

SECTION G

SEDIMENT INPUT SUMMARY

INTRODUCTION

The estimated sediment inputs for the Hollow Tree WAU have been summarized and are presented. The purpose of this summary is to demonstrate the relative amount of different sediment sources, indicate priorities for erosion control, and assist with interpretation of stream channel conditions in relation to sediment deposition and transport. A sediment budget provides quantification of sediment inputs, transport, and storage in a watershed (Reid and Dunne, 1996). In this case we are not doing a true sediment budget, only an estimation of the sediment inputs. However, this estimation is useful for source analysis, numeric targets, and allocation of responsibility as needed in a Total Maximum Daily Load (TMDL) for 303(d) listed rivers, such as the South Fork Eel River of which Hollow Tree Creek is a tributary to. However, care must be used when interpreting these estimated values; by no means can the estimates be considered absolute. Rather, the sediment input estimates are best interpreted for relative comparisons between processes and planning watersheds.

This section combines and summarizes the sediment input results from the Mass Wasting and Surface and Point Source Erosion modules of the watershed analysis for the Hollow Tree WAU. Sediment input for the Hollow Tree WAU is estimated from hillslope mass wasting, road associated mass wasting, road surface and point source erosion, and skid trail erosion. The sediment inputs are shown as an average rate for the past 3 decades (1969-2000) and by two time periods analyzed (1969-1979 and 1979-2000).

SEDIMENT INPUTS

The average estimated sediment input for the time period 1969-2000 for the Hollow Tree WAU is 1260 tons/square mile/year. The inputs in the Hollow Tree WAU over this time frame have come from mass wasting (61%) and surface and point source erosion (39%). The breakdown of total sediment input is presented by planning watershed for the Hollow Tree WAU (Table G-1 and Figure G-1).

Road associated sediment delivery is the major contributor in the Hollow Tree WAU. By adding the contribution of road surface, point source and mass wasting sediment delivery, roads represented 57% of the sediment inputs from 1969-2000 in the Hollow Tree WAU. When skid trails are included the proportion of sediment inputs increases to 63%.

Mass wasting sediment contributions are greater than surface and point source erosion in the Hollow Tree WAU. In all of the planning watersheds, except for Lower Hollow Tree, non-road or hillslope mass wasting is greatest. This is predominately from a high amount of inner gorge mass wasting observed in the Hollow Tree WAU. In Lower Hollow Tree planning watershed in the 1969-1979 time period there was a very high amount of road mass wasting associated from roads within or adjacent to the inner gorge.

Figure G-1. Estimated Percentage of Sediment Inputs by Source for the Hollow Tree WAU, 1969-2000.

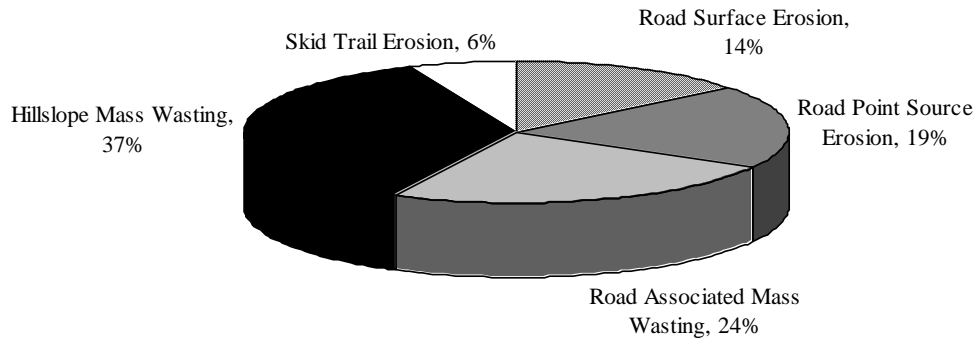
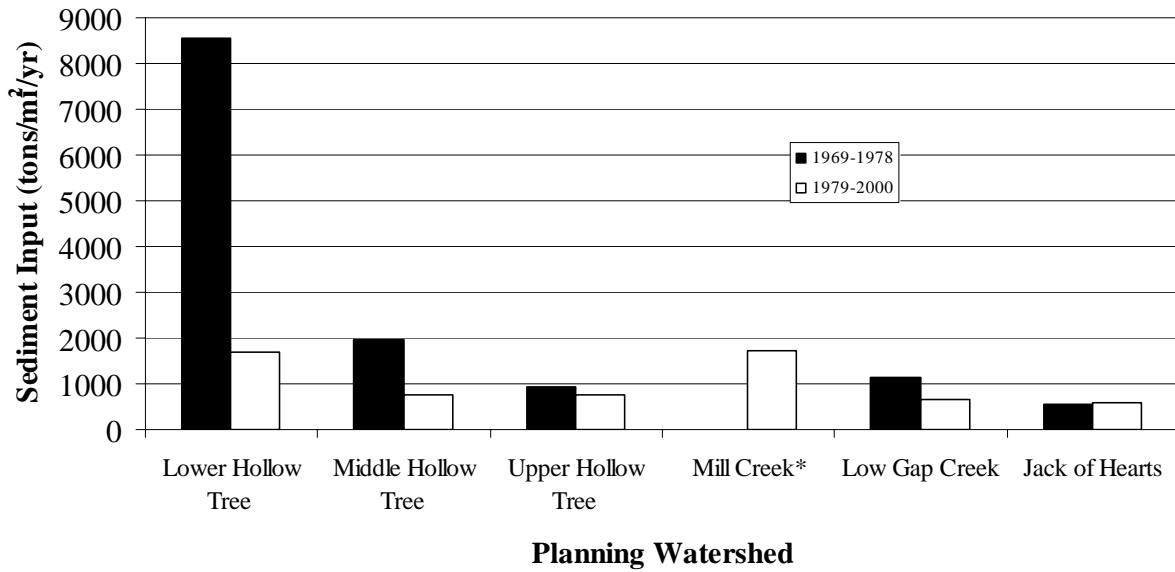


Table G-1. Estimated Sediment Inputs by Input Type for Planning Watersheds of the Hollow Tree WAU Averaged over Thirty-one Years (1969-2000).

Planning Watershed	Road Surface Erosion (tons/mi ² /yr)	Road Point Source Erosion (tons/mi ² /yr)	Road Associated Mass Wasting (tons/mi ² /yr)	Hillslope Mass Wasting (tons/mi ² /yr)	Skid Trail Erosion (tons/mi ² /yr)	Total (tons/mi ² /yr)
Lower Hollow Tree	160	310	2300	1050	50	3870
Middle Hollow Tree	160	210	150	550	70	1140
Upper Hollow Tree	210	220	60	230	100	820
Mill Creek	250	420	0	1410	-	2080
Low Gap Creek	100	440	50	190	30	810
Jack of Hearts	220	330	0	0	20	570
Hollow Tree WAU Total	180	240	300	460	80	1260

A high amount of sediment inputs were observed in Lower Hollow Tree, Mill Creek and Middle Hollow Tree planning watersheds. Lower Hollow Tree planning had a high amount of its sediment input in the 1969-1979 time period (Figure G-2). Lower Hollow Tree sediment inputs were predominately from mass wasting associated with roads in steep, inner gorge terrain. Mill Creek planning watershed showed high mass wasting as well, primarily from a few large landslides (not road associated) during the 1979-2000 time period (no data was available for 1969-2000 for Mill Creek). Middle Hollow Tree Creek had its high sediment contributions from a high amount of inner gorge mass wasting. In almost all of the Hollow Tree WAU sediment inputs were significantly higher in the past (as represented by 1969-1979 time period)(Figure G-2). Forest harvest practices have improved over time and it should be expected that sediment inputs will decrease as well.

Figure G-2. Sediment Delivery by Planning Watershed for Time Periods 1969-1979 and 1979-2000 for the Hollow Tree WAU.



* - No data available for 1969-1979 for Mill Creek.

LITERATURE CITED

Reid, L. and T. Dunne. 1996. Rapid evaluation of sediment budgets. Catena Verlag GMBH. Reiskirchen, Germany.