

ABSTRACT

**SURFACE WATER FECAL COLIFORM LOAD
WITHIN COASTAL DAIRY WATERSHEDS**

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Making management decisions to improve water quality in an agricultural watershed requires data at a spatial scale that corresponds to individual management units within an agricultural operation. This is particularly true in the context of water quality regulations, such as Total Maximum Daily Loads, that identify agriculture as one source of non-point source pollution through larger tributary watershed scale assessment and investigation. We have conducted a systems approach study of 10 coastal dairies and ranches to document water quality with regard to fecal coliform at a smaller management unit scale. Water quality samples were collected on a storm event basis from identified loading units that included manure management system, gutters, storm drains, pastures, and lots. In addition, samples were collected above and below dairy facilities and from a control watershed managed for light grazing and absent of a dairy facility or residence and septic system. Samples were collected from surface runoff on a storm event basis and analyzed for fecal coliform by filtration. Instantaneous discharge was measured for each collected sample. Storm runoff was also calculated using the curve number method (SCS, 1985). Through a systems approach, we have generated water quality data that is beneficial for management decisions because of its scale and representation of current management activities. Results for a representative dairy as well as the entire data set are presented to demonstrate this point.