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DOI: 10.1577/1548-8659(1999)128<0302:POHRBT>2.0.CO;2

Transactions of the American Fisheries Society 1999;128:302–316**Performance of Hatchery-Reared Brown Trout and Their Effects on Wild Fish in Two Small Austrian Streams**

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Abstract.—Two small streams of contrasting physicochemical character, one crystalline and one limestone, were experimentally stocked with brown trout *Salmo trutta*. The study design involved doubling (three sites) or tripling (three sites) the number of large-sized resident fish (>179 or >199 mm total length, dependant on the stream) with an equal mixture of two hatchery strains; three additional sites were left unstocked as controls. In the limestone stream, short-term survival (3 months) of hatchery fish (both strains) was 80%, compared with 90% for wild fish. In the crystalline stream, survival of hatchery fish was 48% and 62% (dependant on strain), compared with 49% for wild fish. After 12 months, the survival of hatchery strains declined precipitously (range: 1–19%), compared with wild fish (range: 13–52%), dependant on stream and strain. After 3 months, about half of the recaptured hatchery fish were caught outside the 200-m-long sites in which they were stocked. Percent movement of wild fish was affected by stocking density in the limestone stream (control, 5%; doubled treatment, 14%; tripled treatment, 20%) but was unrelated to stocking density in the crystalline stream (control 32%; doubled, 20%; tripled, 28%). Stocked strains, on average, lost weight (7–11%) over the first 3 months in the limestone stream but gained weight (5–25%) over the same period in the crystalline stream. Growth of wild brown trout was negatively affected by stocking in the crystalline stream but was unaffected in the limestone stream. Despite the recorded movements, there was no significant change in the population size or biomass of wild brown trout populations due to stocking in either stream.

Received: July 27, 1997; Accepted: June 12, 1998[top ▲](#)**Our Mission**[fisheries.org](#)

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