Hydrologic Calibration Analysis for the North Central United States

U.S. NATIONAL WEATHER SERVICE

PROJECT SUMMARY

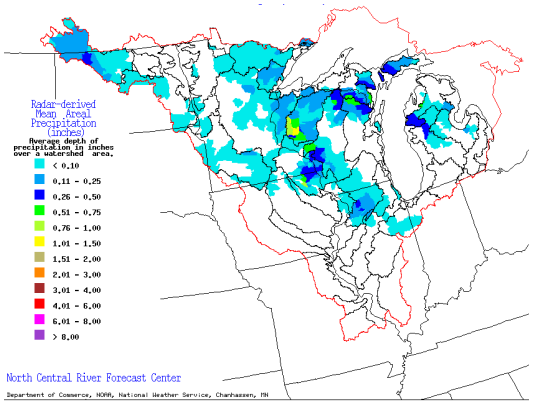
The National Weather Service North Central River Forecast Center required that the National Weather Service Advanced Hydrologic Prediction Services program be implemented across the North Central area of the United States. Working with National Weather Service personnel, Riverside Technology, inc. studied specific basins in the North Central River Forecast area and performed calibrations on those basins developing new calibrations for the area.

LOCATION
North Central United States

PERIOD
2004

PROJECT DETAILS

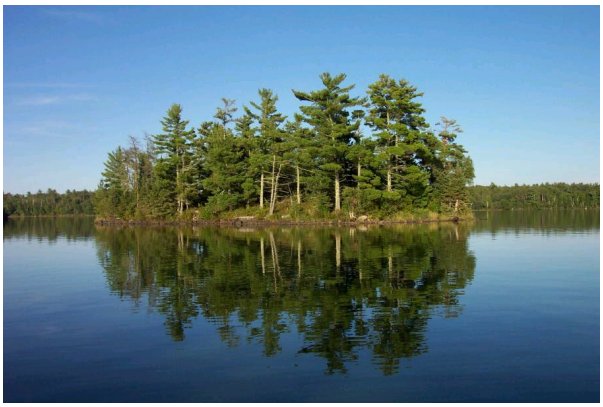
The National Weather Service (NWS) North Central River Forecast Center (NCRFC) was tasked with implementing the NWS Advanced Hydrologic Prediction Service (AHPS) across their area of responsibility. This involved calibrating the basins, recalibrating and updating areas of concern, and correcting calibrations that are questionable during periods of extreme flow.



Radar-derived Mean Areal Precipitation

Riverside Technology, inc. (Riverside) conducted time series processing and calibration of the NWS River Forecast System (NWSRFS) in support of AHPS. This entailed development activities necessary to begin calibrating those sub-basins scheduled within the next year for operational implementation as forecast points. In addition, a consistent set of extended input data was developed for mean areal temperature (MAT) and mean areal precipitation (MAP). Furthermore, selected basins were reviewed and re-calibrated based on deficient operational forecasting results during recent high-flow periods. These activities were accomplished in coordination with NCRFC personnel.

Riverside investigated selected existing basin calibrations and modified them as needed. This involved investigating and correcting and/or enhancing existing sub-basin calibrations. Time-series data needed to investigate these calibrations was developed and used. MAT and MAP time-series were updated to include data through 1999. Data inputs from the National Climatic Data Center (NCDC) formed the basis for the time-series processing. To support the advancement of AHPS activities in the NCRFC area, additional AHPS forecast points were calibrated. New calibrations were developed to allow implementation of these points in the operational forecast system.



Lake of the Woods in North Central Minnesota

RELATED PROJECTS

Advanced Hydrologic Prediction Services Program

Lower Tar River Calibration and Implementation

Calibration of the St. Mary and Milk Rivers

Watershed and Reservoir Model Calibrations for Locations in the Northeast United States

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