# TEXASVIEW
2019 - 2020

TEXASVIEW 2019 - 2020 ACTIVITIES

TexasView identifies the need to increase the number of undergraduate students who use remote sensing in an applied, project-oriented fashion. This High-Impact Activity (HIAs) addresses grant *objective 3: Promote research and remote sensing experience at the university undergraduate and graduate level to increase numbers and visibility of graduating students with employment skills in remote sensing.* Four member institutions participated this year; students imagery and field observations in diverse projects.

- **Analysis of Meander Bend Erosion along the Lower Neches River, TX** evaluated *channel migration and sediment transport* related to hurricanes
- **Techniques for Classifying Riparian Vegetation in Black Gap Wildlife Management Area (BGWMA)** evaluated mapping technology for *invasive species removal*
- **Investigating the Effects of Elevated Water Storage in the Occurrence of Extreme Monsoon Flooding** analyzed the *flood-prediction capabilities* of GRACE and GRACE-FO satellite data
- **Investigation of the effect of land cover on particulate matter during the COVID-19 shutdown in El Paso** analyzed the *changes in air quality* associated with the pandemic shut-down.
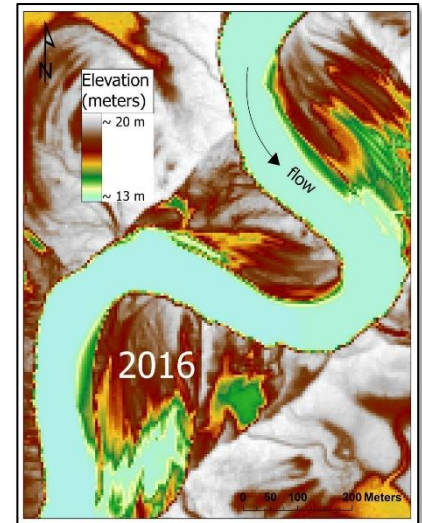
Digital Elevation Model (DEM) images support analysis of meander bend erosion with respect to channel migration and sediment transport during flood events.
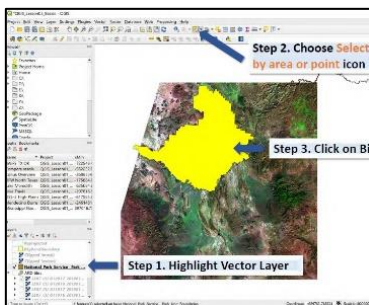
QGIS activities support image analysis.

Development of materials for and participation in training of professionals has been a sustained effort for TexasView. Co-PI Teresa Howard offered the **"Earth Observation with Satellite Remote Sensing"** at the Texas GIS Forum a two hands-on seminars to introduce GIS professionals to remote sensing software and methodologies using two different software tools - ArcGIS Pro and QGIS. Attendees included National- and State-level professionals and professionals from industry and academia. Workshop materials were shared with AmericaView members.

ESRI Story Map lessons support online teaching about hurricanes, and assessment of learning

Development of materials for and participation in training of educators continues. Workshops went virtual this year; a new workshop was designed to guide Earth and Environmental teachers at Middle and High School levels towards resources that enable them to easily integrate exciting satellite imagery, image-based animations, supporting videos, literature, and learning activities into curriculum. "**Integrating Satellite Imagery, Animations, and Videos into Your Curriculum: Developing a Portfolio of Resources and Topical Units**" offered resource elements from TexasView, NASA, the U.S. Geological Survey, NOAA and the U.S. Forest Service to form the foundation for a portfolio of teaching tools for classroom or distance teaching. Examples of topic-specific resource units were shared. Standards correlations were available for multiple subjects and grade levels.

BENEFITS TO TEXAS

- Support for student research has multiple benefits.
  - *"Being introduced to the actual process of creating a Digital Elevation Model provided insight into the field of GIS and allowed the me to gain hands-on technical skills, practice immense precision, and gain the ability to deduce situations."*

- Results benefit natural resource management in Texas and prepare students for diverse careers. Faculty research mentors gain case histories to use in teaching and recruiting.
  - *"Recent restoration projects on the Rio Grande in the Big Bend region of Texas have focused on the removal of non-native, undesirable vegetation through burning. This project focuses on techniques utilized by restoration teams to map the abundance of various vegetation and other land cover types."*

- Support for K-12 educators, particularly in finding resources for online teaching, was critical this year. Teaching units and resources will remain useful when classroom teaching resumes.
  - *"As an Earth/Space and Environmental Systems teacher grade 11/12, information/perspectives are VERY valuable. "*
  - *"Thank you so much for these amazing activities "*

- Training of professionals introduces them to new technologies, new data sources, and a new network of users within the geospatial community in Texas. Academic attendees can connect students within this professional network.

Burning invasive Arundon plants in the BGWMA.

My NASA Data Story Map lesson
"Volcanic Eruptions"

TEXASVIEW CONSORTIUM MEMBERSHIP

Established in 2002, the TexasView Remote Sensing Consortium consists of twelve university partners distributed across the state. Members include universities large and small, public and private. TexasView members work closely with state, regional and local agencies to promote remote sensing at all levels.

TexasView is founded on the concept of free and public exchange among its members of data, information and knowledge concerning the Earth and its processes, as observed by remote sensing and GIS technologies, for education, research, and local government applications.

Midwestern State University	The University of Texas at Austin	The University of North Texas	Sul Ross State University	Texas A&M	Texas Tech University
Stephen F. Austin University	Texas A&M at Corpus Christi	The University of Texas at El Paso	Texas State University	The University of Texas at San Antonio	University of Houston

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