

Reports consistently find no actual impact of consequence on the environment, and so almost always fall back to the position that the potential for impact exists (USACE, 1994). The majority of dredge operations studied did not work long periods or disturb large areas of the streambed (Hassler, 1986). The unmodified dredge moved about 2% of the manufacturer's maximum rating (Griffith, J.S. and D.A. Andrews, 1981). When done properly, legal dredging must be allowed by law and environmental effects are acceptable (USDA, 1997).

Yes, there was No actual impact of consequence to the environment and without regulating the timing of the activity or the dredge nozzle size (section k). The regulations for both should not be changed from the previous 1994 permit regulations. Also in section K you attempt to regulate the storage and use of fuel, oil. These are expensive commodities that a miner would be very careful to conserve and protect. Being required to store them such a long distance away is not only a nuisance to get your work done but unsafe. Having a containment system close at hand in all circumstances would be the best practice. Attaching some type of rig to capture the full capacity of fuel is not even available to my knowledge and is not necessary. A drip pad could easily be rigged up to catch any accidental over flow.

Section (k) implies that silt and clay material should not be disturbed but again there is no evidence that this is a significant problem. Duration, intensity and mixing zone are the primary factors to consider.

### DURATION, INTENSITY, and MIXING ZONE

Persistent long term sediment sources have been shown to be the most detrimental to fish and fish habitat with low gradient streams being more vulnerable to irreversible clogging than high gradient streams (Chamberlin 1982). There is evidence suggesting that most western United States salmonids have evolved in systems that periodically experience short-term (days to weeks) elevated TSS/turbidity events (winter runoff, spring storms and floods) and are adapted to periodically elevated TSS exposures without adverse effects. (CH2M Hill 2000). Experiments of Dr. Griffin have shown that young fish live well up to 30 days in good water mixed with an amount of natural soil materials from two to three times as large as the extreme load of the materials contributed to the Rogue River by maximum conditions produced by placer mining (Vard 1938).

Newcombe and Jensen 1996, pointed to several important factors that must be considered when studying the effects of TSS on fish. The frequency and duration of the exposure, not just the TSS concentration, must be considered. They cautioned that adverse effects can become more pronounced with increased TSS concentrations and longer exposure durations in aquatic systems where elevated TSS conditions occur infrequently. In a system where elevated TSS conditions occur more frequently, fish can become acclimated to higher TSS levels and adverse effects can be less pronounced or nullified Newcombe (2003). Moyle's observation in 1982 showed support for this theory indicating that "fish and invertebrates apparently, were not highly sensitive to dredging in general, probably because streams studied naturally have substantial seasonal and annual fluctuations in flow, turbidity, and (on a local scale)-substrate."

The California Department of Fish and Game (CDFG) had it right when they presented their findings at the CDFG PAC meetings that the regulation of 6 hours a day does not imply. CDFG regulations should reflect scientific finding in preparing the SEIR. ~~turbidity created from suction dredge operations have insignificant impact on water quality is not a concern as part of the current or proposed permit requirements (Stopher, 2010).~~

Small scale suction dredging effects are less than significant, miners can employ the following three best management practices (BMP) to ensure there is no detrimental effect to fish. This could further aid in reducing any effects and improving water quality.

- 1) The duration of a turbidity plume within a 24-hour work period (Time in stream);
- 2) The intensity of the plume or degree of exposure [measured in Turbidity units (NTU)]; and,
- 3) Short term exceedance of water quality limits created by allowing an adequate mixing zone.

It takes approximately 24-hours, according to the studies cited above, for minor effects in fish to occur at turbidity levels most frequently identified. Mining occurs over short time periods of less than 24 hours (limited duration). Taking into account results of numerous scientific journal articles (which show suction dredging does comply with being below the recognized exposure threshold of 30 NTU at 500 feet), regulating turbidity based simply on duration of an in-stream work period makes sense. As previously stated the easiest approach would be to limit duration of in-stream suction dredging to the 1994 regulations allowing 1/2 hour after sunrise to sunset. The miners would be able to comply and still more than adequately meet water quality criteria not detrimental to fish and regulating compliance would not be cost prohibitive.

## FERTILITY PHASE

Suction dredging is the Best Management Practice which includes many benefits to the environment and should be allowed without restrictive and unnecessary regulations. Miners I have talked with are open to improving the environment through such things as:

Suction dredging is the Best Management Practice which includes many benefits to the environment and should be allowed without restrictive and unnecessary regulations. Miners I have talked with are open to improving the environments they work in and they do as they remove mercury, lead, and trash from our waterways that no other group of citizens can accomplish. Excavations from dredging operations can result in temporarily formed pools or deepen existing pools which may improve fish habitat. Deep scour may intersect subsurface flow creating pockets of cool water during summer which can provide important habitat for fish (Nielsen, 1994), especially in California where cold water refugia is at a premium.

I think that it is always important when defining new regulations that will effect so many to remember the fact that many individuals depend on suction dredge mining as their only income and for many more it is a necessary supplement to their income. According to the bulk of research out there suction dredge mining is insignificant and can produce beneficial results if allowed. Over regulation is not proactive regulation it is just wrong.

Sincerely,

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