

# Nile River Forecast System

U.S. NATIONAL WEATHER SERVICE

## PROJECT SUMMARY

As one of the longest and largest rivers in the world, forecasting and managing major river flow events along the Nile are critically important. Riverside Technology, inc. helped develop, integrate, and implement a hydrologic forecasting system for the Nile River.

LOCATION  
Nile Riparian Countries

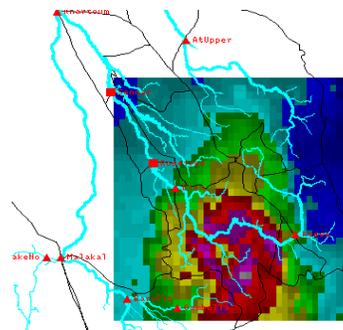
PERIOD  
1993 – 1999

## PROJECT DETAILS

The Nile River and its tributaries flow through ten African countries, and ultimately empties into the Mediterranean Sea with an average discharge of 300 million cubic meters per day. Managing and accurately predicting the river's flow is a huge task and of vital importance for the entire Nile River basin.

The U.S. National Weather Service (NWS) asked Riverside Technology, inc. (Riverside) to help develop, integrate, and implement a hydrologic forecast system for the Nile River. In addition to assisting the NWS in overall project management, Riverside:

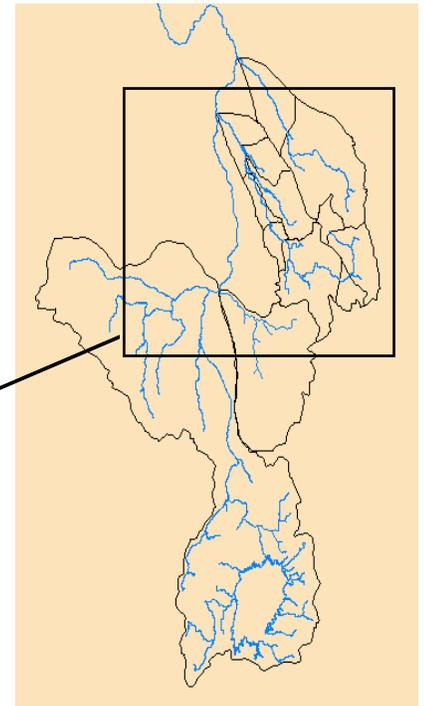
- Designed system software
- Developed and verified computer models for forecasting
- Helped implement the forecast system



Sample Daily  
Precipitation Grid

Riverside personnel developed, calibrated, and verified hydrologic models for the Blue Nile, White Nile, Sobat, and Atbara River basins, and also developed enhanced procedures for Extended Streamflow Prediction (ESP) and model state updating. Riverside performed statistical analyses of historical hydrometeorological data to support calibration of satellite precipitation estimation algorithms, and integrated the various modeling and database components with a Graphical User Interface (GUI). Riverside also trained Nile Riparian engineers to use the forecasting system, enabling them to better forecast and manage Nile River flow events.

Later, the U.S. Department of State requested that Riverside analyze various Nile River basin development and climate impact scenarios. Using the Nile River Forecast System, Riverside generated "what-if" simulations of the Nile River basin, analyzing the effects of both potential future climate changes and proposed water projects.



Nile River Basin

## RELATED PROJECTS

Eastern Nile Planning Model

Nile River Basin Water Resources Planning and Management

Development of the Nile Basin Initiative Resource Center

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