

REF 90390

Number of Steelhead Trout Passing Clough
Dam on Mill Creek, Tehama County, California,
From October 1979 Through April 1980

This study was initiated to determine how current escapements of steelhead trout compare with those from 1953-62. Escapements of steelhead trout past Red Bluff Diversion Dam (RBDD) and escapements to Coleman National Fish Hatchery have declined dramatically in recent years. If escapements past Clough Dam are substantially below 1953-62 levels then it is likely that steelhead numbers are being reduced by factors occurring below the mouth of Mill Creek. If escapements past Clough Dam are not below 1953-61 levels, then factors above the mouth of Mill Creek (perhaps RBDD) are likely to have caused the observed declines.

Beginning on October 1, the ladder and pool below Clough Dam were watched to detect salmon or steelhead ascending the creek. Presumably due to low flows, no fish were observed until October 21. The creek experienced the first fall freshet on October 20. Sampling was discontinued on April 11, 1980.

The sampling schedule was set up for every other day (50% sampling). At dusk on the evening before each sample day, the fish ladder was blocked (flow cut off with stop logs). Each sample day the ladder was then opened shortly after daylight and fish counted until dusk as they passed into the third step from the top of Clough Dam. As fish entered this step they were trapped, measured, and scales were taken. The ladder was left open until the following evening (preceding the next sampling day). Floods curtailed our sampling; however, no fish were observed to be moving or jumping below Clough Dam during floods, and it was assumed that no fish migrated on flood days. The sampling schedule was occasionally disrupted--i.e., sampling

days were missed--because the CETA employee hired for this work had an alcohol problem.

The number of steelhead passing Clough Dam each month was calculated according to the formula

$$T = N/p$$

where N is the number of steelhead counted and p is the proportion of nonflood days sampled. Confidence intervals were not calculated because of the non-normal distribution of fish counts.

The total number of steelhead passing Clough Dam during the 1979-80 season was estimated as 280. The mean for 1953-62 was 1,037 and the lowest escapement during 1953-62 was 420 fish. During 1979-80 there were two peaks in migration: October and March (Fig. 1).

The very low escapement past Clough Dam during 1979-80 may have resulted from the 1975-77 drought and may not reflect the problem causing the decline of steelhead above RBDD. Because of travel ceilings and limited funds, sampling was not continued during 1980-81; however, it is obvious that sampling should be continued in the future to determine the present status of the Mill Creek population during years not directly affected by the drought.

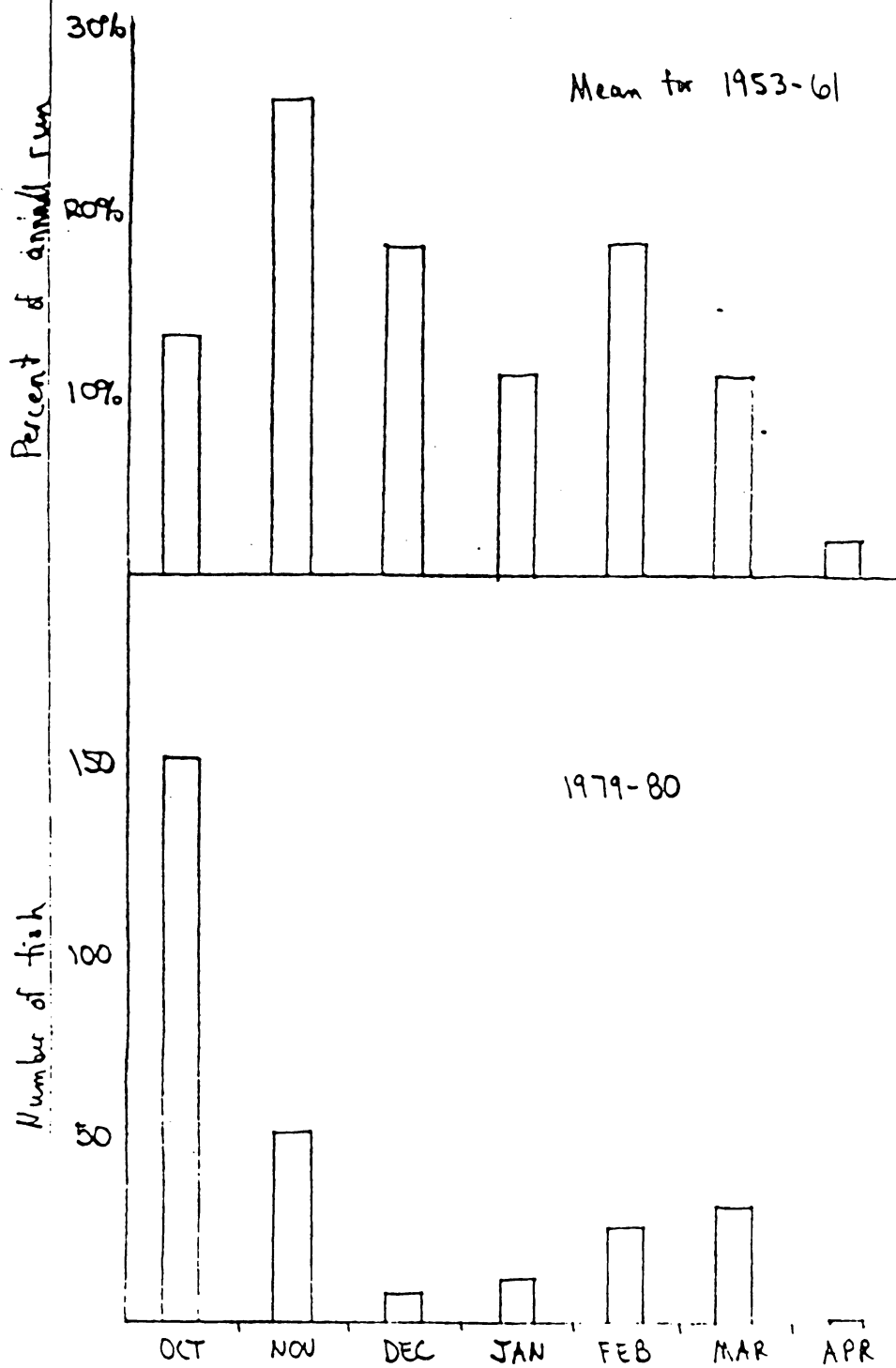


Figure 1. Frequency of adult steelhead trout passing Clough dam on Mill Creek (Tetona County) by month.