Texas Foundation for Identifying Species Habitats

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Jennifer DeForke – GIS Analyst, Web Master
Jesus Avillaneda – Project Assistant Manager
Pete Castillo – Project Manager

Introduction

Sara Bell

Fishes of Texas Project

- Project Contributors

Image from www.utexas.edu/tmm/tnhc/

Texas Natural History Collections

Image from www.tpwd.state.tx.us/

- Take scientific information for freshwater fish in Texas and combine into an easily accessible dataset for future use.
- Put information into MAXENT to determine occurrence probabilities and related information to establish an ecological niche model.

Our Role

- Take all data previously gathered and link it into one database.
- Take various attributes to make needed layers.
- Convert these layers into Raster files for MAXENT.

Scope

- 3 hydrologic regions across 8 states

Data/Analysis

Jennifer DeForke

Fishin' for data

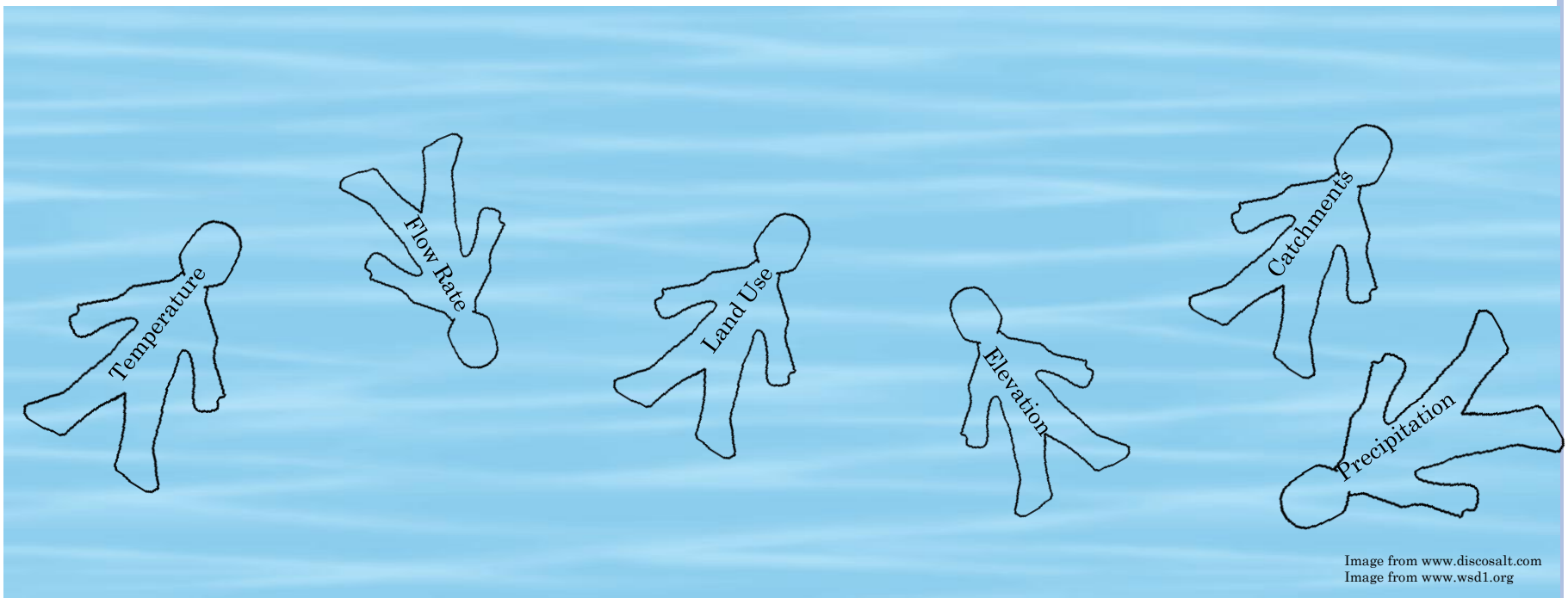
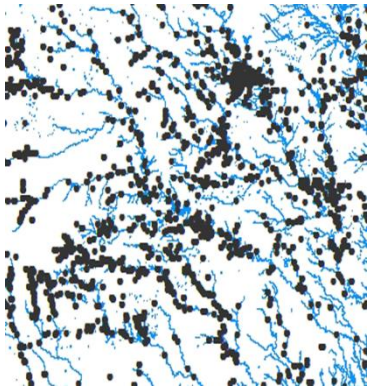


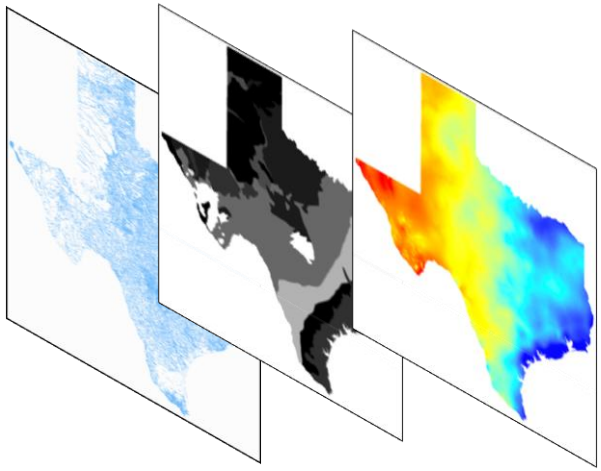
Image from www.discosalt.com
Image from www.wsd1.org

Occurrence Records

Environmental Data

Occurrence Probability





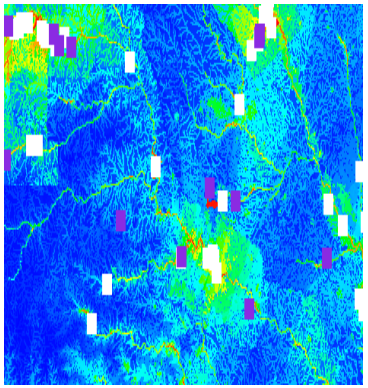


Image from Ben Labay's RFP

Data Sources:

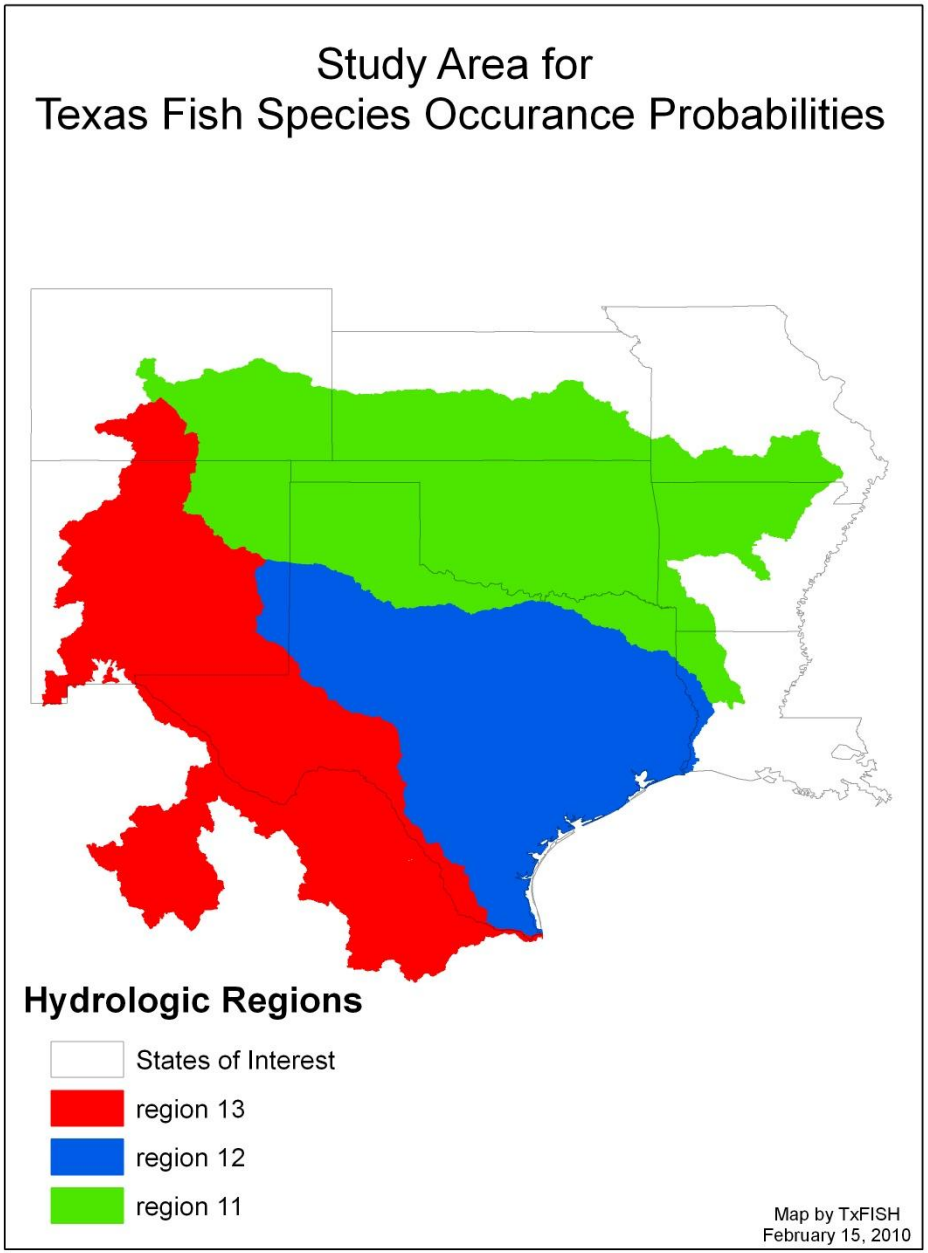
Species Occurrence

TEXAS NATURAL HISTORY COLLECTIONS (TNHC)

Environmental Data

WWW.HORIZON-SYSTEMS.COM/NHDPLUS/DATA.PHP

Images from texasflyers.org, dappercadaver.com, utexas.edu, horizon-systems.com


Study Area for
Texas Fish Species Occurance Probabilities
Hydrologic Regions
States of Interest
region 13
region 12
region 11
Map by TxFISH
February 15, 2010

Methodology/Implications

Jesus Avillaneda

Image from www.esri.ca/english/1066.asp

Methodology

- The three main regions of data Tx FISH collects will have to be merged into one database.
- Raster files will be created for each attribute of interest.
- Set up a geodatabase.
- Create Suitability Model or Species Occurrence Predictability Model for identified species.

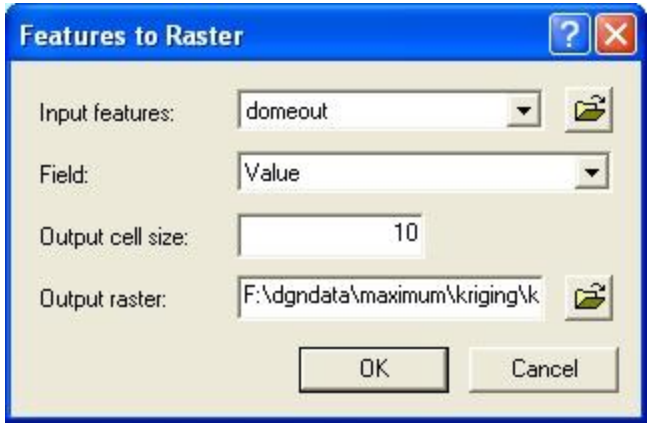


Image from www.geo.mtu.edu

Implications

Paddlefish

- Produce maps that will identify habitat suitability
- Allow better prediction of fish locations
- Allow better protection of endangered fish species

Comanche Springs Pupfish

San Marcos Gambusia

Fountain Darter

Images from www.tpwd.state.tx.us/

Budget/Timetable

Pete Castillo

Budget

Product/Service		Cost	Amount	Total
Analysis				
	Two GIS analysts	$20/hr	10hr/wk x 10wks	$4,000
Management				
	Assistant Manager duties	$27/hr	3hr/wk x 10wks	$810
	Asst. Mgr as GIS analyst	$20/hr	7hr/wk x 10wks	$1,400
	Project Manager duties	$30/hr	5hr/wk x 10wks	$1,500
	Project Mgr as GIS analyst	$20/hr	5hr/wk x 10wks	$1,000
Equipment				
	Computer Rental	$150/computer/wk	4 comp x 10 wks	$6,000
	Computer Supplies	$150/yearly	4 computers	$600
	Roll of paper for poster	$160	-	$160
Outsourced Services				
	Web Master	$35/hr	10hr/wk x 3 wks	$1,050
	Poster printing	$40	6 copies	$240
	Computer Maintenance	$200/computer/yrarly	4 computers	$800
Data				
	ArcInfo Software	$25,000/computer/12 mo	2.5 mo	$5,208
TOTAL COST				**$22,768**

Image from www.dudgetinsight.files.wordpress.com

Time Table

PROJECT TIMELINE										
Week 1	**Spring Break**	**Week 2**	**Week 3**	**Week 4**	**Week 5**	**Week 6**	**Week 7**	**Week 8**	**Week 9**	**Week 10**
Feb 28-Mar 6	Mar 7 – Mar 13	Mar 14-Mar 20	Mar 21-Mar 27	Mar 28-Apr 3	Apr 4-Apr 10	Apr 11-Apr 17	Apr 18-Apr 24	Apr 25-May1	May 2-May 8	May 9-May 15
Data Collection	Spring Break	Data Collection								
	Spring Break	Data Processing								
		Data Analysis/Interpretation								
						Quality Assurance				
							Website and Final Project Development			
										Final Project

Final Deliverables

- Detailed final report with maps
- Website of completed project
- Professional poster
- (2) CDs that contain:
  - All data
  - Metadata
  - Reports
  - Poster
  - Presentation
  - Readme file (how to use CD).

Conclusion

- Tx FISH will collect environmental data from NHDPlus for the study area and convert it to raster format.
- The raster data will then be compiled into a geodatabase, available to TNHC researchers who can easily access data needed to perform analyses.
- Tx FISH will provide a suitability model that will help forecast the impact hydrologic attributes may have on certain species.

Questions?