

Empirical Evidence of Changing Forest Structure and Streamflow

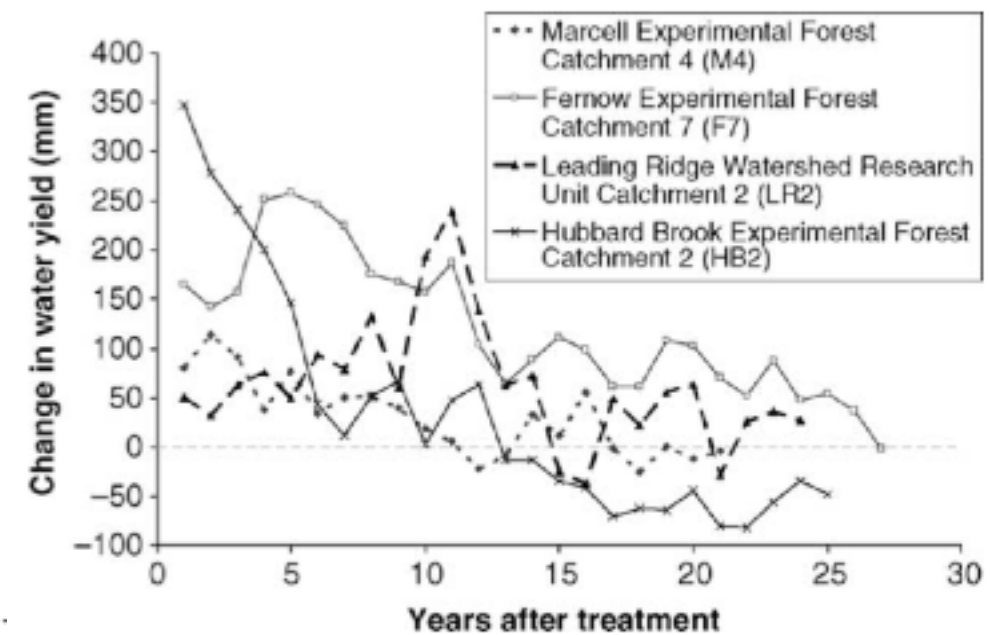
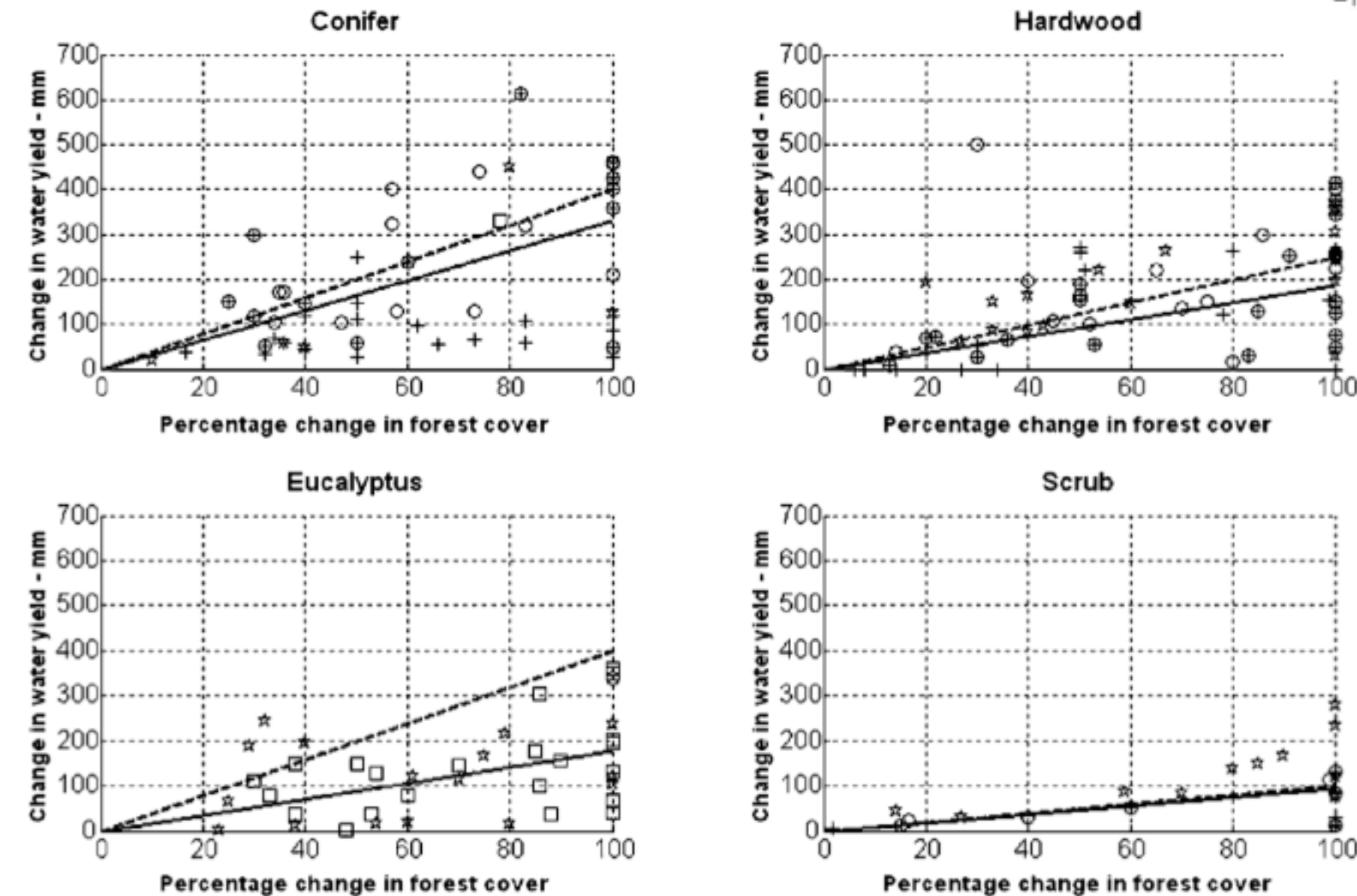


Fig. 5. Change in annual water yield for four paired catchment studies in the USA. M4—100% Basal area cut. F7, Upper half clear-cut (year 0), herbicides on upper half (2-7), lower half cut (year 4), herbicide on entire catchment (5-7). LR2—Lower 24% clear cut (year 0), mid slope 27% clear-cut (years 4-5), herbicide on lower and mid slope (year 7) 40% Upper slope clear-cut (year 8-9), herbicide all catchment (year 10). HB2—100% clear felled (year 0), herbicide on entire catchment (years 2-4). After Hornbeck et al. (1993).

Brown et al. (2005) A review of paired catchment studies for determining changes in water yield resulting from alterations in vegetation, *J. of Hydrology* 310: 28-61.



○ Bosch and Hewlett, 1982
+ Stednick, 1996
★ Sahin and Hall, 1996
□ Additional catchment from this review

---- Change in water yield predicted by Bosch and Hewlett, 1982
— Change in water yield predicted by Sahin and Hall, 1996

Fig. 1. Water yield changes as a result of changes in vegetation cover from Bosch and Hewlett (1982), Sahin and Hall (1996) and Stednick (1996). Results from Bosch and Hewlett and Stednick represent the maximum increase in the first 5 years after treatment for deforestation, regrowth and forest conversion experiments or maximum change in water yield for afforestation experiments. The results from Sahin and Hall are the average increases in water yield in the first 5 years after treatment.

Examples of both increases and decreases in ET and streamflow following mortality

