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THINNING AND PRESCRIBED FIRE IN THE SANTA FE MUNICIPAL WATERSHED: PROTECTING WATER QUALITY; INCREASING WATER YIELD?

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The City of Santa Fe maintains two reservoirs in the municipal watershed that supply 40 per cent of the City's water. By the end of the 20th century, the forest in that watershed had become so overgrown that it presented an extreme fire risk, threatening the viability of those reservoirs. Consequently, beginning in 1998 Santa Fe National Forest initiated a project to thin out the watershed. To increase the confidence of the community that the project would be carried out in an ecologically sensitive fashion, a commitment was made that thinning and burning treatments would be monitored for ecosystem response.

One element of that monitoring program was the City's paired basin study. Two contiguous 400-acre sub-watersheds were identified: one to be thinned and burned, the other to be kept as the control. The objective was to compare the hydrologic response of the two basins over time, observing how a representative area within the Santa Fe Municipal Watershed responded to forest treatments in terms of water yield, duration of flow, peak flows during storms or snowmelt, and turbidity and sediment production.

The Paired Basins were instrumented in January 2001. Thinning and burning of slash piles was carried out in 2004. Project managers are now poised to conduct a statistical analysis of three years of pre-treatment and two years of post-treatment data to begin to answer the questions:

1)Does this type of forest treatment in Ponderosa/mixed conifer forest result in water quality impairment? And: 2)Does it increase water yield?

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