

Arc Hydro: GIS for Water Resources

Why Arc Hydro?

Water resource managers use geographic information system (GIS) technology to visualize and analyze hydrology data for tasks such as assessing water quality, estimating water availability, planning flood prevention, understanding the natural environment, and managing water resources.

Arc Hydro is the starting point for water resource analyses with Esri® ArcGIS® software. Download free Arc Hydro data models and tools via the Hydro Resource Center link at esri.com/waterresources.

What is Arc Hydro?

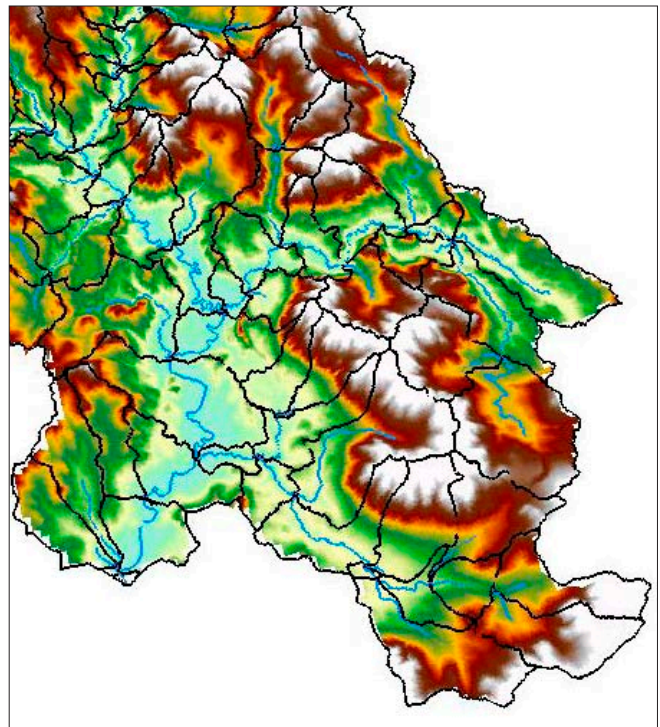
A Template Data Model for Water Resources

Developed by leaders from industry, government, and academia, Arc Hydro is a data structure that links hydrologic data to water resource modeling and decision-making methods. Using Arc Hydro helps you build a dataset that can be integrated with water resource models. The Arc Hydro data model standardizes water data structures so that data can be used consistently and efficiently to solve water resource problems at any spatial scale. It gives you a starting point for building your own data model and integrates with the Arc Hydro tools.

A Set of Tools to Support Water Resource Analyses

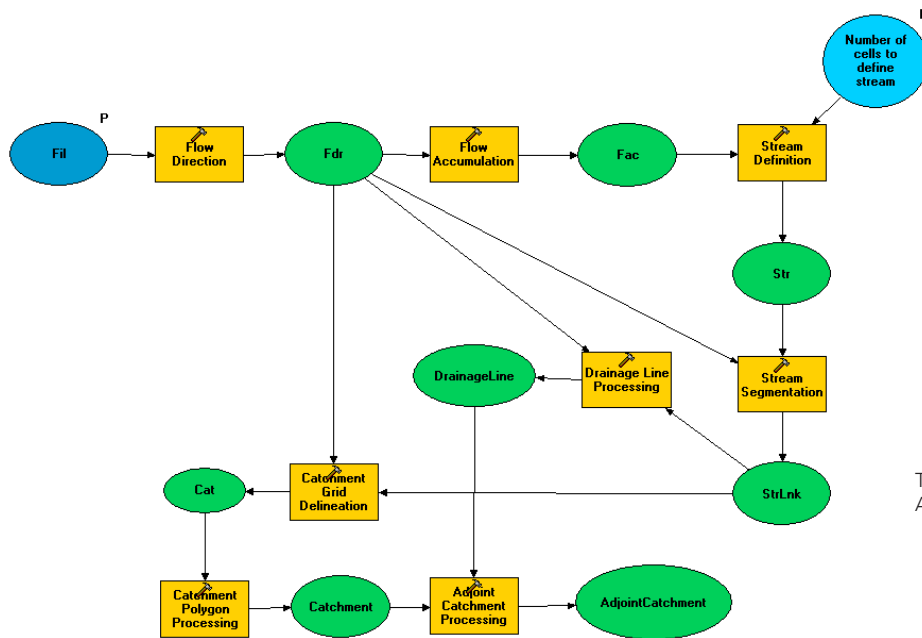
The Arc Hydro data model is complemented by a set of tools for building Arc Hydro-compliant datasets and running the data model. Arc Hydro tools work within ArcGIS Desktop, but some also require the ArcGIS Spatial Analyst extension. Use Arc Hydro tools to

- Generate and populate an Arc Hydro geodatabase from vector and raster data sources.
- Establish relationships between core feature classes.
- Apply geometric networks for upstream and downstream tracing.
- Perform advanced water resource functions (e.g., watershed delineation and characterization).
- Develop node-link hydro schema.
- Use an XML data exchange framework for data integration with external models.



Visualization of a Watershed Model Created Using the Arc Hydro Data Structure and Tools

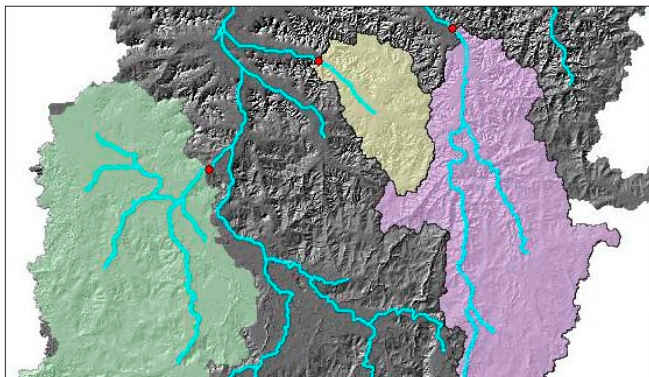
Arc Hydro offers toolbars, menus, and geoprocessing tools to create an integrated environment in ArcGIS. You can string together standard ArcGIS and Arc Hydro geoprocessing tools to build your own water resource geoprocessing models.



Terrain Processing Workflow Using Arc Hydro Tools in ModelBuilder™

What can you do with Arc Hydro?

- Create basemaps and GIS data that support your simulations and use hydrologic (soil type, land use, vegetation), topographic (area, slope), and topologic (relationship, network) information.
- Incorporate man-made structures into stream networks to develop an integrated data and flow modeling environment.
- Inspect your data to reveal flow conditions that might be overlooked (e.g., slope or soil changes).
- Integrate spatial and temporal data.
- Develop data inputs for external hydrologic and hydraulic models.
- Display your simulation results on a map.



Water resources GIS data is stored in layers that can be selectively displayed to model a real-world watershed. This image displays four layers: shaded relief, watersheds, drainage lines, and watershed points.

How can you get started?

Download Arc Hydro data models and tools from the Hydro Resource Center link at esri.com/waterresources. From this resource center, you can also access the water resources/Arc Hydro discussion forums. You can also attend the instructor-led training courses *Arc Hydro: GIS in Water Resources* and *Hydraulic and Hydrologic Analyses Using ArcGIS* to get started or sharpen your Arc Hydro skills in a classroom environment. Find more training information at training.esri.com.

The Esri Professional Services water resources team can help you jump-start your Arc Hydro GIS implementation.

- Develop and deliver custom Arc Hydro training.
- Leverage your data and quickly mobilize it in Arc Hydro.
- Design and develop Arc Hydro and custom solutions.

Send inquiries to archydro@esri.com.

Find Esri water solutions at esri.com/waterresources

