

Accessing and sharing data using CUAHSI Water Data Services

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Abstract The Hydrologic Information System (HIS) project of the Consortium of Universities for the Advancement of Hydrologic Science, Inc (CUAHSI) has developed Water Data Services (WDS) using a services-oriented architecture. The underlying technological developments include WaterML, an XML-based language for transmission of time-series data, and WaterOneFlow, a set of web services that can provide access to data and metadata using standard web protocols. These technologies form the basis for an easy-to-use data publication system. WDS also includes a registration service for published web services and maintains a metadata catalogue of all services. An ontology of hydrological concepts is included as part of this central service to enable variables to be mapped to a common set of concepts. A map-based discovery tool, Hydroseek (<http://www.hydroseek.net/>), has been developed using the ontology and metadata catalogue. CUAHSI has been working with US government agencies, such as the US Geological Survey, on providing access to their data holdings using web services and transmitting data using WaterML. Metadata from these agencies has been included in the central metadata catalogue, thereby enabling seamless access to both government and academic environmental data. CUAHSI WDS is an open system in which any group or government agency around the world can participate. All software is freely available at <http://his.cuahsi.org>.

Key words CUAHSI Water Data Services; data publication; time series; web services; WaterML; ontology