GIS Resources

There is a great deal of spatial information available from a wide range of sources for the Bear River problemshed region. A significant proportion of this data can be accessed for free via the internet using federal and state Government sources, such as the U.S. Geospatial Data One-Stop (http://www.geo-one-stop.gov/index.html), U.S. Geological Survey's National Map(http://nationalmap.gov/) and National Atlas (http://www-atlas.usgs.gov/maplayers.html), the California Spatial Information Library (http://gis.ca.gov/), and the California Digital Conservation Atlas (http://www.legacy.ca.gov/new_atlas.epl). There are also are numerous regional organizations which have developed spatial information libraries relating to their work in the region, such as the American River Watersheds Institute. State funded projects such as the Sierra Nevada Ecosystem Project (http://www.ice.ucdavis.edu/snep/) have developed GIS resources available for download. There are also several websites which have contracts with government agencies to provide spatial data to the public through the internet, such as the GeoComm International Corporation (http://gisdatadepot.com/dem), MapMart.com (http://www.mapmart.com), and Advanced Topographic Development and Images (ATDI) (http://www.atdi-us.com. These sites provide access to digital imagery for the Problemshed region, including Digital Elevation Models (DEM), USGS 7.5 minute Quads, and color/black and white aerial photos in the for of Digital Ortho-rectified Quarter Quads (DOQQ).

Federal government sites tend to provide excellent basic geographic information such as watersheds, hydrography (rivers, streams, lakes, etc.), transportation, demographics, etc. with a broad coverage. The U.S. Geological Survey hosts the data repository for the National Hydrography Dataset (NHD) which contains information on water, streams, rivers, lakes, reservoirs, and canals at three levels of detail. This is a valuable source of information for high-resolution hydrography. The National Spatial Data Inventory's Geospatial One Stop is also a useful site as it provides access to the spatial information libraries of many federal agencies such as the Departments of the Interior, Agriculture, Defense, Transportation, and Commerce; National Aeronautics and Space Administration; Environmental Protection Agency; and the Federal Emergency Management Agency. These sites should provide an organization with a nascent GIS unit the essential building blocks of a useful and up-to-date spatial information library. The National Marine Fisheries Service Southwest Region Office (http://swr.nmfs.noaa.gov/hcd/cvcsd.htm) can provide information on present and historical anadromous fisheries in the problemshed.

California state agencies can also be an excellent source of spatial information for the Problemshed. The California Digital Conservation Atlas is an online map viewer/data clearinghouse which has extensive information on a wide variety of topics ranging from administrative boundaries, jurisdictions, and plans to environmental hazards, and biological information. The California Department of Forestry and Fire Protection's Fire and Resource Assessment Program (http://frap.cdf.ca.gov/data/frapgisdata/select.asp) is also an invaluable source of information for organizations working with fire, forestry and habitat issues. The California Spatial Information Library also is an excellent source of

information for all of the above mentioned topics as well as satellite imagery, census information, and a range of other types of information. Finally the California Gap Analysis Program has an extensive library relating to the distribution of 455 terrestrial vertebrate species in California.

The California Watershed Assessment Manual (http://cwam.ucdavis.edu) has been designed to help watershed groups, local agencies, private landowners, and watershed specialists evaluate the condition of their watershed. Developed by a team of researchers and watershed specialists from the University of California, the California Department of Forestry, and the Office of Environmental Health Hazards Assessment, the CWAM provides a toolbox of science-based approaches that can be used to assess natural resource issues in creek and river basins throughout the state. These assessments can then guide a variety of activities, including restoration planning, water and land management, land use planning, and regulation.

A very important source of information specific to the Bear River is the *2003 Bear River Watershed Disturbance Inventory and Spatial Data Encyclopedia* (PDF, 3 MB). The Inventory, developed by Fraser Shilling and Evan Girvetz at U.C. Davis in collaboration with the Bear River Coordinated Resource Management Plan group (a.k.a. Bear River Watershed Group), provides a detailed description of resources and conditions of the watershed complete with GIS maps, links to critical information, references, and a very helpful "data dictionary" of terms, definitions, additional sources, etc.

There are many regional groups and local government agencies which can provide much more specific spatial data for regions within the problemshed. Many of these groups do not have web-accessible GIS libraries. Local government agencies such as counties and irrigation districts will often be the best sources for precise spatial data relating to land use planning, parcel maps, and water infrastructure.

Watershed groups and other non-profit organizations in the problemshed can also be useful sources of geographic data. These organizations often do not have extensive GIS libraries, but may have excellent information relating to specific projects they have undertaken. One of the charges of the Foothills Water Network is to develop and expand the GIS database for the problemshed with particular emphasis on outreach to the various local and regional watershed groups and organizations doing GIS work.

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