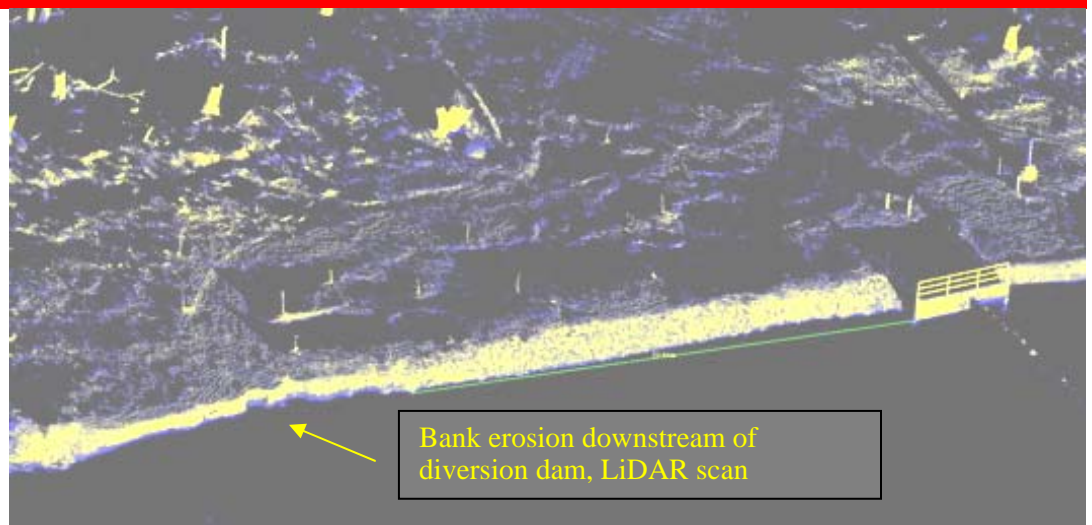




**US Army Corps
of Engineers®**
Engineer Research and
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Urban Flood Demo Program & Southwest Demo Program

BANK EROSION MONITORING



- Products** A database showing the response of the banks to fluvial processes considering overbanking, tree removal, and bank modification will be developed in the first year. An empirical model of the expected bank erosion along the Middle Rio Grande will be developed from the data collected in future years.
- Benefits** Restoration decision makers can use the database and/or the empirical model to predict the expected bank response due to overbanking, tree removal, and/or bank modification. In addition, the data collected will be useful for the evaluation and calibration of sediment transport models
- Problem** Restoration along the Rio Grande consists of a number of different projects from removal of non-native species to removal of jetty-jacks to re-working of channel banks and promoting overbank flooding. To re-establish ecological health of the bosque, it is desired to have the flood plain re-connected with the river channel. At the same time, the Rio Grande flows through a major metropolitan area where flood control is necessary. It is necessary to understand the variables affecting bank erosion to be able to make appropriate decisions for restoration activities whether they include removing Russian olives along the bank or mechanically altering the bank to promote overbank flooding.
- Description** Bank erosion is being monitored by two methods: erosion pins and LiDAR scanning. Erosion pin sites established before June 2006 are being monitored as part of this project. In addition, experiments located downstream of the Calabacillas Arroyo have been established. LiDAR scanning provides a means to remotely collect continuous data on bank geometry. LiDAR scans are being conducted at the erosion pin sites as well as other locations of interest, such as the diversion dam site. Repeat measurements allow for the derivation of volumetric estimates of channel bank modification.

The bank erosion data will be evaluated to determine the impact of river flows and levels, bank vegetation, bank geometry and soil type on the resulting bank stability. We seek to identify key factors and consider possible predictive approaches addressing bank modification.

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Collaborators

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