Forested catchments throughout the world are known for producing high quality water for human use. This fact was recognized in eastern Mediterranean civilizations as early as 2,500 B.C. In the 20th Century, experimental forest catchment studies played a key role in studying the processes contributing to high water quality, and the effects of forest disturbances on this important water parameter. The basic hydrologic processes investigated on these watersheds provided the science base for examining water quality responses to natural disturbances such as wildfire, insect outbreaks, and extreme hydrologic events, and human-induced disturbances such as timber harvesting, site preparation, prescribed fires, fertilizer applications, pesticide usage, rainfall acidification, and mining. This paper examines highlights the scientific breakthroughs of the past, current research on water quality topics of concern, and the potential for using experimental forested catchments in the future for monitoring the effects of climate change on water quality. Using knowledge gained from experimental forest catchments, comparisons are made in this paper of the general state of water quality in undisturbed forests, managed forests, agricultural lands, urbanized areas, and mining impacted landscapes.