



*Native Earth
Consulting*

Rebecca Whitton – Project Manager
Cameron Howitt – Assistant Manager
Justin Briseno – GIS Analyst
Michael Stanley – Web Designer

Flash Flood Fatality Frequency in Texas Counties

Progress Report

Prepared by:

Native Earth Consulting

INTRODUCTION

Native Earth Consulting is now presenting you with a report on the progress that has been made on the research conducted for the IFFL research project. Immediately following the proposal presentation on March 2, Native Earth began work on the project. The project completion date is scheduled for May 11, 2009 with receipt of all final deliverables and a project presentation detailing the results and conclusions of the research.

Rebecca Whitton, Project Manager, will be working on all technical writing of the reports, presentations and the poster. Cameron Howitt, Assistant Project Manager, will be responsible for the Flood Fatality Database statistics and questions, and overseeing and aiding in the construction of the websites and functions in ArcMap. Justin Briseno, GIS Analyst, will be managing ArcMap and working on all final maps. Michael Stanley, GIS Analyst, will be administering the websites that are being created for both Native Earth Consulting and the IFFL.

In the following sections of this progress report, the IFFL will be informed on the following:

- Work Completed
- Current/Future Work
- Overall Appraisal of the Project

PROJECT DESCRIPTION

The following is a review of the purpose and scope of the project and research being conducted by Native Earth Consulting.

Purpose

The goal of this research is to utilize a geographic information system (GIS) to identify and analyze the spatial distributions of historically-recorded flood and flash flood events resulting in fatalities in Texas. Events will be analyzed at a variety of scales temporally and compared with population growth trends throughout the region in order to establish whether there is a distinct relationship or pattern. Other indicators such as gender, age, and type of incident, along with damages to property and crops, will be also examined. It will determine areas of greatest vulnerability and potential danger.

Scope

Texas will serve as the geographical focus of the project. Texas is very prone to flash flood disasters and has recently been experiencing exponential population growth, serving as an ideal region of study. Temporally, data will be utilized and analyzed starting from 1993 through 2007.

PROJECT REPORT TASKS

Flood Fatalities Database

Work Completed

- All flood events in which resulted in the occurrence of a fatality for the counties in Texas were compiled into an excel spreadsheet.
- These events were cross-referenced by the National Climatic Data Center (NCDC) Storm Events Database. Only events that occurred in both databases are used in this study.

- 112 flood events are used for analysis with a total of 182 fatalities. From these events, the following questions have been answered in numeric totals and percentage of total:

1. How many events and fatalities occurred per year and decade?
2. What is the earliest event recorded?
3. What is the most recent event recorded?
4. How many records are associated with the following criteria and what are the totals, percentages and distributions for each?
 - a. Property Damage
 - b. Crop Damage
 - c. Gender (Male/Female)
 - d. Age
 - e. Type of Incident Death
 - f. Lat/Long Information
 - g. Other Location Information (Descriptive)

- Reports from the NCDC Storm Events Database have been generated in hard and soft copies. Hard copies have been compiled into a single binder for delivery to client.

Current/Future Work

- Statistics will be generated and final results, along with the results from above questions, will be compiled into tabular format for the final report.

GIS Layers

Work Completed

- All relevant data layers have been gathered and imported into ArcMap. Layers include the following:
 1. Texas Counties
 2. Rivers
 3. River Basins
 4. Transportation (Major Highways)
 5. Terrain

Current/Future Work

- Any additional work associated with the GIS data layers is further explained under the ArcMap section of the progress report.

Population Growth of Texas Counties

Work Completed

- Maps from 1990 and 2000 have been gathered from the Texas State Data Center showing the total population growth in Texas Counties as a percent of the state population.

Current/Future Work

- Maps produced by the Texas State Data Center will be used in comparison with the flood fatalities maps for any existing correlation.

ArcMap/Static Maps/GIS Analysis

Work Completed

- All layers as stated above have been imported into ArcMap.

Current/Future Work

- Flood fatalities database imported into ArcMap.
- Perform an attribute join in order to join the fatality data to the county layer.
- Create static maps of fatalities per decade.
- Attempt to geocode available events.
- Create maps based on available criteria.

Final Deliverables: Websites & Poster

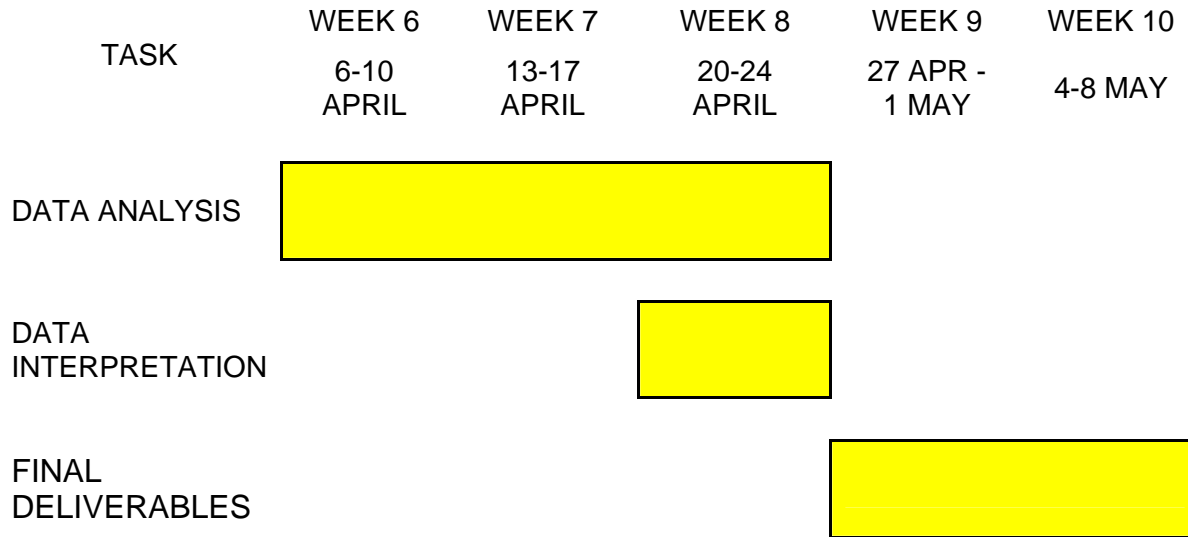
Work Completed

- Separate websites for Native Earth Consulting and the IFFL will be constructed and will contain links to each other. Work has begun in building the structure and layout of each site.

Current/Future Work

- Native Earth Consulting Website - Construct the following pages:
 1. About Native Earth
 2. Projects: Summary of IFFL, project and link to IFFL site
 3. Contact
- IFFL Website – Construct the Following Pages:
 1. About the IFFL
 2. Maps
 3. Interactive Maps
 4. Additional Information/Links
- Poster – Begin work on poster after final results and maps have been created.

REVISED TIMELINE



<u>Detailed Task</u>	<u>Completion Date</u>
• Flood Fatality Database	10 April
• Static Maps/GIS Analysis	24 April
• Website	4 May
• Poster	4 May
• Final Report	8 May
• Final Presentation	11 May
• Final Deliverables	11 May

CONCLUSION & ASSESSMENT

The project for the IFFL is coming along very well. Native Earth has not come into any major problems and there are no foreseeable issues in the future. There has been more information available than originally anticipated and work is actually ahead of schedule.