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EXECUTIVE SUMMARY

This project assessed the applicability of using a Landsat 5 TM image to accurately estimate chlorophyll *a* concentrations on the San Joaquin River based on band ratios regressions. Both band ratio data and discrete chlorophyll data from late July to early August 2010 were used to create an algorithm for estimating chlorophyll *a* concentrations from Landsat 5 TM data. In the end, Landsat 5 TM data were able to accurately estimate chlorophyll *a* concentrations on the San Joaquin River. Overall, there was a strong correlation between the estimated and discrete values ($R^2 = 0.924$). As a result, satellite images could potentially supplement discrete monitoring programs in the region by providing better spatial and temporal coverage of data.