

REPRODUCTION OF COLORADO SQUAWFISH, PTYCHOCHEILUS LUCIUS,
IN THE YAMPA RIVER, COLORADO (1980-83)

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Charles M. Haynes
Nongame Research Group
Colorado Division of Wildlife, Ft. Collins

and

Robert T. Muth
Department of Fishery and Wildlife Biology
Colorado State University, Ft. Collins

Abstract. Small mesh (1.6 mm) seine collections of Colorado squawfish (Cyprinidae: Ptychocheilus lucius Girard) young-of-the-year (YOY) were made in the lower 145-km reach of the Yampa River (Moffat Co., Colo.) during 1980-83. Downstream transport (drift) was also investigated in 1983 using 0.5-m², 560 μ , plankton nets at 2 sites in Dinosaur National Monument. Young-of-the-year were collected by seine as early as 24 July (1981) and as late as 25 August (1980 and 1982). Total length varied from 8.6 to 29.3 mm in 1983 and 1980, respectively. Young were collected in the lower 28.8 km exclusively and were typically associated with low-velocity (≤ 0.3 m/sec), shallow (0.06 - 0.3 m) shoreline habitats (i.e. embayments, concavities, backwaters and isolated backwater pools). Temperatures ranged from 19 to 28 C at specific collection points. Capture-per-unit-effort (C/f) varied from 0.19/100 m² (1982) to 6.02/100 m² (1983). Young were collected in drift nets from 20 July through 20 August with maximum density (27.1/1000 m³) in a midnight sample from a downstream locality just above the Green River confluence. Size of drift specimens ranged from 7.3 to 9.3 mm TL on 7 July and 8-9 Aug., respectively. A single YOY collected at the upstream net location (20 July) indicated that spawning occurred to some unknown extent somewhere above km 28.8 in 1983. Assuming equal densities of drifting squawfish across the channel and at all depths, the Yampa River could have contributed 35 thousand-2.8 million YOY to the Green River in 1983. Peak spawning in 1983 (28 July - 6 Aug.), based upon estimates of YOY ages, coincided with rapidly declining flows and warming temperatures. The 1983 year-class, based upon comparative C/f, was far stronger than 1980-82. Similarly, discharge in 1983 was substantially greater than in 1980-82.