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HR: 0800h
AN: **C21A-0497**
TI: A Modeling Framework for Improved Agricultural Water Supply Forecasting
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AB: The National Water and Climate Center (NWCC) of the USDA Natural Resources Conservation Service is moving to augment seasonal, regression-equation based water supply forecasts with distributed-parameter, physical process models enabling daily, weekly, and seasonal forecasting using an Ensemble Streamflow Prediction (ESP) methodology. This effort involves the development and implementation of a modeling framework, and associated models and tools, to provide timely forecasts for use by the agricultural

community in the western United States where snowmelt is a major source of water supply. The framework selected to support this integration is the USDA Object Modeling System (OMS). OMS is a Java-based modular modeling framework for model development, testing, and deployment. It consists of a library of stand-alone science, control, and database components (modules), and a means to assemble selected components into a modeling package that is customized to the problem, data constraints, and scale of application. The framework is supported by utility modules that provide a variety of data management, land unit delineation and parameterization, sensitivity analysis, calibration, statistical analysis, and visualization capabilities. OMS uses an open source software approach to enable all members of the scientific community to collaboratively work on addressing the many complex issues associated with the design, development, and application of distributed hydrological and environmental models. A long-term goal in the development of these water-supply forecasting capabilities is the implementation of an ensemble modeling approach. This would provide forecasts using the results of multiple hydrologic models run on each basin.

DE: 0740 Snowmelt
DE: 0798 Modeling
SC: Cryosphere [C]
MN: 2008 Fall Meeting

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