Water Quality and Range Improvements Following Best Management Practices Implementation. (A05-moody173836-Poster)

Authors:

- L.E.Moody - *California Polytechnic State University*
- C.P.Stubler - *California Polytechnic State University*
- A.V.Young - *Cal Poly Foundation*
- J.C.Daly - *California Polytechnic State University*
- R.K.Smidt - *California Polytechnic State University*
- K.McNeill - *California Regional Water Quality Control Board*
- B.C.Dietterick - *California Polytechnic State University*

Abstract:

The Morro Bay estuary, California central coast, supports a variety of commercial and recreational activities. The watershed draining into the estuary includes urban, agriculture, and a variety of natural habitats, and has been impacted by pollutants including sediment, bacteria, metals, and nutrients, originating from a variety of nonpoint sources. The Central Coast Regional Water Quality Control Board manages a National Monitoring Program (NMP), funded by the USEPA, begun in 1993. The NMP goal was to monitor the impacts of selected BMPs on water and habitat quality in the watershed. The NMP included a paired watershed study, on which this paper focuses. Both watersheds are rangeland used for cattle grazing. In the treatment watershed, best management practices (BMPs) were instituted to support intensive rotation of cattle and to limit (not exclude) cattle access to the riparian corridor. Climate, streamflow, and water quality monitoring were accomplished with instrumented gauging and collection stations installed at each watershed outlet. Paired vegetation transects were monitored to document changes over time. Monitoring included identification of species, biomass, and percent of standing vegetation, persistent litter, nonpersistent litter, and bare ground. Water quality improvements were statistically significant beginning after BMP implementation, until about 4 years after. Improved water quality in the treatment watershed continued but the rate of improvement leveled off. Habitat quality improvement, especially in riparian areas, was visually striking, but not statistically significant. We judged that both water quality and riparian habitat improvements mainly were a function

of limited cattle access to the riparian zone.

Corresponding Author Information:

Lynn Moody
California Polytechnic State University
1 Grand Avenue
San Luis Obispo, CA 92407

phone: (805) 756-2807
fax: (805) 756-5412
e-mail: lmoody@calpoly.edu

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