Beyond the Streamgage

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Abstract. Since 1889, the U.S. Geological Survey (USGS) has been monitoring the streamflow of the United States to assist and ensure proper water resources management. In South Carolina, the USGS has operated monitoring stations (streamgages) since the late 19th century. (Station 02169000, Catawba River near Rock Hill, SC, has been in operation since October 1895.) In cooperation with more than 40 Federal, State, and local agencies, the USGS South Carolina Water Science Center currently (2014) operates more than 200 continuous real-time monitoring stations across the state. In the 1980's, the USGS in South Carolina pioneered the use of satellite telemetry to provide hydrologic data from the streamgage to the public in real time. The implementation of real-time monitoring has led to the development of a vast array of analytical and visualization tools available to all data users through the USGS's National Water Information System Web Interface (NWISWeb) as well as other analysis portals. Additionally, because of advancements in technology, new hydrologic investigations are being conducted that take the traditional streamgaging network to the "next level." This presentation will provide an overview of the USGS analytical and visualization tools available through NWISWeb, and discuss how the USGS is implementing the use of new technology to expand hydrologic monitoring and investigations beyond the streamgage. The overview will include: (1) StreamStats, a web-based geographic information system application for the computation of streamflow statistics in South Carolina; (2) Flood Inundation Mapping (FIM), a real-time operational tool that visually relates USGS streamgage readings and National Weather Service forecasts to flood risk for the primary purpose of public safety; and (3) the integration and deployment of an acoustic fish tracking system with the existing real-time streamflow monitoring network for the purpose of monitoring the presence and migratory habits of Atlantic and Shortnose Sturgeon.