

USDA Forest Service Natural Resource Manager



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Topic: Natural Resource Manager (NRM) Aquatic Surveys (AqS) and the Rocky Mountain Research Station Northwest stream temperatures database

Summary: The Rocky Mountain Research Station (RMRS) joined with more than 70 state, federal, tribal and private resources agencies across Idaho, Washington, Oregon, Montana, and Wyoming forming Northwest stream temperatures (NorWeST), the largest stream temperature database the of its kind. Over 50 % of the data originated in the NRM Aquatic Surveys application (AqS) in this cooperative effort. The database would have require \$10 million to replicate, however the information these data yield collectively has even greater value for decision making and prioritizing investments.

Climate change is warming aquatic ecosystems and will have profound consequences. Effective conservation of aquatic resources will require unprecedented levels of interagency coordination for mitigating climate change effects to important habitat and species. By providing open access to temperature data, this project is facilitating coordination of monitoring activities among agencies and fostering new research on: 1) stream temperature dynamics, 2) thermal criteria and bioclimatic models for aquatic organisms, and 3) decision support tools for prioritization of habitat restoration. As the project progresses, it is developing considerable interest and support across the region, stimulating collaboration among agencies, and serving as a model for initiatives in other parts of the country.

Key Points: Daniel Isaak from RMRS said “It is a win-win situation where everyone gets what they need, more value is extracted from these datasets, communication/collaboration between researchers & managers is increased, and we have better information to better manage natural resources, which is what it is ultimately all about. If we can get them all uploading data to NRM, researchers can grab those big databases, design and build more accurate models, and map the model results back to the real world landscapes to provide the status and trend assessments that the managers need. I think it is a powerful illustration of a synergy between research and management that can exist through data.”

Key Features: AqS supports ecological and physical stream-characteristics for three hierarchical levels of the riverine system on NFS lands: valley segments, stream reaches and channel units. Data collected on aquatic fauna communities (fish, invertebrates, macro-invertebrates, amphibians, reptiles) in streams and lakes are supported.

The NRM AqS application includes data and information on:

- Digital images
- Water quantity
- Water quality
- Structure and condition of various water habitats
- Organisms occupying the system
- And other data important to NorWest

The primary user-base for AqS includes biologists, hydrologists and ecologists. The mapping and reporting tools deliver raw or summarized aquatic data. AqS information can be managed and consumed at all scales geographic, small projects to landscape projects.

