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Reply To: 2600 Fish and Wildlife Management Date: June 23, 1987

Subject: Otter Creek Fishery Evaluation

To: District Ranger, Georgetown RD

On 11 June 87 I accompanied Ken Biven and Mike Power on a mining claim inspection into the lower section of Otter Creek. This trip was in response to complaints generated by fishermen that the stream had been dynamited and mined, resulting in a decrease in the overall fishery quality, as well as being littered by mining debris. My objective of the trip was to make general, overall observations of the system so as to substantiate or refute the complaints. My analysis was primarily qualitative, consisting of underwater observations, streamside ocular estimates and an examination of the aquatic invertebrate fauna.

We entered Otter Creek at Silver Falls in Section 24, T13N, R10E. The pool at the base of the falls had been excavated to a depth of 80 feet (Biven's past observations) but had filled to a depth of approximately 25 feet during the February storm of 1986. Water temperature was 63°F at 10:00 in the morning. Numerous large trout (10-15 inches) were observed in this pool. Trout of 3 age classes were observed in abundance downstream from this location for approximately 1/5 mile. Habitat conditions to this point were deemed suitable for trout.

Below this area, habitat conditions were predominantly shallow bedrock pools, with some large cobble and rubble substrates. No trout were observed in this area, which extended for the next mile of stream. Water temperatures reached 68-70°F, which is considered to be maximum acceptable levels. Trout preference is for temperatures below 70°F, with optimum levels between 55-57°F. Large suckers were observed in this area, downstream of obvious barriers, which suggests a species composition change in this section. A few young of the year trout were seen scattered about in some riffle sections below this point, but are presumed to have outmigrated from upstream. Aquatic invertebrate observations noted a predominance of the taxa Glossosomatidae, which correlates well with quantitative data collected in 1980 and 1982. Electroshocking work conducted in 1980 resulted in no catch of any trout species in the lower section, above the confluence with the Middle Fork American River. Water temperature of the Middle Fork on 11 June 87 was measured at 80°F.

Based on my observations on this trip, I feel that there is a temperature dependancy factor that limits the downstream range of the trout fishery. Physical habitat features do not appear to be a limiting factor. Nor does the effects of any mining activity that may have taken place. We found no evidence in our surveyed section of adverse or deleterious impacts associated with the mining operation at Silver Falls (other than the grizzly debris tossed into the pool at the base of the falls). Chemical influences, if present are minimal and would be suspect if fish, in addition to a diversity of benthic invertebrates, were completely absent from the stream.

In order to draw more concise inferences to why we see the current condition, intensive biological and chemical sampling would need to be completed in this system. Sampling would include electroshocking, aquatic invertebrate sampling, and water chemistry analysis. This would very labor intensive and time consuming and depending upon course of action taken against the perpetrators (providing their actions created the problem), not very cost effective.

KARL F. STEIN
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