

Climate Change Adaptation Science Activities at NASA Johnson Space Center

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The Johnson Space Center (JSC), located in the southeast metropolitan region of Houston, TX is the prime NASA center for human spaceflight operations and astronaut training, but it also houses the unique collection of returned extraterrestrial samples, including lunar samples from the Apollo missions. The Center's location adjacent to Clear Lake and the Clear Creek watershed, an estuary of Galveston Bay, puts it at direct annual risk from hurricanes, but also from a number of other climate-related hazards including drought, floods, sea level rise, heat waves, and high wind events—all assigned Threat Levels of 2 or 3 in the most recent NASA Center Disaster/Risk Matrix produced by the Climate Adaptation Science Investigator Working Group.

Based on prior CASI workshops at other NASA centers, it is recognized that JSC is highly vulnerable to climate-change related hazards and has a need for adaptation strategies. We will present an overview of prior CASI-related work at JSC, including publication of a climate change and adaptation informational data brochure, and a Resilience and Adaptation to Climate Risks Workshop that was held at JSC in early March 2012. Major outcomes of that workshop that form a basis for work going forward are 1) a realization that JSC is embedded in a regional environmental and social context, and that potential climate change effects and adaptation strategies will not, and should not, be constrained by the Center fence line; 2) a desire to coordinate data collection and adaptation planning activities with interested stakeholders to form a “regional climate change adaptation center” that could facilitate interaction with CASI; 3) recognition that there is a wide array of basic data (remotely sensed, in situ, GIS/mapping, and historical) available through JSC and other stakeholders, but this data is not yet centrally accessible for planning purposes.