Climate-Aquatics Workshop Blog Mailing #4: A Google Map Tool for Interagency Coordination of Regional Stream Temperature Monitoring

Context: The convenience and cost-effectiveness of modern temperature sensors has greatly increased the amount of stream temperature monitoring in the last decade. In the northwest US alone, there are somewhere between 15,000 and 30,000 summers worth of stream temperature measurements. Nobody knows for sure because the data are scattered within and among a dozen different resources agencies. Temperature data collection, especially during the summer, is so common that on many occasions I've encountered sensors placed by someone else from a different agency at a site that I intended to instrument. One of us was wasting our time there, & since I was late to the party, it must have been me. Not knowing who was responsible for the earlier sensor placement or how to later obtain a copy of the data, those sites usually ended up with a redundant sensor I'm not proud to say.

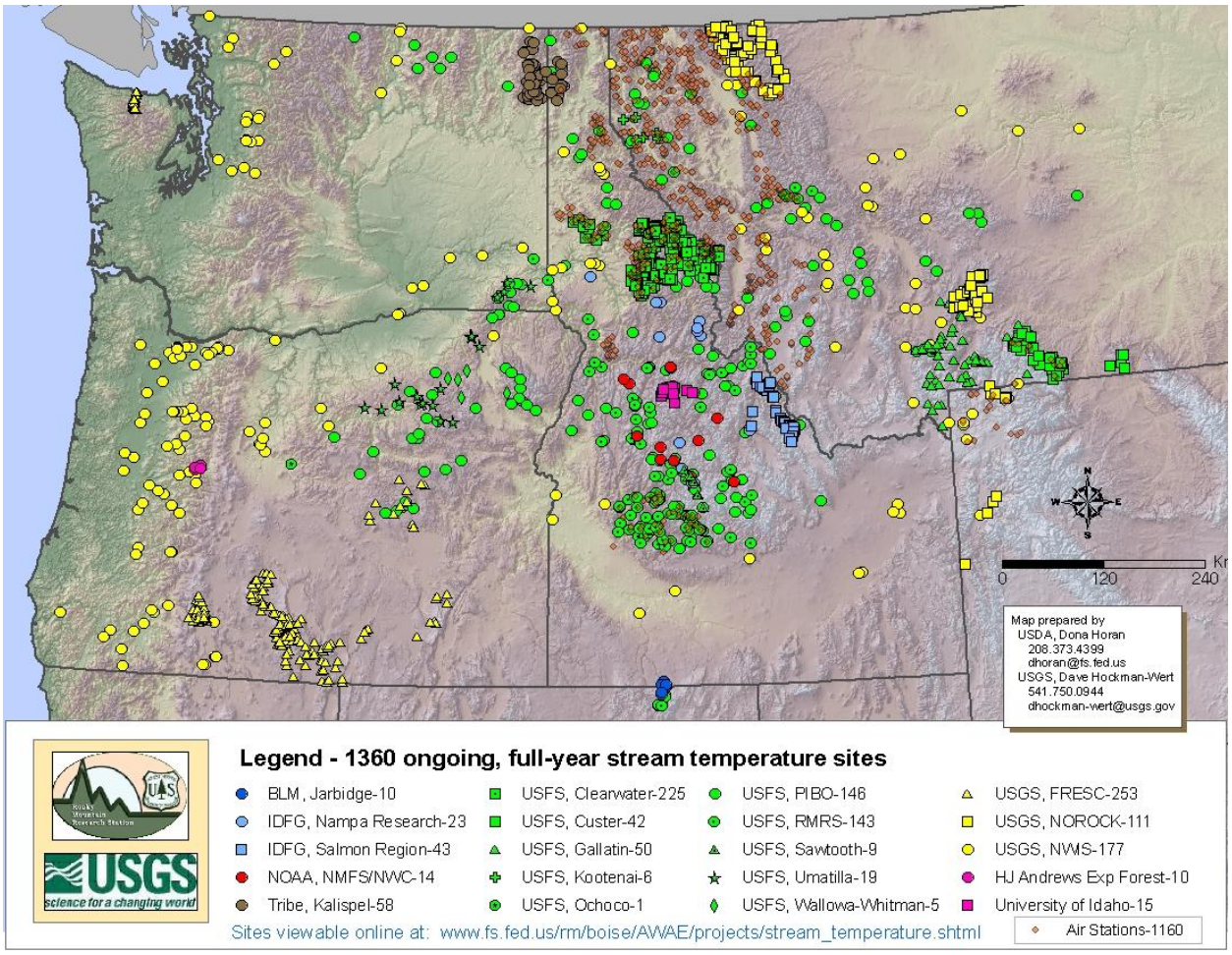
Issue: Concerns over climate change are only increasing the amount of stream temperature monitoring that is being done and will further increase the redundancy of efforts without better communication and coordination. Full year, rather than summer only, stream temperature monitoring is becoming more common due to sensors with longer service lives, convenient means of instrumenting permanent sites (see Mailing #3, underwater epoxy technique), and reduced costs associated with fewer site visits. Because full year sites are typically monitored for multiple years, it makes sense to map these sites to provide a spatial database that could inform the placement of new monitoring sites. Over the last year, therefore, an effort was undertaken identify all the locations on streams in the northwest US where full year temperatures are currently being monitored by federal, state, tribal, and private organizations and agencies. At present, there are some 1,375 such sites that have been mapped (see below) with at least a few hundred additional sites yet to be mapped. From discussions I've had with various agency representatives, plans are afoot for somewhere between 500 & 1,000 full year temperature monitoring sites to be added to this evolving regional network in 2011.

Solution: To minimize the redundancy of new efforts and to maximize the potential for data sharing and coordination among agencies, a dynamic Google Map tool has been developed that displays the locations of many of the existing 1,375 full year temperature monitoring sites (at least those we were given permission to display). The tool makes it possible to pan around the region, zoom in/out, and query individual sites to obtain information about sensor site locations, stream names, the local data stewards, and when individual sites were established. The tool can be accessed through the Stream Temperature Website (http://www.fs.fed.us/rm/boise/AWAE/projects/stream_temperature.shtml) maintained by the Boise Aquatic Sciences Lab or a Google search on "Stream temperature Boise" should get you there.

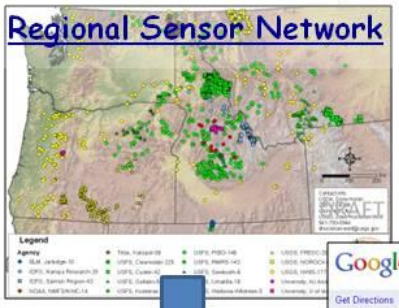
If you are within the USFS Rocky Mountain Research Station service area, which constitutes most of the western US exclusive of WA, OR, and CA and have full year monitoring sites you'd like added to the mapping tool, please contact myself or Dona Horan (dhoran@fs.fed.us). The initial effort to develop this tool has focused on the northwest US but we'll to add sites further south in the RMRS area as their locations are made known to us. The map will be updated once each winter so that it remains a valuable reference resource. If you are outside the RMRS service

area and are interested in developing a similar tool for coordinating temperature monitoring efforts in your region, we'd be happy to provide technical assistance.

Best Regards,
Dan Isaak



Dynamic GoogleMap Tool for Full Year Temperature Monitoring Sites



Site Information

- Stream name
- Data steward contact information
- Agency
- Site Initiation Date

Query Individual Sites

Webpage:

www.fs.fed.us/rm/boise/AWAE/projects/stream_temperature.shtml

Google Search "Stream Temperature Boise"