Watching Over Texas From Space

An Earth Observations education resource for grades 4-12 in support of TEKS covering Earth Science and Environmental Science Standards
Developed by TexasView with support from Grant Number G14AP00002 from the Department of the Interior, United States Geological Survey to AmericaView

3.4.1 HOW IS TEXAS CHANGING HANDOUT LESSONS

3.4.1.1 HOW IS TEXAS CHANGING? TPWD

Instructions: On the following pages you will find scrambled pairs of images; you will match the before-and after images that show changes in the Texas landscape caused by natural events. Enter the correct matchups in the answer page following the images.

Types of change documented in the imagery show the effects of droughts, flooding, wildfires, erosion, and deposition as seen across the State of Texas, including imagery that covers Atlanta State Park, Bastrop State Park, Caprock Canyon State Park, Lake Arrowhead State Park, and Sea Rim State Park as well as Matagorda Bay (MB).
How is Texas Changing over time?

Match images that document change.

1. A clear blue lake shrinks, and lake bottom sediments are exposed.
   BEFORE  ________
   AFTER  ________

2. Heavy rains raise lake levels to flood numerous islands and fill a lake with sediment.
   BEFORE  ________
   AFTER  ________

3. Where erosion etches a deep canyon into a flat plateau, rains fill small lakes in farmland.
   BEFORE  ________
   AFTER  ________

4. A wildfire burns through forested hills and towns.
   BEFORE  ________
   AFTER  ________

5. Two streams enter and bay behind a barrier island; their deltas expand and merge. Where a third channel cuts through the barrier island, the coastline has retreated to the southwest and advanced to the northeast.
   BEFORE  ________
   AFTER  ________

6. A wildfire burns through coastal marsh grasslands; a road acted as a firebreak.
   BEFORE  ________
   AFTER  ________

All imagery captured from the Texas Watershed Viewer:
https://tpwd.maps.arcgis.com/apps/Viewer/index.html?appid=2b3604bf9ced441a98c500763b8b1048
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**3.4.1.2 HOW IS TEXAS CHANGING? NASA EO USGS ES**

**Instructions:** On the following pages you will find scrambled pairs of images; you will match the before-and after images that show changes in the Texas landscape caused by natural events. Enter the correct matchups in the answer page following the images.

Types of change documented in the imagery show the effects of flooding, wildfires, erosion, hurricanes, development, and oil exploration as seen across the State of Texas.
MATCH IT! CHANGES IN TEXAS OVER TIME

1. Farmland is flooded to develop a water reservoir; residential development follows.  
   (March 1974 – August 2013).  
   BEFORE ________  
   AFTER ________

2. Airport expands over cropland; residential and industrial development swells around edge  
   (March 1974 – August 2013).  
   BEFORE ________  
   AFTER ________

3. Wildfire burn in mountainous area expands dramatically and encircles a small city.  
   BEFORE ________  
   AFTER ________

   BEFORE ________  
   AFTER ________

5. Heavy rains/flooding carry sediment-laden water into coastal bays and the Gulf of Mexico  
   (October 15, 2004 – November 27, 2004)  
   BEFORE ________  
   AFTER ________

6. Turbulence & salty storm surge from Hurricane Ike destroy vegetation along Gulf of Mexico coastline.  
   BEFORE ________  
   AFTER ________

All EO imagery was captured from the Earth Observatory web site  
• NASA Earth Observatory - Home

All USGS Earthshots imagery was captured from  
• Earthshots | Earth Resources Observation and Science (EROS) Center (usgs.gov)