Category: Geographic Information Systems/Water Resources

Arc Hydro

GIS for Water Resources

Geographic information system (GIS) technology has been used for many years to develop solutions to water resource problems—assessing water quality, determining water availability, preventing flooding, understanding the natural environment, and managing water resources on a local or regional scale. The development of ESRI® ArcGIS™ software created an opportunity to design a new way of representing water resources data. The result is Arc Hydro.

Developed by leaders from industry, government, and academia, Arc Hydro is a data structure that links hydrologic data to water resources modeling and decision-making methods. Now hydrologic water resource models and information systems can be more closely integrated with GIS.

This book presents Arc Hydro concepts, components, and applications. It describes how to

- Create hydro networks of rivers and streams
- Define drainage areas linked via relationships to a hydro network
- Represent channel shape using three-dimensional models
- Connect geospatial features to time series measurements recorded at gaging sites.

Hydrologic data is becoming available to model an ever-increasing portion of the world's water features at the same time that the ease of use of the technology is attracting professionals other than hydrologists. The Arc Hydro model provides a standardized way of describing this data so that it can be used consistently and efficiently to solve water resource problems at any spatial scale. *Arc Hydro: GIS for Water Resources* is both a blueprint of the model itself, and the definitive overview of GIS in hydrology from the leading expert in the field.

The CD-ROM included with this book contains instructions to help you start using Arc Hydro, plus a set of tools that populate the attributes of the features in the data framework, interconnect features in different data layers, support hydrologic analysis, and more. The CD also includes slide show resources for teachers and sample data from the Guadalupe River basin in Texas on which you can apply the tools.

David R. Maidment is the world's leading authority on water resources and GIS. He is director of the Center for Research in Water Resources at the University of Texas at Austin and editor of *Handbook of Hydrology* and *Hydrologic and Hydraulic Modeling Support with Geographic Information Systems.*

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