Hydroinformatics

Assignment 1

Metadata and the Data Life Cycle

Due Date: September 17

Learning Objectives

1. Describe the data life cycle
2. Generate metadata and describe datasets to support data sharing and interpretation

Computer and Data Requirements

1. Links to the GAMUT data for each of the three iUTAH watersheds are provided at http://gamut.iutahepscor.org.
2. Each individual GAMUT watershed page (e.g., http://data.iutahepscor.org/mdf/Data/Logan_River/) has links to the a page describing the measurements made at each GAMUT monitoring site.
3. The page for each site (e.g., http://data.iutahepscor.org/mdf/river_info/iUTAH_Logan_OD/LR_Mendon_AA/) has links to download the raw data and to visualize the time series data using the Time Series Analyst.
4. We encourage you to download and examine data from one or more of the GAMUT monitoring sites to complete the assignment.

The Problem

Your employer is developing three hydrologic models – one for the Logan River in Cache Valley, one for Red Butte Creek, and one for the Provo River. The objective of the models is to assess how water quality might change in these watersheds under potential future population growth, land use change, and climate scenarios. Your boss has asked you whether s/he can use data from the iUTAH GAMUT network in the study to calibrate and/or validate the models that are created. Submit a 1-page briefing sheet to your boss that offers your recommendation on the potential usefulness of the data from the GAMUT monitoring network for the modeling study. In making your recommendation, you should consider:

1. What do the data represent?
2. How were the data created, collected, and/or observed?
3. What is the format or syntax of the data?
4. What manipulations, transformations, or derivations have been performed to produce the data?
5. What are the spatial and temporal support, spacing, and extent for these datasets?
6. What are appropriate uses for the GAMUT datasets?
7. What are the limitations of the data?
8. Are there differences in the way the data at different sites or in different watersheds were produced that make them incompatible?

Deliverable

Submit a one-page report that introduces the problem, answers the above questions, and recommends whether your employer should use the data from the GAMUT monitoring network in support of the monitoring study described. Appendices with references, images, or supporting material may be provided as needed.