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## **Utility of AGWA in NRCS Rapid Watershed Assessments**

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### **Abstract Text:**

Rapid watershed assessments are part of United States Department of Agriculture, Natural Resource Conservation Service's strategy for watershed-scale conservation, which involves identifying resource conditions in rural America. Assessments are conducted using fourth level hydrologic unit (HU) boundaries as a rule to narrow the scope. The concept behind conducting these assessments is to use readily available data and information to identify resource needs in agricultural settings. The various stakeholders within the HUs participate in the needs assessment. Pollutant loading is a concern in most watersheds. Typically assessments at the watershed scale use surface-water hydrologic models which are often complex and time intensive to set up and use. Geospatial tools and readily-available digital sources can expedite the watershed modeling process and provide added value by identifying qualitative baseline levels of the spatial extent and magnitude of pollutant loading. One such tool being evaluated is AGWA (Automated Geospatial Watershed Assessment), a hydrologic modeling tool that was developed to utilize nationally available spatial data sets and both continuous-simulation (Soil & Water Assessment Tool, SWAT) and event-based (Kinematic Runoff and Erosion Model, KINEROS2) distributed hydrologic models (see: [www.tucson.ars.ag.gov/agwa](http://www.tucson.ars.ag.gov/agwa)). Through an intuitive interface the user selects an outlet from which AGWA delineates and discretizes the watershed using a Digital Elevation Model (DEM). The watershed model elements are then intersected with soils and land-cover data layers to derive estimates of the requisite model input parameters. The chosen model is then run, and the results are imported back into AGWA for graphical display. The model provides watershed groups and program managers map-based resource analysis information to assist in management decisions. An overview of AGWA and an application of it to a Natural Resource Conservation Service rapid watershed assessment effort in Missouri are discussed herein.

### **Impact Statement:**

Utilizing the AGWA2 model while conducting Rapid Watershed Assessments adds value to the process by identifying variations in sheet and rill erosion as well as channel erosion on a watershed scale. Water quality impacts are linked to these variations in erosion.