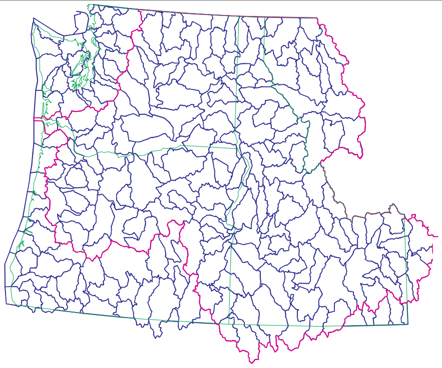

BONNEVILLE POWER ADMINISTRATION
GIS
GEOGRAPHIC INFORMATION SYSTEM

U.S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Pacific Northwest 100K-scale River Reach Files

Overview

The U.S. Geological Survey (USGS) in cooperation with Federal and State agencies, and the NW Indian Tribes has produced 100K-scale River Reach Files for the Pacific Northwest that will serve many local and regional water-resource management applications. The Pacific Northwest (PNW) River Reach Files, 323 in total, are a geo-referenced river reach data layer encompassing the Columbia River Basin within the conterminous United States, the coasts of Oregon and Washington, the Puget Sound and the Bear Lake Basin in Southeastern Idaho. They are tagged with the U.S. Environmental Protection Agency (USEPA) RF2.5 reach codes which are an integral hydrologic component in state-level and regional-level Rivers Information Systems. Development of the PNW Reach Files constitutes a fifteen-fold refinement in the resolution of hydrologic data from the original USEPA Files and other reach based information systems such as the Northwest Environmental Database (NED). In combination with the Rivers Information System and NED the PNW Reach Files should constitute an advanced and comprehensive rivers resource system.

Reach File Structure

The PNW River Reach Files were constructed using ARC/INFO, a Geographic Information System (GIS) developed by ESRI, Redlands, California. Each File is an individual USGS hydrologic catalog unit (HUC) that is composed of a linked network of stream reaches in which information can be extracted from a single reach, portion of the stream network or for an entire region.

Each reach contains the following information:

- a unique but stable identifier constructed as a 17 character string, comprised of the eight digit HUC code, a four-digit segment number and a five-digit river marker.
- spatial reference information to state, county, 100K-scale and 24K-scale quad names.
- hydrologic components such as reach length, sinuosity and NMD feature descriptor codes
- Feature name, derived from the Geographic Names data base, EPA Reach Files and other sources.
- Source identifier

Network reaches have downstream direction and upstream-downstream linkage information generated from routing algorithms.

These linkage items were provided for non-GIS users who may want to migrate mainstem reaches using only the tabular reach attribute files.

Water body coverage

Water body features such as lakes, ponds, reservoirs, and defined wetlands and linear features such as double- banked streams and dams were moved to a separate coverage and replaced in the Reach File with centerlines and connector arcs to tributaries. These features were not given a reach identifier but are useful for areal analysis and graphic purposes.

Intended use of the data

Many different types of GIS tools or analysis can be performed on the PNW Reach Files. These might include:

- buffering around reaches
- stream network routing
- individual basin characteristics analysis
- environmental assessments at a multi-basin level
- dynamic segmentation.

Documentation

Each PNW Reach File and water body coverage comes with a set of metadata files that attempt to comply with the Federal Geographic Data Committee approved content standards for geospatial data. These metadata files describe background, content, quality, spatial reference and data dictionary information. They come as a set of 'extended' files, which means they will accompany the reach file through import and export translations. These files include:

1) a narrative file (.NAR) that provides a brief history of the PNW River Reach project and summarizes the process steps that were used in their development, attribute and template definitions.

2) a descriptive documentation file (.DOC) which contains coverage characteristics unique to that particular reach file, spatial reference information, and related publications and coverage citations.

3) an attribute description file (.ATT) that contains the entity types and their item definitions.

These metadata files were generated using the USGS DOCUMENT.AML

Browsing Descriptors

Listed below are key words that could be searched on during free-form browser query: River Reach File, Hydrography, Catalog Unit, Hydrologic Unit, 100

How to obtain copies of the PNW Reach Files

Currently the PNW Reach Files are being distributed by the USGS WRD in Portland, OR. The contact person is Bruce Fisher. His e-mail address is bjfisher@usgs.gov.

Users who have access to a World Wide Web (WWW) browser can get additional information about the PNW River Reach project through the USGS Oregon District homepage.

The URL is
http://wwworegon/projs_dir/pn379/pn379.html