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*North American Journal of Fisheries Management* 1993;13:160–170**Assessment of Stocking Hatchery Trout: A Wyoming Perspective**

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**Abstract.**—We evaluated Wyoming Game and Fish Department (WGFD) file information to determine the species of trout raised, the number of catchable- and subcatchable-size trout stocked, the return rate of stocked fish to the creel, reasons for variability of return rates, and the direct cost associated with stocking trout. About 8.9 million trout were planted yearly from 11 WGFD hatcheries during 1987-1990; 86% were of subcatchable size (<8.25 in) and the rest were of catchable size (≥8.25 in). Rainbow trout *Oncorhynchus mykiss* and cutthroat trout *O. clarki* were most often stocked. Evaluation showed that return rates (percent of number planted that were caught) to anglers were usually greater for catchable than for subcatchable fish. Catchable trout should be stocked in spring and when fishing pressure is highest for best returns; few catchable trout planted after the fishing season survive to the next season. Return rates of subcatchable trout planted in streams varied due to differences in water quality in the hatchery and receiving water, poststocking competition with other fish, time of stocking, and size of fish stocked. Subcatchable trout should be stocked in streams in spring and only when hatchery and receiving water are of similar quality, water temperature and flows are not limiting, and few competing fish are present. Higher returns in streams also occur as larger fish are stocked. Return rates of subcatchable trout were greater for lakes than for streams. For highest lake returns, subcatchable trout should be stocked in productive waters (indicated by total dissolved solids) where competing planktivores and piscivores that prey on stocked trout are few. The cost of production and distribution was US\$0.68/fish for catchable and \$0.13/fish for subcatchable trout. Mean cost of fish reaching the creel was less for catchable trout (lakes, \$2.32; streams, \$3.67; 1953–1989) than for subcatchable trout (lakes, \$37.44; streams, \$6.29; 1953–1988). Research opportunities include developing foresighted management plans based on a combination of biological technology and public desire, evaluating the elimination of subcatchable plantings in streams and alternative management for wild trout, evaluating the transplantation of wild trout or eyed eggs of wild fish as a means of establishing fisheries, evaluating stocking guidelines applicable to various Wyoming conditions, determining the effect on harvest of behavioral differences between hatchery and wild trout, and comparing the genetic backgrounds of hatchery trout to determine their effects on postplanting survival.

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