

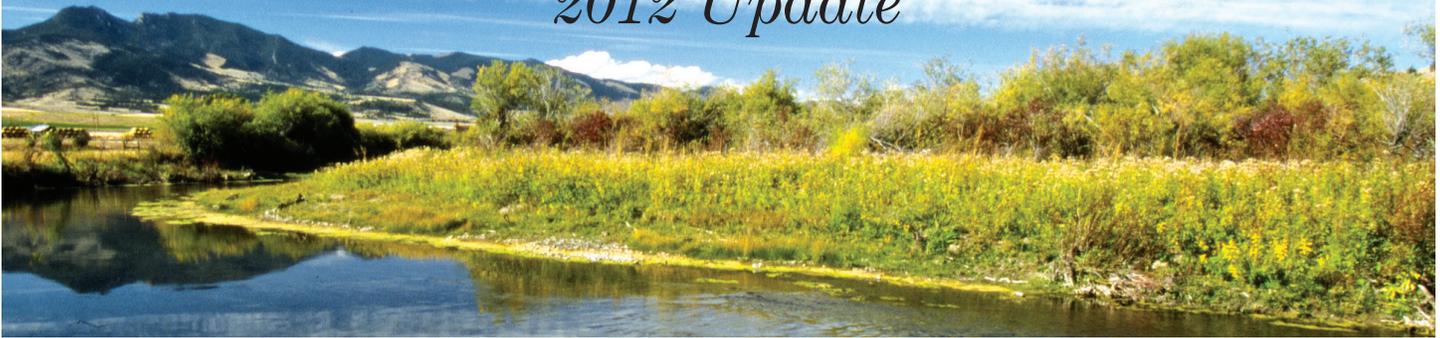


LANDSCAPE CONSERVATION
COOPERATIVES

U.S. Fish & Wildlife Service

Great Northern

2012 Update



Boulder River, Montana

Stream Temperature Modeling

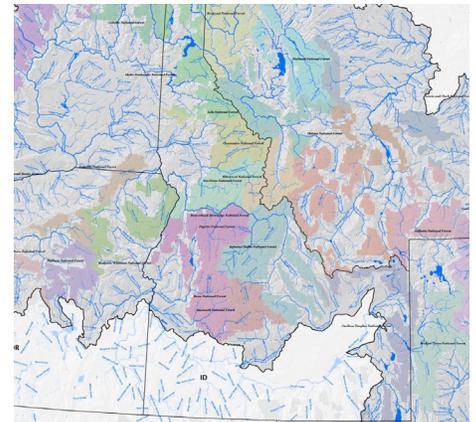
The future of trout populations are in doubt as warming temperatures continue to reduce and restrict cold water species into smaller areas. To maintain these populations and their distribution, we must understand the impacts of climate change and develop appropriate adaptive management strategies. The monitoring and modeling of stream temperature data is essential to develop vulnerability assessments for all aquatic species in the Rocky Mountains. Much of the data needed to accurately map historic stream temperatures or to forecast future temperatures does not exist.

To address this data gap, the Great Northern LCC (GNLCC) funded a project led by Dr. Dan Isaak of the U.S. Forest Service Rocky Mountain Research Station to develop a comprehensive, interagency stream temperature database. The newly developed NorWeST database includes more than 45,000 stream temperature data points from 15,000 unique stream sites throughout the northwest.

The project also modeled NorWeST data to develop a consistent set of historic and future stream temperature scenarios for 217,000 miles of northwestern streams. The scenarios are based on real temperature data and not ambient air temperatures. With funds from GNLCC, Dr. Isaak was able

to assemble the NorWeST database for 1/100 of its real cost. This resulted in a cost savings of more than \$10,000,000 to natural resource agencies to use an astounding toolkit that provides a set of collaborative web-based stream temperature prediction models.

The NorWeST stream temperature and prediction model can be applied to aquatic vulnerability assessments and prioritization exercises by resource managers from Federal, State, Tribal and partner agencies. NorWeST displays a real-time look at existing conditions while predicting future changes in stream conditions. This model can be used to support decisions for numerous management actions, including fishery, aquatic biodiversity, habitat restoration, roads and silviculture.



Stream Temperature Model Area



Bull Trout Joel Sartore/ National Geographic & Wade Fredenberg/ USFWS

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