MICHIGAN DEPARTMENT OF NATURAL RESOURCES
FISHERIES DIVISION

Fisheries Research Report No. 1902
June 10, 1982

SAND SEDIMENTS IN A MICHIGAN TROUT STREAM

PART II. EFFECTS OF REDUCING SAND BEDLOAD ON A TROUT POPULATION[1]

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Abstract

A sediment basin excavated in a Michigan trout stream reduced sand bedload sediment by 86% (from 56 ppm down to 8 ppm). Following the reduction in bedload, trout numbers increased significantly. Small or young trout increased about 40% throughout the treated area. Larger and older trout increased in the portion of the treated area that had an erodible sand bed. Although production increased 28%, growth rate of trout changed little. Both brown and rainbow trout populations responded similarly to the bedload reduction. However, statistical tests were more conclusive for brown trout than for rainbow trout due to lower year-to-year variation of the brown trout population. The results suggest that in-stream sediment basins are an effective means for removing sand bedload and that even small amounts of moving sand bedload sediments can have a major impact on a trout population.

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[1] Contribution jointly funded by the USDA North Central Forest Experiment Station and Dingell-Johnson Project F-35-R, Michigan.

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