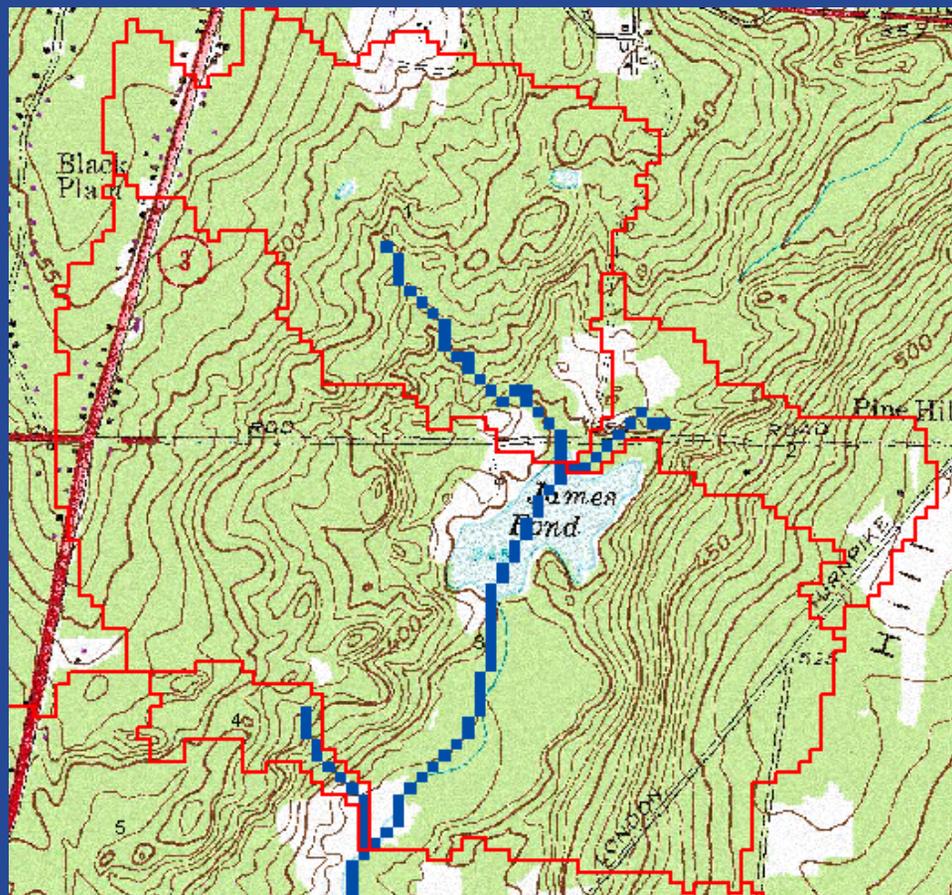


H and H GIS Applications Work Group



Presented by William Merkel

USDA-NRCS

Purposes of Work Group

- Provide a forum for information exchange
- Provide learning opportunities
- Develop a list of web links to GIS applications
- Provide a forum to express needs for GIS applications

Subcommittee on Hydrology



PURPOSE

Improve the availability and reliability of surface-water quantity information needed for hazard mitigation, water supply and demand management, and environmental protection.

CURRENT ACTIVITY

 [Membership](#)

 [Minutes](#)

 [Meetings - Conferences - Workshops](#)

 [Products](#)

- [Newsletter](#) - December 2007 (PDF 341KB)
- [Publications](#)

WORK GROUPS

 [Hydrologic Frequency Analysis Work Group](#)

 [Satellite Telemetry Interagency Work Group](#)

 [Hydrologic Modeling Work Group](#)

 [Hydrologic and Hydraulic GIS Applications Work Group](#) 

Web site location



<http://acwi.gov/hydrology/h2gisa/index.html>

Work Group web page

Subcommittee on Hydrology, Hydrologic and Hydraulic GIS Applications Work Group (H2GISAWG)

 [Membership](#)

 [History](#)

 [Charge for the Hydrologic and Hydraulic GIS Applications Work Group](#) (PDF 26KB) 

 [Minutes](#)

 [Information](#)

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Service

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Teleconference minutes are posted

Subcommittee on Hydrology -- Hydrologic and Hydraulic GIS Applications Work Group Minutes

YEAR 2008

 [March 5, 2008](#) (PDF 20KB) **NEW**

 [January 7, 2008](#) (PDF 21KB)

- [Automated Geospatial Watershed Assessment \(AGWA\) GIS Fact Sheet](#)

YEAR 2007

 [November 5, 2007](#) (PDF 18 KB)

 [September 26, 2007](#) (PDF 20 Kb)

- [NRCS Geo-Hydro ArcGIS Fact Sheet](#)

 [Return to Subcommittee on Hydrology Home page](#) and

 Return to [Hydrologic and Hydraulic GIS Applications Work Group](#) (H2GISA) home

Sample Fact Sheet



The Automated Geospatial Watershed Assessment Tool

EPA/600/C-06/001
ARS/137460

A GIS-Based Hydrologic Modeling Tool

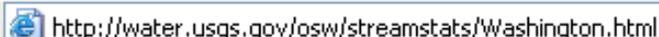


EPA



Key words: watershed assessment; hydrologic model; runoff; erosion; geographic information systems

USGS StreamStats

 http://water.usgs.gov/osw/streamstats/Washington.html



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Washington

Two reports document the regression equations available in StreamStats for Washington, the errors associated with the estimates, and the methods used to develop the equations and to measure the basin characteristics used in the equations. Users should familiarize themselves with these reports before using StreamStats to obtain estimates of streamflow statistics for ungaged sites.

- Knowles, S.M. and Sumioka, S.S., [2001, The National Flood-Frequency Program—Methods for Estimating Flood Magnitude and Frequency in Washington, 2001](#): U.S. Geological Survey Fact Sheet FS-016-01, 4 p.
- Sumioka, S.S., Kresch, D.L., and Kasnick, K.D., 1998, [Magnitude and Frequency of Floods in Washington](#): U.S. Geological Survey Water-Resources Investigations Report 97-4277, 91 p.

[Interactive Map](#)

US EPA BASINS

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BASINS is a multi-purpose environmental analysis system that integrates a geographical information system (GIS), national watershed data, and state-of-the-art environmental assessment and modeling tools into one convenient package.



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- [Training](#)—live classes and downloadable lectures and exercises.
- [Email listserv](#) acts as a forum for discussion and technical support. Join the Listserv or search the archives.
- [Other Tools, Utilities, & Features](#) to be used with basins.
- [Metadata](#) describing the content, quality, condition and other characteristics of environmental data.
- [Related Links](#) within and outside EPA.

[Water Science and Technology](#) | [Water Quality Standards](#) | [Water Quality Criteria](#)

http://www.hec.usace.army.mil/software/hecras/hec-georas.html



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HEC-GeoRAS

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HEC-GeoRAS is a set of procedures, tools, and utilities for processing geospatial data in ArcGIS using a graphical user interface (GUI). The interface allows the preparation of geometric data for import into HEC-RAS and processes simulation results exported from HEC-RAS. To create the



import file, the user must have an existing digital terrain model (DTM) of the river system in the ArcInfo TIN format. The user creates a series of line themes pertinent to developing geometric data for HEC-RAS. The themes created are the Stream Centerline, Flow Path Centerlines (*optional*), Main Channel Banks (*optional*), and Cross Section Cut Lines referred to as the *RAS Themes*.

Additional RAS Themes may be created/used to extract additional geometric data for import in HEC-RAS. These themes include Land Use, Levee Alignment, Ineffective Flow Areas, and Storage Areas.

Water surface profile data and velocity data exported from HEC-RAS simulations may be processed by HEC-GeoRAS for GIS

analysis for floodplain mapping, flood damage computations, ecosystem restoration, and flood warning response and preparedness.

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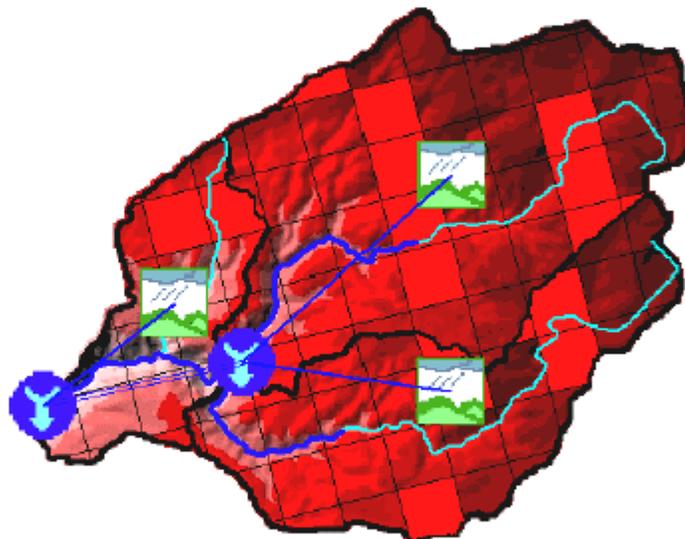
http://www.hec.usace.army.mil/software/hec-geohms/index.html



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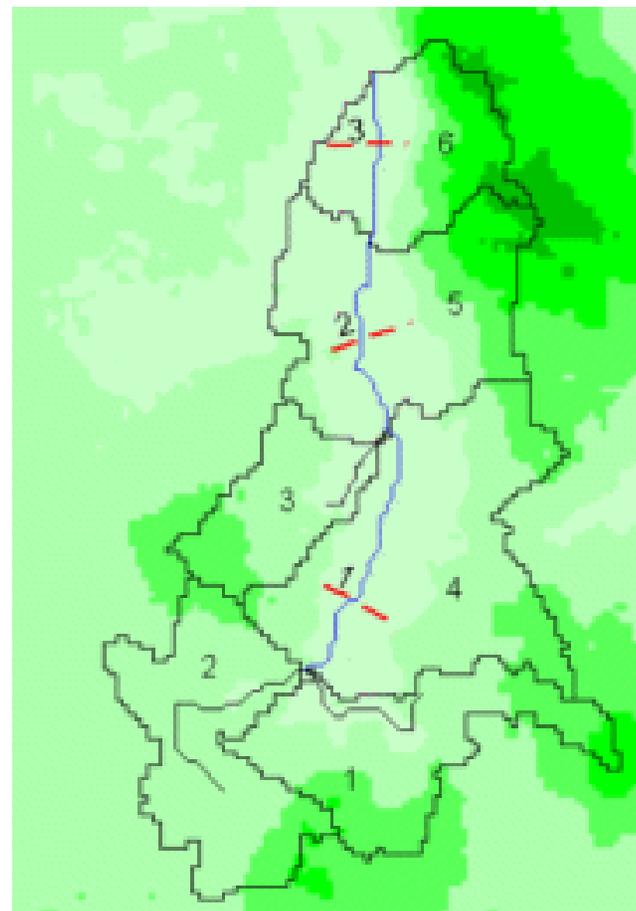


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The Geospatial Hydrologic Modeling Extension (HEC-GeoHMS) is a software package for use with the ArcView Geographic Information System. GeoHMS uses ArcView and Spatial Analyst to develop a number of hydrologic modeling inputs. Analyzing digital terrain information, HEC-GeoHMS transforms the drainage paths and watershed boundaries into a hydrologic data structure that represents the watershed response to precipitation. In addition to the hydrologic data structure, capabilities include the development of grid-based data for linear quasi-distributed runoff transformation (ModClark), the HEC-HMS basin model, physical watershed and stream characteristics, and background map file.

Hydraulics and Hydrology Tools and Models - NRCS Geo-Hydro

NRCS Geo-Hydro is an ArcView GIS interface to the WinTR-20 hydrologic model. It operates with ESRI ArcView 3.3 and the Spatial Analyst extension. The interface is organized to complete the steps required to do a WinTR-20 hydrologic analysis. Using tools and menu selections, the user is guided step by step through the automated processes of defining the watershed boundary, dividing the watershed into sub-areas, developing cross sections, etc. The end result is a WinTR-20 execution with peak discharges, hydrographs, etc. Basic familiarity with NRCS hydrologic procedures and ArcView operations are helpful.



Current and future activities

- Next teleconference April 24, 2008
- Demonstrate GIS applications
- Distribute questionnaire to federal agencies and others.
- Develop page with web links to major applications.

Questions ?