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A GIS Foundation of Agricultural Water Planning in Georgia

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Abstract:

Unprecedented drought conditions and statewide water planning initiatives have increased scrutiny over all types of water use in Georgia. Since the middle 1980s the state of Georgia has required that all water withdrawals totaling more than 100,000 gallons per day be registered with the Department of Natural Resources. In 2004, the Georgia Legislature required that all 21,000 agricultural water withdrawal permits be metered with the intension of monitoring use by annual meter readings. Using modified GPS units and software, remote check-in procedures and web-based data management, Albany State University (ASU) personnel field verified all background information such as wetted acreage, soil type and crops to supplement water usage data collected by water meters installed by the Soil and Water Conservation Commission. The Georgia Farmer Portal, developed by the ASU Flint River Water Policy Center, provides free web based tools allowing event specific reporting of rainfall, crop plant and harvest dates, irrigation depths and other information. Utilizing annually updated aerial imagery in conjunction with an extensive GIS database, farmers can manage their information via visible, geographic locations such as meter locations or individual fields providing a total picture of irrigation and crop practices throughout the year. Data can be presented to farmers in terms of their yield and water use in comparison to averages in pre-determined areas such as county, basin or state. Reports can be generated on the basis of crop, soil type, tillage system, seed type and others. The Portal also collects valuable information that can provide local, regional and state irrigation and crop data on common geographic divisions necessary for informed policy decisions. The information collected can further be applied to the documentation of 'reasonable use' for individual farmers and in support of intra/interstate issues relating to water allocation.

Impact Statement:

Development of a comprehensive database for managing agricultural water use in Georgia.

Category: Conservation and Resource Management
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