop brochure and mailing list.

G..... Mail out brochures and schedule workshops.

H..... Present first six-hour training session at Pleasant Hall, LSU, Baton Rouge.

- I..... Present second six-hour training session at Pleasant Hall, LSU, Baton Rouge.
- J..... Present third six-hour training session at Pleasant Hall, LSU, Baton Rouge.
- K..... Present fourth six-hour training session at Pleasant Hall, LSU, Baton Rouge.
- L..... Present fifth six-hour training session McNeese University, Lake Charles.
- M..... Present sixth six-hour training session at Pleasant Hall, LSU, Baton Rouge.
- N..... Present seventh six-hour training session at Texaco Training Center, New Orleans.
- O..... Present eighth six-hour training session at Texaco Training Center, New Orleans.
- P..... Present ninth six-hour training session at University of Louisiana, Monroe.
- Q..... Present tenth six-hour training session at CADGIS, LSU, Baton Rouge.
- R..... Present eleventh six-hour training session at CADGIS, LSU, Baton Rouge.
- S..... Present twelfth six-hour training session at Pleasant Hall, LSU, Baton Rouge.
- T..... Prepare final report.

**Figure 4.1** *Event-flow diagram.*

The workplan/time schedule was organized around the optimum time for potential participant availability, the working schedule of the three project investigators, the project funding schedule, and the availability of computer training facilities. During the first four months of the project (May through August), the training sessions were organized, instructional materials revised, the locations of approximately half of the training sites determined, and the logistical support for the training sessions arranged. DeWitt Braud conducted almost all of the training sessions, with assistance from Hampton Peele. Experience from the previous year of training sessions had indicated the need for an assistant who circulated around the lab and assisted those in need. At least

two instructors were present at every training session. As indicated in the outline of lecture material, DeWitt Braud handled the bulk of the lecturing.

## **5.0 Deliverables/Final Products**

During the course of this project, the *Louisiana GIS CD* was not available, and a training version was utilized as the primary teaching tool. An instruction manual, developed last year, was revised and used to complement the training sessions. Every participant received a copy of this manual along with the two-CD set to help support continued learning upon the participant's return to the workplace. The distributed manual entitled, *An Introduction to Louisiana GIS CD: Remote Sensing and GIS Training* is a loose-leaf bound document with five sections. The sections are entitled:

1. Remote sensing
2. GIS - tools
3. GIS - Lesson 1
4. GIS - Lesson 2
5. GIS - Lesson 3

A detailed outline, covering each step required to complete a demonstrated procedure was provided in the manual (see Table 2.1). The three sections of GIS lessons in the manual, provided by ESRI, helped support the outlined instructions after the participants completed the training sessions. Three copies of this training/instructional manual are included, under separate cover, as part of the final report.

## **6.0 Summary of Introductory and Training Sessions**

### **6.1 Locations and Dates**

The arrangement of locations and dates for the computer training was problematic for several reasons:

1. It was difficult to find facilities with enough suitable computers.
2. Many suitable facilities were already reserved.
3. Oil companies have reduced funding for training facilities.

Figure 6.1 provides the locations and dates for the workshops. Six of the 12 sessions were held at the computer training facility of the Department of Continuing Education at Louisiana State University in Baton Rouge. Two more sessions were held at the Louisiana State University Department of Geography and Anthropology's CADGIS Lab.

These eight training sessions were spread over seven months. The remaining four training sessions were held outside Baton Rouge. One session was held in February, two in March, and one in April. The first session was held at McNeese State University in Lake Charles. The next two were held at the Texaco Training Center in New Orleans. The last training session outside of Baton Rouge was held at the University of Louisiana in Monroe.

## **6.2 Workshop Registration and Attendance**

Interest in the workshops was high. This statement is supported by the high percentage of participant pre-registration. Most of the training sessions were either fully booked or over-booked. The number of permitted reservations depended on the location of the training facility, the number of computers committed to the training session, and the number of participants allocated to each computer. Although not always possible, we tried to have only one person at each computer. The number of reservations given in Figure 6.2 sometimes represents greater than 100% of the possible available slots with the anticipation of some "no-shows."

Attendance at the training sessions was much improved over the previous year when our percentage of "no-shows" was 34%. This year the percentage of "no-shows" dropped to approximately 9%. This dramatic increase in attendance was largely due to our new policy of contacting the registrants a week prior to the training session and getting a verbal commitment as to whether they would attend. If they were not able to attend, we had time to fill their vacant training slot.

## **6.3 Course Evaluations**

A standard evaluation form, developed by LSU Continuing Education, was provided to every participant. Nearly every participant completed the form. The participants were asked to evaluate the course instructors (Table 6.1) and the course content (Table 6.2). On a scale of 1 to 5, with 5 being the highest ranking, the instructors' evaluations ranged from 4.56 to 4.89. The overall instructor rating was 4.80. Although we realize that the instructor evaluations are excellent, we understand that there are many ways to improve on the course.

Evaluations of the course content were not quite as high, but still very good, ranging from 4.57 to 4.67. The overall rating was 4.67. Figure 6.3 shows a list of the comment questions that the participants were asked to answer. Table 6.3 is a summary of their responses to those questions. It is satisfying that 93.5% of the participants felt the course was at the right level, and that 100% of them would recommend the training to others. This response affirms that we were providing valuable information and training to the participants. Another interesting comment was that 28% thought that the course could be improved by extending the time, even though the course was two hours longer than last year's training sessions. Almost 60% of those attending the training sessions learned about the training by word of mouth, and 34% learned about the course through the brochures we distributed. Our first interpretation of these results was that our bulk

mailings were not reaching the correct personnel. However, we now believe that the brochures were a good source of course information, and that some who received the brochures passed on the information to others who attended the sessions.

| <b>Figure 6.1</b>   |   |
|---|---|
| <b>Location and Dates of Workshops</b>  |   |
| <b>LSU, Continuing Education</b><br><b>Baton Rouge, LA</b><br>September 28, 1999<br>November 2, 1999<br>December 14, 1999<br>January 18, 2000<br>March 10, 2000<br>July 6, 2000 | <b>Texaco Training Center</b><br><b>New Orleans, LA</b><br>March 16, 2000<br>March 17, 2000 |
| <b>McNeese University</b><br><b>Lake Charles, LA</b><br>February 25, 2000   | <b>University of Louisiana</b><br><b>Monroe, LA</b><br>April 25, 2000                       |
| <b>LSU, CADGIS Lab</b><br><b>Baton Rouge, LA</b><br><b>June 12, 2000</b><br><b>June 13, 2000</b>  |   |

**Figure 6.1** *Location and dates of workshops.*

| <b>Figure 6.2</b>          |                     |                   |                         |
|----------------------------|---------------------|-------------------|-------------------------|
| <b>WORKSHOP ATTENDANCE</b> |                     |                   |                         |
| <b>Date</b>                | <b>Reservations</b> | <b>Attendance</b> | <b>Percent No Shows</b> |
| September 28, 1999         | 11                  | 10                | 9%                      |
| November 2, 1999           | 12                  | 12                | 0%                      |

|                   |     |     |     |
|-------------------|-----|-----|-----|
| December 14, 1999 | 14  | 9   | 36% |
| January 28, 2000  | 11  | 9   | 18% |
| February 25, 2000 | 15  | 17  | 0%  |
| March 10, 2000    | 12  | 10  | 17% |
| March 16, 2000    | 10  | 12  | 0%  |
| March 17, 2000    | 7   | 7   | 0%  |
| April 14, 2000    | 6   | 7   | 0%  |
| June 12, 2000     | 17  | 14  | 18% |
| June 13, 2000     | 17  | 14  | 18% |
| July 6, 2000      | 15  | 13  | 13% |
| <b>Total</b>      | 147 | 134 | ~9% |

**Figure 6.2** *Workshop attendance.*

---

**Table 6.1** Evaluation Summary: Course Instructor  
EVALUATION SUMMARY: COURSE INSTRUCTOR

|                                   |      |
|-----------------------------------|------|
| 1. Knowledge of subject matter.   | 4.89 |
| 2. Effectiveness of presentation. | 4.65 |
| 3. Rapport with the class.        | 4.59 |
| 4. Effective use of class time.   | 4.70 |
| 5. Quality of handouts/visuals.   | 4.56 |
| 6. Overall rating of instructor.  | 4.80 |

**Table 6.2** Evaluation Summary: Course Content  
EVALUATION SUMMARY: COURSE CONTENT

|                               |      |
|-------------------------------|------|
| 1. Description of course.     | 4.61 |
| 2. Organization of course.    | 4.57 |
| 3. Goals of course achieved.  | 4.59 |
| 4. Overall rating of content. | 4.67 |

---

## Comment Questions

1. At what level was the course presented?  
Too Advanced      About Right      Too elementary
2. Would you recommend this course to others?
3. Which areas of the course were most helpful?
4. Which areas of the course were least helpful?
5. How can the course be improved?
6. How did you hear about this course?

**Figure 6.3** Comment Questions

---

**Table 6.3** Summary of Participant's Comments

1. 4% Too advanced  
93.5% About right  
2.5% Too elementary
  2. 100% would recommend the course to others.
  3. 21.5% found the entire course most helpful.  
15% found the hands on training most helpful.  
10% found ArcView overview most helpful.  
9% found the CD features most helpful.  
8% found the map making tips most helpful.
  4. Comments included ArcView, layouts and remote sensing.
  5. 28% would like to extend the class time.
  6. 59.5% found out about the course by word of mouth.
  7. 34% found out about the course through the brochure.
- 

## 7.0 Problems Encountered

The problems we encountered were minimal and none prevented the successful completion of the project. Several problems elucidated in the previous year's final report were solved. We still had to deal with significant delays in the production of the *Louisiana GIS CD*, and it did not arrive until late in the project year. The prior problem

of "no-shows" was handled by having staff contact the registrants prior to the training. This technique worked well and would be a recommended action for future training programs.

Using a new computer based training facility was difficult and required several discussions with the facility manager as well as travelling to the facility the day before the training. Setting up and checking the computers the day before the actual training session was essential. During this preparatory check, we often found minor problems with the computers, that if not rectified, would have caused considerable delays the day of the training session. Considering the occasionally less than adequate facilities, unusual circumstances, and unanticipated problems that arise when teaching "on-the-road," we believe it is more desirable to use one facility where all the problems have been solved and the instructors know the equipment.

## **8.0 Results**

As previously mentioned, 12 training sessions were conducted at five different locations in four different cities. The four cities (Baton Rouge, New Orleans, Lake Charles, and Monroe) provided a good geographic spread around the state of Louisiana. Reservations were made by 147 individuals. Of these, 134 attended the 12 workshops. We thus only had approximately 9% "no-shows," a dramatic decrease from last year's 34%. Course evaluations for both the instructors and course content were high for the second year, with 5.0 being the top score; instructors received an overall rating of 4.8. The overall course content received a 4.67 rating. These scores are slightly higher than last year. All of the participants said they would recommend the course to others.