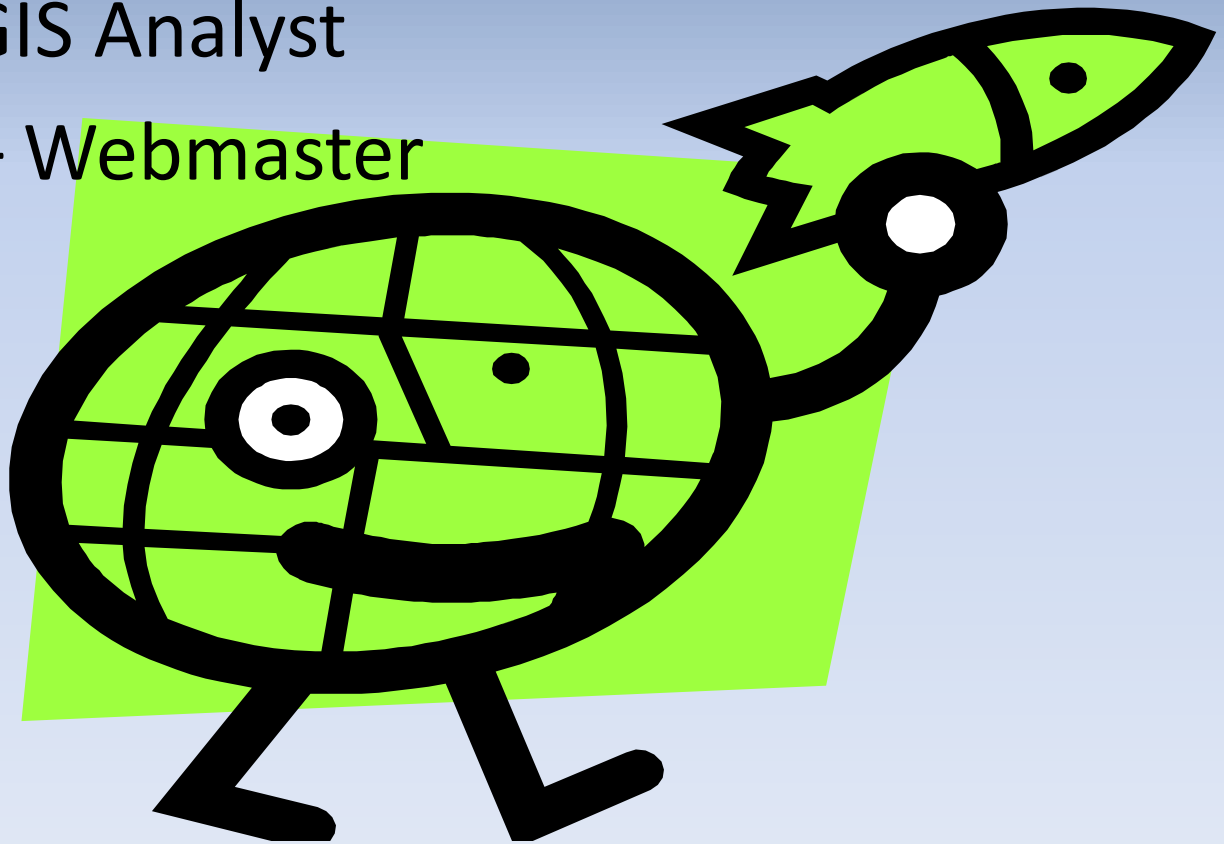
BOBCAT

GEOSPATIAL SOLUTIONS

Group Members

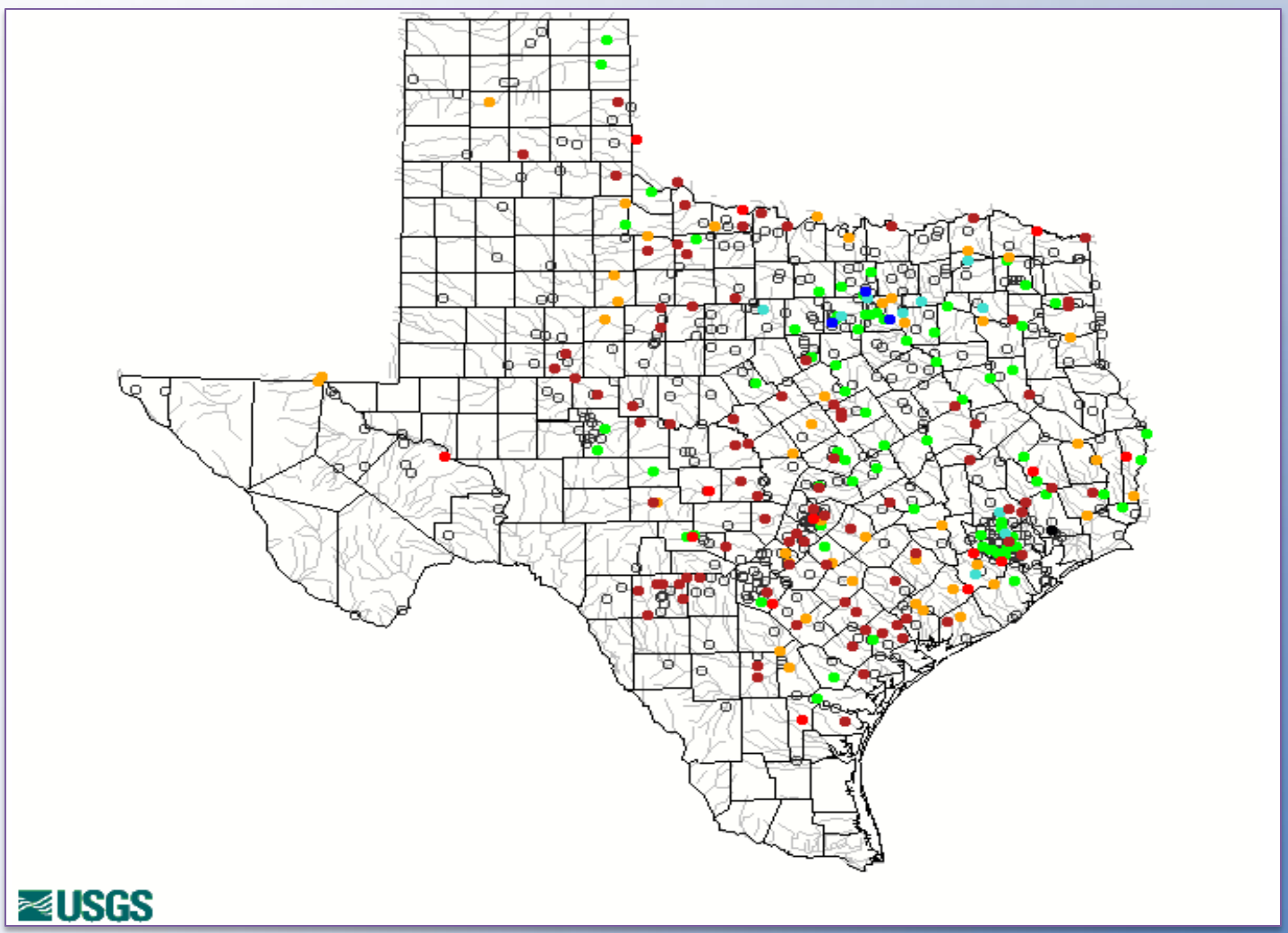
- Teresa Santerre Hobby – Manager
- Sarita Hedgepeth – Assistant Manager
- Charles Hill – GIS Analyst
- Scott Lindsay – Webmaster



Summary

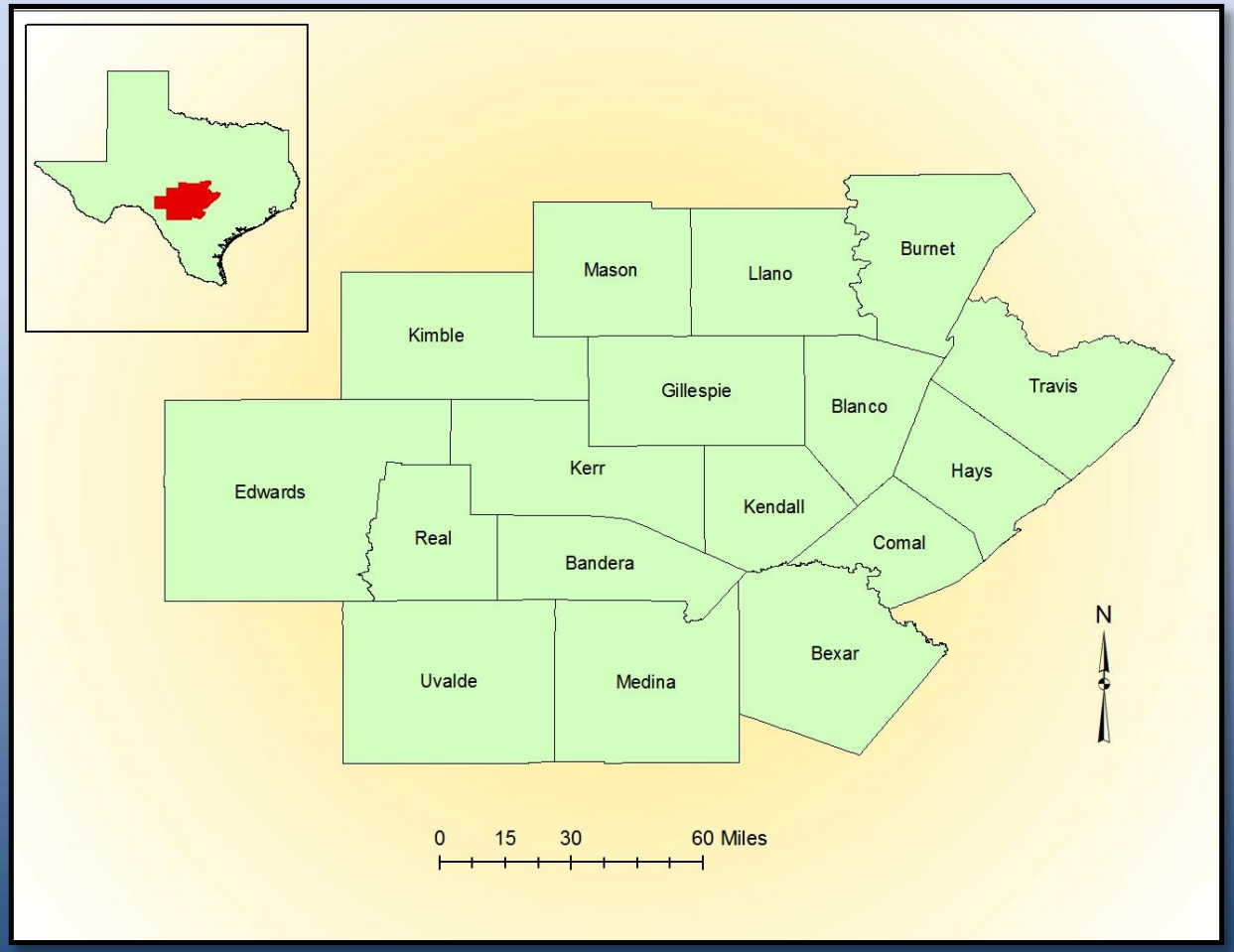
- Color-coded map
  - Location of wells
  - Percentile of water levels
- Historical water levels
  - Ten years
  - Forty individual readings

USGS WaterWatch



Scope

- The study will include the 17 counties that encompass the Texas Hill Country.



Data

- BGS will acquire a digital elevation model (DEM) layer to find elevations for each well within the HCA designated counties. In order to display the research that is requested we will need to acquire data on the wells, county boundaries, and roads.

Layer	Source
County Boundaries	TNRIS
Roads	TNRIS
Urban Area	TNRIS
DEM	USGS
Wells	CAPCOG

Methodology

- Collection of well data
  - Well information will be collected from both the United States Geological Survey and the Texas Water Development Board databases.
  - All wells must have at least 10 years of data and at least 40 independent measurements over those 10 years.
  - Well information will be listed in an Excel spreadsheet and will be imported into ArcGIS 10 to geocode their locations based on decimal latitude and longitude coordinates.

Methodology

- Map product
  - ArcGIS will be used to analyze data layers, perform needed calculations and produce a map product showing the results.
  - The map product and data layers will be exported to a website for HCA to use and conduct further research. The data layers will be interactive.
  - Collected data layers will be displayed for easy identification of well locations.

Methodology

- Map product (cont)
  - Geocoded wells will be displayed in graduate colors, with corresponding percentile values, in order to establish range. Percentile software provided to us by the HCA staff will be used to calculate water level values by means of historical records obtained.

Implications

- This project is for the use of Hill Country Alliance to be able to obtain knowledge on the groundwater levels and more specifically the well depths in the Hill Country region.
- This mapping system will provide useful information as far as groundwater levels for Hill Country Alliance that perhaps in the future may be used by the public located in the Hill Country region of Texas.

Budget

Personnel	Hourly Rate	Hours Per Week	Project Length	Total Hours	Total Cost
Project Manager	$41.00	12	12 weeks	144	$5,904.00
Assistant Manager	$30.50	12	12 weeks	144	$4,392.00
Technician I	$21.50	12	12 weeks	144	$3,096.00
Technician II	$21.50	12	12 weeks	144	$3,096.00
Total Personnel Cost					$16,488.00
Equipment	**Description**	**Cost**			**Total**
Maintenance	4 computers	$175.00/month	12 weeks		$2,100.00
Supplies	4 computers	$200.00			$800.00
Depreciation*					$595.98
Total Equipment Cost					$3,495.00
Data					**Total**
Software	ArcView (4)	$3,500.00/1 year	12 weeks		$3,500.00
	Extensions (2)	$2,500.00			$5,000.00
Purchased					$1,200.00
Total Data Cost					$9,700.00
Total Project Expenses					$29,683.00

*Depreciation= $2,384.00 per computer X 4 computers / 48 months (life) X 3 months (use) = $595.98

Timetable

Start Date	Task	Due Date
Wednesday, Sept. 7	Start obtaining well data (divide work load)	Monday, Sept. 19
Wednesday, Sept 14	Finish Preliminary Proposal (Data, methodology, implications and budget)	Monday, Sept. 19
Wednesday, Sept. 21	Data clean up (well elimination, cross referencing)	Wednesday, Oct. 5
Wednesday, Oct. 5	Begin percentile work	Wednesday, Oct. 19
Wednesday, Oct. 5	Begin map work	Wednesday, Oct. 19
Wednesday, Oct. 19	Start combining percentile and map work	Monday, Oct. 31
Monday, Oct. 24	Start website creation	Monday, Nov. 28
Wednesday, Nov. 2	Start final proposal draft	Monday, Nov. 28
Monday, Dec. 5	Have all deliverables done	Monday, Dec. 5

Final Deliverables

- By December 5, HCA will have a detailed final report, a professional poster for display in the Geography Department, a website, and two CDs containing the following:
- All data
- Metadata
- Proposal, Progress, and Final Reports
- Poster
- PowerPoint Presentations
- Instructions on how to use CD (*readme* file)

Conclusions

- Future
  - Real-time water level data
  - Website
  - Monitor groundwater levels for the Texas Hill Country

References

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Wilder, Forrest. "The End of the Hill Country." *Texas Observer*. 20 July 2010. http://www.texasobserver.org/forrestforthetrees/the-end-of-the-hill-country (last accessed 12 Sept. 2011).

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Any questions?