The hydrology of forested catchments may change following fire, which may alter partitioning of rainfall between evaporation, transpiration, surface runoff and deep drainage. Current research suggests that the temporal patterns of rainfall partitioning is sensitive to the dryness index of the forest. This index is defined as the balance between precipitation and energy (radiation) inputs for a particular catchment, and is therefore influenced by aspect.

Two small (0.5 ha) adjacent catchments with northerly and southerly aspects, were instrumented after a wildfire to measure changes to the hydrologic partitioning. Initially the experiment has focused on surface runoff, and loss of associated sediment and nutrient. Rainfall, solar radiation, temperature and humidity were also monitored with periodic field campaigns to measure soil water repellency, infiltration, and water content. Initial results from the first year suggest that the amount of surface runoff from the north facing (drier) catchment was double that of the south facing catchment, with runoff to rainfall ratios of 0.24 and 0.11, respectively. Increased surface runoff in turn resulted in 95% more sediment from the north facing catchment. Two years after the fire the two catchments are displaying different recovery trajectories in terms of vegetation regrowth. The focus of the study has now shifted to quantifying the partitioning between transpiration, evaporation and deep drainage as the forest recovers. The results from this study will assist in understanding the variability in fire impacts between different forest types reported in the literature.