

Monitoring Irrigated Lands in the Lower Arkansas River Basin

COLORADO WATER CONSERVATION BOARD

PROJECT SUMMARY

The Colorado Water Conservation Board needed an updated map of irrigated lands in the Arkansas River basin to improve consumptive use estimates. With technical assistance from Riverside Technology, inc., the latest Geographic Information System and remote sensing technology was provided resulting in high quality land maps.

LOCATION
Colorado, U.S.A.

PERIOD
2004 – 2005

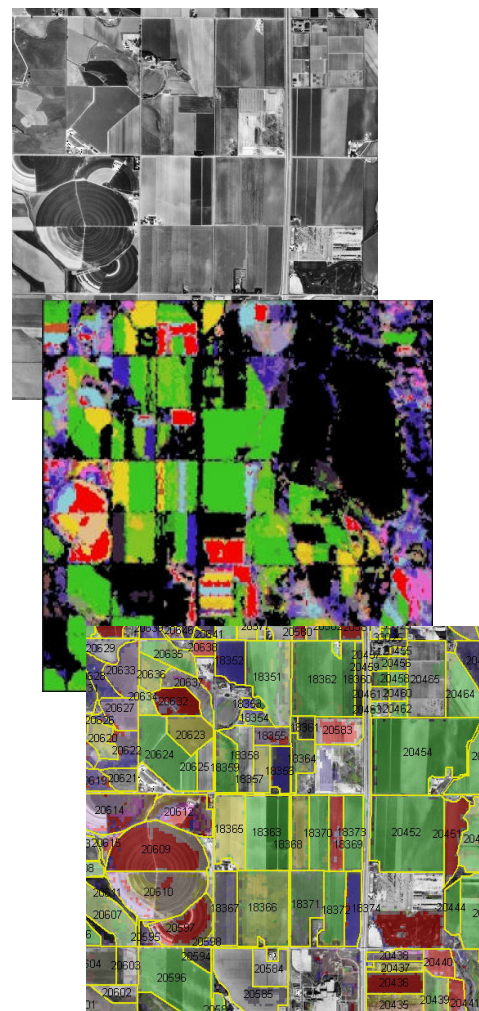
PROJECT DETAILS

Riverside Technology, inc. (Riverside) was contracted by the Colorado Water Conservation Board (CWCB) to provide technical assistance to the Colorado Division of Water Resources (DWR) on GIS data requirements, acquisition, and preprocessing of Landsat Imagery and Digital Orthophoto Quarter Quadrangles (DOQQs) to be used in the 2003 irrigated lands update in the Lower Arkansas River basin.

Riverside determined specific imagery and Geographic Information System (GIS) data needs based on the project objectives and characteristics of the area, such as agricultural practices. The most recently available DOQQs were ordered for specific counties within the basin. In addition, Riverside coordinated an agreement between the CWCB and U.S. Geological Service (USGS) for the production of DOQQs in areas where the data were outdated. All DOQQs covering the entire Lower Arkansas River basin were mosaicked into a seamless digital orthoimage base map in compressed MrSid format to facilitate their use in an integrated GIS system.

Selected Landsat scenes acquired by Riverside from USGS provided an optimal discrimination of crop types or groups of crops with similar consumptive use based on five or more acquisition dates distributed throughout the growing season. The multirate Landsat imagery was atmospherically corrected and georeferenced to the DOQQs within 0.5 pixels. This allowed DWR staff to combine the high spatial accuracy of the DOQQs with the multi-spectral information of the Landsat imagery for the delineation of irrigated parcels.

In addition, Riverside provided assistance to DWR on image analysis, classification techniques, and quality control that resulted in an updated map of irrigated lands and crop types in the Lower Arkansas River basin.



Arkansas River

RELATED PROJECTS

Cooperative Development of an Irrigated Lands Monitoring System for Northern Colorado

South Platte Decision Support System Spatial Information Systems Component

RIVERSIDE

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