Dissemination of Earth Remote Sensing Data for use in the NOAA/NWS Damage Assessment Toolkit

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The National Weather Service has developed the Damage Assessment Toolkit (DAT), an application for smartphones and tablets that allows for the collection, geolocation, and aggregation of various damage indicators that are collected during storm surveys. The DAT supports the often labor-intensive process where meteorologists venture into the storm-affected area, allowing them to acquire geotagged photos of the observed damage while also assigning estimated EF-scale categories based upon their observations. Once the data are collected, the DAT infrastructure aggregates the observations into a server that allows other meteorologists to perform quality control and other analysis steps before completing their survey and making the resulting data available to the public. In addition to in-person observations, Earth remote sensing from operational, polar-orbiting satellites can support the damage assessment process by identifying portions of damage tracks that may be missed due to road limitations, access to private property, or time constraints. Products resulting from change detection techniques can identify damage to vegetation and the land surface, aiding in the survey process. In addition, higher resolution commercial imagery can corroborate ground-based surveys by examining higher-resolution commercial imagery.

As part of an ongoing collaboration, NASA and NOAA are working to integrate near real-time Earth remote sensing observations into the NOAA/NWS Damage Assessment Toolkit. This presentation will highlight recent developments in a streamlined approach for disseminating Earth remote sensing data via web mapping services and a new menu interface that has been integrated within the DAT. A review of current and future products will be provided, including products derived from MODIS and VIIRS for preliminary track identification, along with conduits for higher-resolution Landsat, ASTER, and commercial imagery as they become available. In addition to tornado damage assessments, the team is also investigating the use of near real-time imagery for identifying hail damage to vegetation, which also results in large swaths of damage, particularly in the central United States during the peak growing season months of June, July, and August. This presentation will present an overview of recent activities, challenges and successes, best practices, and opportunities for future work and collaboration.