Defining best management practices for forests requires quantification of the variability of stream sediment loads for managed and unmanaged forest conditions and their associated sediment sources. Although "best management practices" are used, the public has concerns about effects from forest restoration activities and commercial timber harvests. It is necessary to know the natural range of variability to be able to determine if management activity has a significant negative impact. Only long-term watershed research such as that conducted by the U.S. Forest Service can provide such data. An annual sediment load from a watershed is determined by using sediment basins for bedload, and periodic or continuous measurements of suspended sediment loads. Sediment fences, stream bank pins, survey techniques, and turbidity sensors provide measurements that can be used to determine the sources of sediment. In this paper, sediment loads and erosion rates are compared for several experimental watersheds in the western USA. Watershed characteristics that explain differences are examined. The importance of having undisturbed "control" watersheds for determining "natural range of variability" for comparison with watersheds under active management is discussed. For example, at the Kings River Experimental Watersheds in California, one of the managed watersheds in the rain and snow zone, produced 1.8, 15.2, and 18.7 kg/ha/yr for water years 2004, 2005, and 2006, respectively. The increase in sediment accumulation correlates with an increase in yearly precipitation. The snow-dominated and undisturbed watersheds produces similar, and sometimes higher, sediment loads for these same years.