Figure 1  The cost of California's fire history
(data provided by California Department of Forestry and Fire Protection)
Figure 2  Location of monitored California Wildfires (Booker, 1998)
Figure 3  Percent Cover Provided by Seeded Grasses (1956 -1972)
(data collected from CDF Annual Reports of southern California Wildfires)
Figure 4  Sediment loss - Oakland Burn Area Erosion Plots
Figure 5  Runoff, Throughflow, Infiltration Capacity, and the Thickness of the Wettable Horizons for Sprinkler Experiment Plots
Figure 6 Runoff - Rainfall Relationships for Winter Storms in the Oakland Hills (for soils with different shear strengths and hydrophobic character)
Figure 7a  Shear Strength of Rilled and Unrilled Soils in Five Fire Areas
Figure 7b  Shear strength of soils at 3 sites within the Calabasas Fire area, Los Angeles County
Figure 7c  Shear strength of soils at 9 sites within the Mount Vision Fire area, Pt. Reyes National Seashore

n total = 403
75% of the data is <0.11 kg cm\(^{-2}\)
25% of the data is >0.10 kg cm\(^{-2}\)
Figure 8a  Hydrologic and Erosional Response for Intense Rainfall Events
Figure 8b  Hydrologic and Erosional Response for Moderate to Low Intensity Rainfall
Figure 9  Mean Sediment Yield for 108 Debris Basins in Los Angeles County
Figure 10 Sediment Yield for Debris Basins with Slopes > 35 degrees and a 20 Year Record

Fit 1: Exponential
Equation $\ln(Y) = 0.03985492077 \times X + 8.556083779$
Figure 11  Erosional Sensitivity to Changes in Slope & Lithology
Sediment Yield for Los Angeles County Debris Basins with at least a 20 year record
(lines are best fit curves of the raw data)
Figure 12  Sediment yield as a function of fire history
(debris basins have at least a 20 year sediment record)
Figure 13  Excavation of Straw Bale Check Dam Leads to Failure

1. Flow over the top of the dam is not mitigated at the base of the dam.
2. Check dam fills up with sediment.

3. Sediment is excavated behind the dam face, sandbags used to raise dam.
4. Flow over the dam top begins to scour the base of the dam.
5. Flow into the excavated basin begins to scour behind the dam.

6. The dam eventually fails, giving up all its sediment.
7. In many cases, loose straw bales direct flow against channel banks increasing erosion, while other bales can plug urban infrastructure.
Figure 14  K Rail structures as used at Laguna Beach.
1. Steel posts and hog wire with silt netting hung on the upstream face.

2. Sediment is deposited behind dam in the stillwater.
3. Flow backs up behind debris fence as exfiltration through silt netting is less than watershed discharge.

3. Force is applied by channel flow and ponded water to the debris fence.
4. This force exceeds the resting forces of non-cohesive alluvial sediments.
5. Fence is pushed over, or head difference on either side of fence results in pipe flow.

Figure 15  Debris Fence with Hog Wire and Silt Netting Across Upstream Face