

POTENTIAL HABITUAL LAND FOR THE GUADALUPE BLANCO RIVER TRUST





Enviromaps

- GIS Consultants
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 - Assistant Manager: Adriana Fernandez
 - GIS Analyst/Data Specialist: Megan Foster
 - GIS Analyst/Webmaster: Matthew McCracken

Our Mission:

- “Help enhance quality of life through Geographic Information Systems”

GUADALUPE-BLANCO RIVER TRUST

- Established in 2001
- Extension of GBRA
- 13 county extent
- Goal:
 - Obtain land by means of donation
 - Conservation easements ensure security of land



PROBLEMS AND SOLUTIONS

GBR Trust's Problem

- Comprehensive database
- Shortage of property for whooping crane
- Need to acquire more land

Enviromaps Solutions

- Building a geodatabase
- Land suitability analysis for whooping crane habitat

THREE PHASES

- Phase 1:
 - Create geodatabase
 - Meet necessary criteria
 - Database management
- Phase 2:
 - Locate potential land easements
 - Meet criteria of whooping crane habitat
- Phase 3:
 - Identifying all easements
 - In conjunction with phase 1



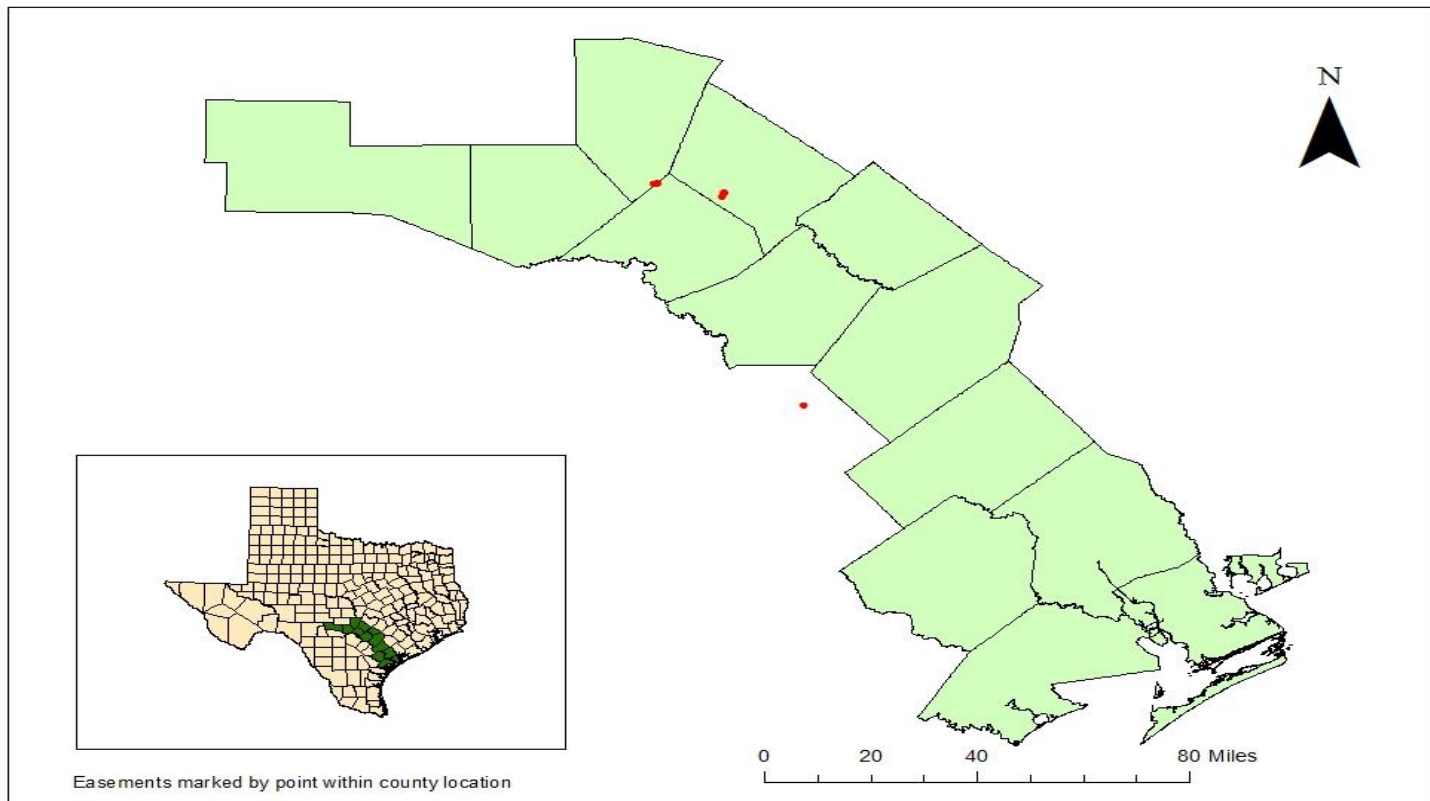
WHY WHOOPING CRANES



- Endangered Species
- Only 200 in wild
- Winter in Texas
- Space is scarce for growth
 - In GBRT's extent

SCOPE OF OUR STUDY

Study Area



DATA FACTS AND SOURCES

- Sources

- Texas General Land Office
- Texas Parks and Wildlife
- Texas Department of Transportation
- County Abstract Data
- TNRIS

- Facts

- NAD1983 State Plane South Central
- Lambert Conformal Conic

DATA

Point

- Species Habitat
- Beach Access

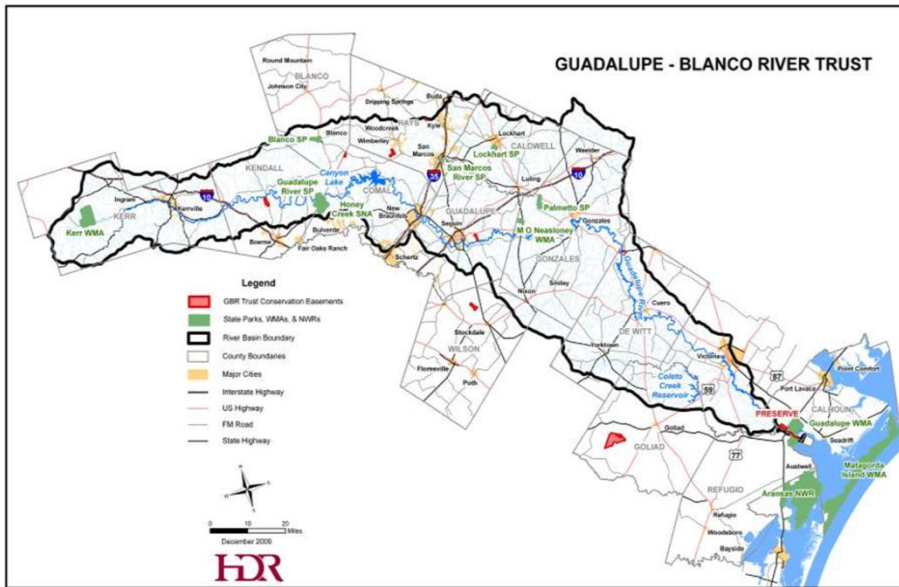
Line

- Roads
- Rivers

Polygon

- Conservation Easements
- County Abstract Data
- Sensitive Environmental Areas
- Priority Protected Areas
- County boundaries
- School districts
- State Parks
- State Precipitation

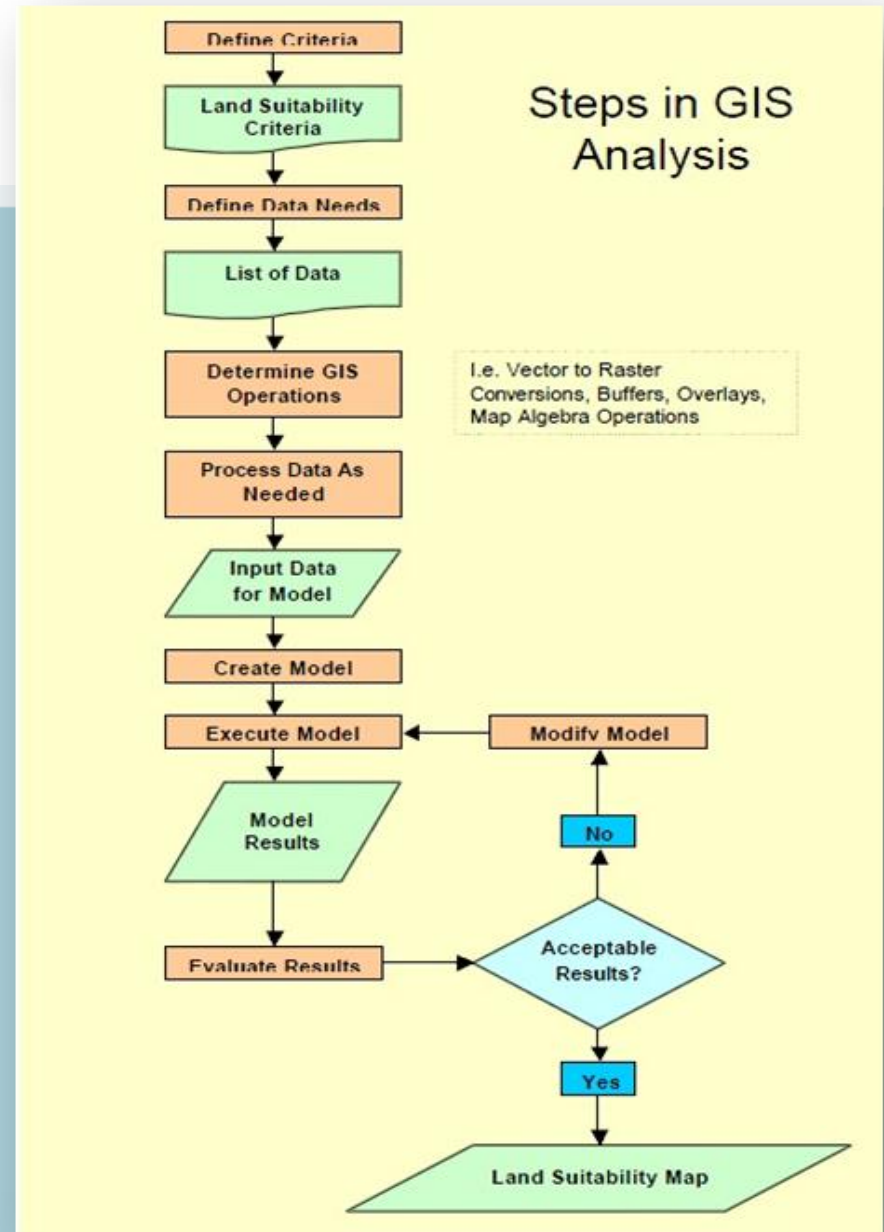
METHODOLOGY



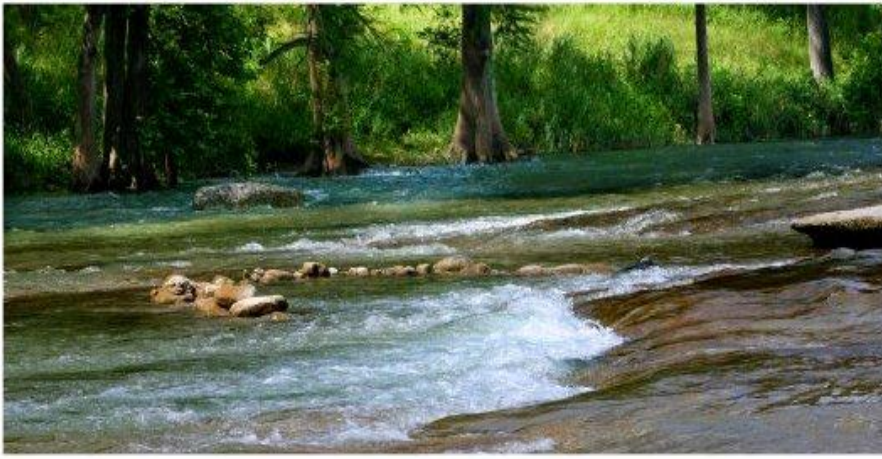
- Phase I: Create database
 - Political boundaries
 - Protected areas
 - Parks and refuges
 - Vegetation types
 - Important agricultural area
 - Land ownership data (parcel)
 - Priority terrestrial & aquatic wildlife habitats

METHODOLOGY

- Phase II:
 - Land suitability analysis
 - Define the criteria
 - All factors of whooping crane sustainability as given to our team by the GBRT
 - Locate acceptable land areas



IMPLICATIONS



- Create community awareness of GBRT's efforts
- Facilitate further growth of the GBRT

TIME-TABLE

Activity	Initiation date	Completion date
Form teams	August 29	August 29
Data Collection	August 31	September 28
Create GBRA GIS	September 14	October 1
Data Pre-processing	September 14	October 19
Data interpretation	September 28	November 21
Create website	November 16	November 30
Prepare final deliverables	December 6	December 12
Final Presentation	December 12	December 12

BUDGET

Service	Cost	Amount	Totals
Management			
Assist. Manager Duties	\$25/hr	3hr/wk x 10wks	\$750
Assist. Manager as Analyst	\$20/hr	7hr/wk x 10wks	\$1,400
Project Manager Duties	\$32/hr	5hr/wk x 10wks	\$1,600
Project Manager as Analyst	\$26/hr	5hr/wk x 10wks	\$1,300
Management Subtotal			<u>\$5,050</u>
Analysis			
Two GIS Analysts	\$15/hr	Two people @ 10hr/wk x 10wks	<u>\$3,000</u>
Equipment			
Workstations	\$450 per Workstation	Four Stations	\$1,800
Software License	\$1,500	Four Copies	\$6,000
MISC(office supplies, domain, etc)			\$125
Equipment Subtotal			<u>\$7,925</u>
Total Costs			\$15,975

CONCLUSION

- Our Goal:
 - Create a basic GIS database
 - Find suitable habitats for the whooping crane
 - Creating digital data of current conservational easements
- How we will accomplish this:
 - People
 - GIS



**We Look Forward to
Assisting in the
Preservation of Texas
Through Our Results**

REFERENCES

- Allen, R.P. 1952. The Whooping crane. *National Audubon Society Resource*. (3) 246.
- Collins, M.G.; F.R Steiner and M.J. Rushman. 2001. Land-Use Suitability Analysis in the United States: Historical Development and Promising Technological Achievements. *Environmental Management*. 38(5): 611-621
- Cathey, K. 2007. Restoring the Whooping Crane Habitat in Texas. *Endangered Species Bulletin*. Fall 2007.
- Darnell, T.M & E.H. Smith. 2004. Avian Use of Natural and Created Salt Marsh in Texas. *Waterbirds: The International Journal of Waterbird Biology* (Sep.) 27(3): 355-361
- GBRT. 2007. Guadalupe Blanco River Trust, <http://www.gbrtrust.org>
- Lewis, James C. 1995. Whooping Crane (*Grus americana*), *The Birds of North America Online* (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/153> doi:10.2173/bna.153
- Malczewski, J., GIS-based land-use suitability analysis: a critical overview.2004.*Progress in Planning*. 62(1): 3-65. (<http://www.sciencedirect.com/science/article/pii/S0305900603000801>)
- NC Division of Coastal Management & NC Center for Geographic Information and Analysis. 2005. http://dcm2.enr.state.nc.us/planning/user_guide_lsa2005.pdf
- U.S. Fish and Wildlife Service Ecological Field Office. 1994. *Whooping Crane*. Austin

QUESTIONS

THANK YOU FOR YOUR ATTENTION