**Session Title:** H22F. Remote Sensing Applications for Water Resources Management, Including Droughts, Floods, and Associated Water Cycle Extremes II
**Day/Time:** Tuesday, 12 December 2017: 10:20 - 12:20, Morial, 291-292
**Abstract Title:** Satellite-based Drought Reporting on the Navajo Nation
**Presentation Type:** Oral
**Final Paper Number:** H22F-02

**Authors:** Amber McCullum[1], Cynthia Schmidt[1], Vickie Ly[2], Rachel Green[1], Carlee McClellan[3]
*1. Bay Area Environmental Research Institute, 2. University of Washington, 3. Navajo Nation Department of Water Resources*

**Abstract:** The Navajo Nation (NN) is the largest reservation in the US, and faces challenges related to water management during long-term and widespread drought episodes. The Navajo Nation is a federally recognized tribe, which has boundaries within Arizona, New Mexico, and Utah. The Navajo Nation has a land area of over 70,000 square kilometers. The Navajo Nation Department of Water Resources (NNDWR) reports on drought and climatic conditions through the use of regional Standardized Precipitation Index (SPI) values and a network of in-situ rainfall, streamflow, and climate data. However, these data sources lack the spatial detail and consistent measurements needed to provide a coherent understanding of the drought regime within the Nation's regional boundaries. This project, as part of NASA's Western Water Applications Office (WWAO), improves upon the recently developed Drought Severity Assessment Tool (DSAT) to ingest satellite-based precipitation data to generate SPI values for specific administrative boundaries within the reservation. The tool aims to: (1) generate SPI values and summary statistics for regions of interest on various timescales, (2) to visualize SPI values within a web-map application, and (3) produce maps and comparative statistical outputs in the format required for annual drought reporting. The co-development of the DSAT with NN partners is integral to increasing the sustained use of Earth Observations for water management applications. This tool will provide data to support the NN in allocation of drought contingency dollars to the regions most adversely impacted by declines in water availability.