

Bosque Ecosystem Monitoring Program – The Critical Role of Education, Equity, and Community/Citizen Science in Modeling Vegetation Response to Ecosystem Drivers

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The Bosque Ecosystem Monitoring Program (BEMP) combines long-term ecological research with outdoor science education and outreach by involving K-12 students and their teachers in monitoring key indicators of structural and functional change in the Middle Rio Grande riparian forest, or “bosque.” Students participate in field data collection, lab processing, classroom activities, and events – all helping to increase their understanding and appreciation of science and their local riparian ecosystem. BEMP supports between 4000 and 9000 students from six counties in New Mexico, primarily from Title I schools. Data collected from 34 sites along 350 miles of the Rio Grande are used by federal and state agencies to make land management decisions. The current bosque is a remnant of the 1941 flood and the river regulations and manipulations of that time. Restoration of a cottonwood/willow forest and native mosaic under changing temperature regimes and decreasing water availability is a challenge that must also address water use and values of local communities. Understanding the history of changes, current constraints, implications of anthropogenic drivers, and the impact of new drivers like increasing aridity and fires on the river and its ecosystem can help us develop models to navigate successful management of the senescing cottonwood forest.

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