



Understanding Sediment Processes of Los Laureles Canyon in the Binational Tijuana River Watershed

Yongping Yuan (1), Trent Biggs (2), and Douglas Liden (3)

(1) Office of Research and Development, United States Environmental Protection Agency (EPA), Las Vegas, NV, USA (Yuan.Yongping@epa.gov), (2) Department of Geography, San Diego State University, San Diego, CA, USA, (3) US.-Mexico Border Office, United States Environmental Protection Agency Region 9, San Diego, CA, USA

Tijuana River Basin originates in Mexico and drains 4465 km² into the Tijuana River Estuary National Research Reserve, a protected coastal wetland in California that supports 400 species of birds. Excessive erosion in Tijuana during storms produces sediment loads that bury native vegetation and block the tidal channels. Erosion also threatens human life, causing roads and houses in Mexico to collapse and the Tijuana River Valley in the U.S. to flood. Government agencies in US and Mexico spend millions annually to remove sediment. The EPA-SEMARNAT Border 2020 program identified the reduction of sediment to the Tijuana Estuary as a high priority. Gully formation on unpaved roads, channel erosion, and sheetwash and rill erosion from vacant lots in Tijuana are the primary sources of sediment (Biggs et al, 2009). Because 73% of the watershed is located in Mexico, the problem is likely to worsen as Tijuana continues to urbanize. EPA, with support from USDA, San Diego State University, and CICESE, is developing a model to estimate the sediment loss from a sub-basin of the watershed (Los Laureles Canyon) under existing conditions and under future development. This study will evaluate the reduction/prevention of sediment loss from green infrastructure projects, sediment basins, road paving, and conservation easements.