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Survey of Pathogenic Bacteria in the Surface Water of the Rio Grande Basin

The Rio Grande watershed is a large, diverse and economically important area and the quality and use of its scarce water resources has not been adequately explored. This research provides a survey of the pathogens present in the Rio Grande from its headwaters in Colorado to its mouth in the Gulf of Mexico and predicts geographic and seasonal differences in pathogen levels between the six regions in the watershed. Samples from 49 sites along the river were analyzed using chromogenic media selective for the following pathogens: *Escherichia coli*, O157, *Salmonella* spp., *Pseudomonas* spp., *Vibrio* spp., *Staphylococcus aureus* and *Listeria monocytogenes*. These media, developed for use with clinical samples, were adapted during this project for use with environmental samples. Significant differences were found between regions and between sampling dates for several of the organisms. Regions 3-6, El Paso down to the gulf, had consistently higher pathogen levels than the upper regions, with region 1, Colorado, having the lowest pathogen levels throughout the study.

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