

Abstract

An experimental introduction of sand sediment in Hunt Creek to increase the bedload 4 to 5 fold resulted in a significant reduction of trout and trout habitat. The trout population declined to less than half its normal abundance. The growth rate of individual trout was not affected. Population adjustment to the poorer habitat was via a decrease in the trout survival rates, particularly from the egg to fry and/or the fry to fall fingerling stage of the life cycle.

Habitat for trout and trout food organisms became much poorer judged upon their drastic population reductions. Stream morphometry changed considerably with the channel widening and shallowing. Further, sand deposition aggradated the streambed and eliminated most pools. The channel became a continuous run, rather than a series of pools and riffles. Water velocities increased as did summer water temperatures. Relatively small bedload sediment concentrations of 80 to 100 ppm have a profound effect on trout and trout habitat.