

GIS support for multiobjective hydrogeomorphic and biologic monitoring program

One of the key components to the data management task of the project was providing GIS data, technical support and spatial analysis to the Cosumnes Research Group. The methods that were used include:

1. Existing GIS data
 - a. Distributing GIS data in a standardized format (ARC/INFO, ArcView)
 - b. Distributing GIS data in standardized map projections (UTM zone 10, California Albers, State Plane)
 - c. Exporting data in useable format for researchers (ARC/INFO, ArcView, ASCII, DXF, DBF, EXCEL)
 - d. Automating GIS data distribution from the website
 - e. Providing site maps and graphics to researchers for use in the field, presentations and publications
2. Technical support for GIS
 - a. Providing tutorials in GIS software
 - b. Demonstrating new software
 - c. Providing personal consultations
 - d. Integrating field data with GIS data
 - e. Standardizing the mapping of sampling points
3. Technical support for GPS
 - a. Providing tutorials for using GPS units and software
 - b. Developing data dictionaries
 - c. Post-processing of GPS data
 - d. Integrating GPS data with GIS datasets
4. Spatial Analysis
 - a. Providing customized summary statistics of GIS datasets
 - b. Customizing AML programs for processing watershed and local scale data
 - i. Identification of potential barriers to fish passage
 - ii. Calculation of upstream drainage from sampling points, upstream land use, vegetation, number of road crossing, miles of near stream

- road, road densities, miles of stream, stream densities, number of dams and diversions, average slope, and geology
- iii. Calculation of land use, vegetation, number of road crossings, miles of near stream road, road densities, miles of stream, stream densities, number of dams and diversions, average slope, and geology within a 500 meter buffer of sampling points
- iv. Other watershed and local scale analysis
- c. Exporting the processed GIS data in formats useable by researchers

GIS support was provided to researchers at different levels for different groups. For research teams that already had GIS capabilities, provision of data and some technical support was sufficient. For research teams that did not have the technology, or had not used GIS in the past, additional support was provided and the GIS team conducted analysis for the researchers.