



USDA-CSREES 2007 National Water Quality Conference

The Effects of an Open Space Dog Exercise Area on a Stream feeding Lake Tahoe

Waterborne disease outbreaks have been associated with dispersed animal sources, such as cattle and wildlife, and dogs can be carriers of zoonotic diseases, which may affect public health. Nevada water suppliers on Lake Tahoe have municipal supply intakes along the east shore of Lake Tahoe, and hold EPA waivers to filtration requirements. We ask, with 15,000 domestic dogs in the Lake Tahoe basin, is the water supply of Lake Tahoe affected by concentrated canine recreation? We conducted a 14 month assessment of fecal loading and bacterial water quality changes in a park on Burke Creek, upstream of the intake for a public water supply at Lake Tahoe, Nevada. Our goal was to assess site use and loading, as well as associated risks to the water supply. This national forest land is heavily used by visitors and local residents to exercise dogs throughout the year. Twice monthly, we collected feces from 14 circular transects and estimated loads of accumulated feces for each time period. Also we analyzed waters for fecal indicator organisms, from Burke Creek bracketing the dog park and from a detention basin. Our results indicate that fecal loading is highly localized within the study area, and that loading varies through time. Despite periods of high seasonal use and limited access due to inclement weather, there is no correlation between fecal density on-site and seasonality. Results show the study area does not influence water quality, perhaps due to the online sedimentation basin that allows settling. We did find a correlation between snowmelt events and high concentrations of instream bacteria. This could be explained by living bacterial reservoirs in sediment and upstream soil erosivity during scouring runoffs, or the release of fecal bacteria from solid waste previously suspended in snow. The site currently has no facilities to encourage dog owners to dispose of waste. Our mapping efforts suggest locations for bag dispensing stations and collection barrels and provide information about frequency of maintenance needed.

Author: Lynell M. Garfield
University Affiliation: Walker Lab
Co-Author(s): Mark Walker