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North American Journal of Fisheries Management 1991;11:253–266**Response of Wild Brown Trout to Elimination of Stocking and to No-Harvest Regulations**

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Abstract.—Spring Creek, Centre County, Pennsylvania, had been heavily stocked with catchable-size trout and managed with liberal harvest regulations until pesticide residues were discovered in resident fishes. Stocking was then eliminated, and 3 years later (1982) a no-harvest regulation was enacted, though terminal tackle was not restricted. We describe changes in the populations of wild brown trout *Salmo trutta* and in the fishery 7 years after harvest was prohibited. Density of age-1 and older trout increased by 165% and biomass by 100% in the absence of stocking and harvest. Changes in size and age structure of the population, growth, and numbers of brown trout longer than 350 mm (total length) were not consistent among four stream sections. When the stream was stocked, fishing pressure was high at the beginning of the season and declined rapidly thereafter. After stocking and harvest were suspended, fishing pressure was high throughout the season. Pressure ranged from 966 to 3,374 angler-hours per hectare; 38% of the anglers used bait. Catch rates of trout increased from about 0.2 to 1.3/h. Among three stream sections, the estimated numbers of trout caught and released during an 8.5-month survey period were 1.3 to 6.4 times the estimated population in July or August. We conclude that hooking mortality associated with bait fishing had to be relatively low for this fishery to support such high densities of brown trout and high rates of catch and release.

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