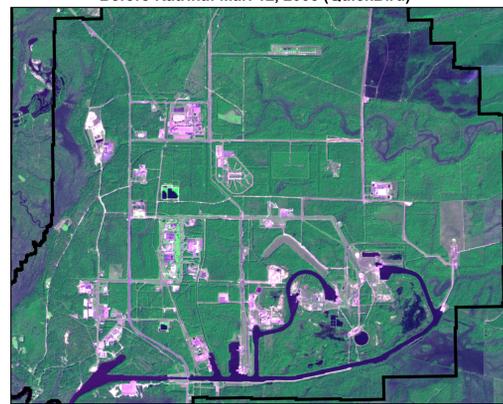


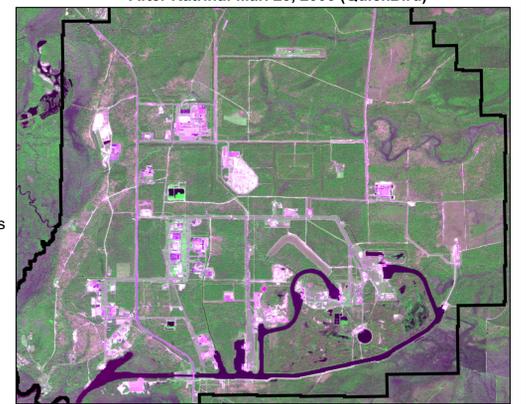
# VEGETATION CHANGE IN AND AROUND STENNIS SPACE CENTER: KATRINA & BEYOND



Before Katrina: Mar. 12, 2005 (QuickBird)



After Katrina: Mar. 23, 2006 (QuickBird)



## SSC FEE AREA VEGETATION CHANGE FROM MARCH 12, 2005 THROUGH MARCH 23, 2006

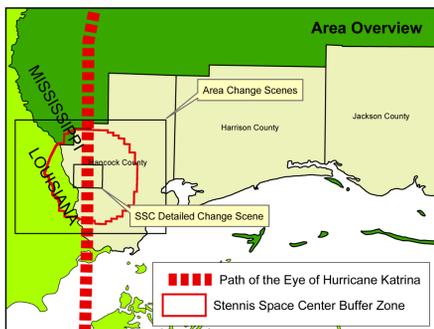
BASED ON 2.4 METER QUICKBIRD DATA  
1:12,000



The NASA Stennis Space Center (SSC) Applied Research and Technology Project Office (ARTPO) monitored vegetation condition in and around SSC for an extended period following Hurricane Katrina. This monitoring effort was conducted at multiple scales to capture and define significant events and trends. Particular attention was paid to monitoring the threat of wildfire.

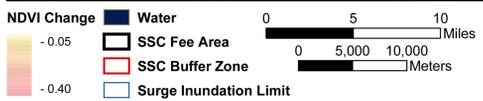
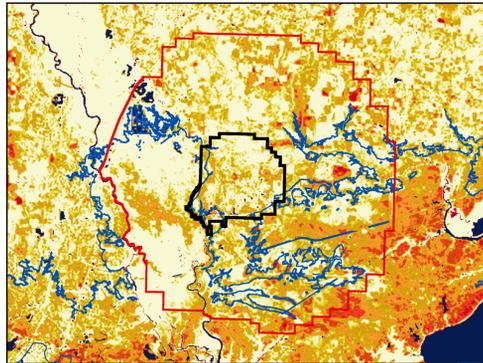
Applying a rapid prototyping approach, the ARTPO monitoring project initially identified several relevant Earth observation sensors and products. One key product identified was change detection with the normalized difference vegetation index (NDVI). Strong decrease in NDVI indicates important losses in vegetation.

*The main panel above shows the more significant NDVI reductions within the Stennis Fee Area from March 12, 2005 to March 23, 2006 (original images to the left and right respectively). Concentrated areas of NDVI reduction are mostly associated with managed stand reduction which reduced both live and dead fuel loads and improved the Center's risk posture.*



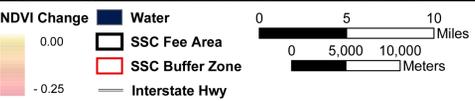
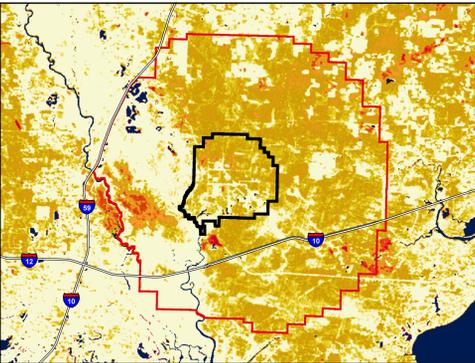
**Data Sources:**  
Satellite Imagery:  
DigitalGlobe, QuickBird  
\* March 23, 2006 (main image & center right panel)  
\* March 12, 2006 (center left panel)  
Indian Space Research Organization-GeoEye, Advanced Wide Field Sensor (AWIFS)  
\* January 16, 2005 (lower left NDVI difference)  
\* January 25, 2006 (lower left & lower middle NDVI differences)  
\* March 15, 2006 (lower middle NDVI difference)  
NASA, Moderate Resolution Imaging Spectroradiometer (MODIS) Terra satellite  
\* March 8, 2006 (lower right NDVI difference)  
\* March 23, 2006 (lower right NDVI difference)  
Storm Track: NOAA National Weather Service

Interannual NDVI Loss: Jan. 16, 2005 to Jan. 25, 2006 (AWIFS)



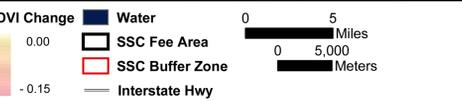
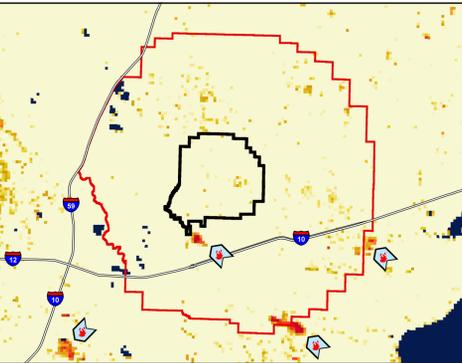
The Advanced Wide Field Sensor (AWIFS) with a 56-m resolution and a 5-day revisit time was one of the Landsat-class sensors used to delineate regional trends. This NDVI difference from Jan. 2005 to Jan. 2006 shows widespread regional forest losses due to Katrina with acute loss in the area subject to storm surge.

Seasonal NDVI Loss: Jan. 25, 2006 to Mar. 15, 2006 (AWIFS)



An AWIFS NDVI difference from Jan. 25, 2006 to Mar. 15, 2006 revealed the effects of a drought. Pine forests show moderate NDVI reduction regionally. More extreme NDVI losses were principally due to wildfires and logging. One special case just west of the Stennis Fee Area may be either natural vegetation die-back or continuing aftereffects of Hurricane Katrina.

Rapid NDVI Loss: Mar. 8, 2006 to Mar. 23, 2006 (MODIS)



One to two day revisit time allows the NASA MODIS sensor to capture sudden vegetation losses and separate them from more gradual natural and human-induced change. The 16-day MODIS NDVI difference above highlights several March 2006 fires in and near the Stennis Buffer Zone, one near the south entrance of the Center.

## VEGETATION LOSS IN SSC BUFFER ZONE AND SURROUNDING REGION