

6/12/07 Workshop  
Suction Dredge Mining  
Deadline: 6/22/07 Noon

**From:** <Audiederich1@aol.com>  
**To:** <commentletters@waterboards.ca.gov>  
**Date:** Tue, Jun 12, 2007 10:52 AM  
**Subject:** (no subject)

6/12/07

RE: EFFECTS OF SMALL SCALE SUCTION DREDGING ON WATER QUALITY

Hello,

My name is Dan Diederich. I live and work in Auburn, Placer County, California. I am a recreational gold miner that has operated a 4" suction dredge on the North Fork American River from June to mid October for the past ten years.

I am writing this letter to ask the review board to consider all pertinent information available regarding the impact of small scale suction dredge use on the water quality of the rivers and waterways where they are presently allowed for the purposes of recreational mineral recovery.

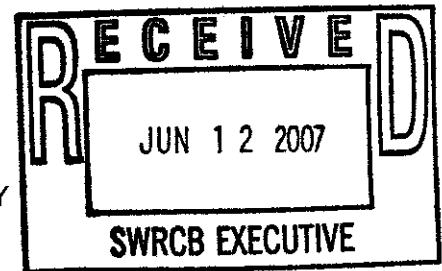
As an experienced and conscientious dredge operator my opinion is that small suction dredges operated within the regulations as outlined by the California DF&G have very little to NO lasting effects on water quality or the surrounding habitat near a small dredge operation. There are many published reports on the subject, excerpts from which I will include to illustrate my points of personal observation.

The most visible, yet relatively insignificant effect is increased turbidity of the water and the re-deposition of lighter inorganic material directly below the dredge while in operation. Typically in my experience turbidity dissipates within 100 feet of my dredge. Often it is substantially less than that and occasionally the increase is nil because of the type of material being processed.

"During a dredging test carried out by the California Department of Fish and Game on the north fork of American River, it was concluded that turbidity was greatest immediately downstream, returning to ambient levels within 100 feet. Referring to 52 dredges studied, Harvey (1982) stated "...generally rapid recovery to control levels in both turbidity and settleable solids occurred below dredging activity."

Hassler (1986) noted "...during dredging, suspended sediment and turbidity were high immediately below the dredge, but diminished rapidly within distance downstream." He measured 20.5 NTU 4 meters below a 5-inch dredge that dropped off to 3.4 NTU 49 meters below the dredge. Turbidity from a 4-inch dredge dropped from 5.6 NTU 4 meters below to 2.9 NTU 49 meters below with 0.9 NTU above. He further noted "...water quality was impacted only during the actual operation of the dredge...since a full day of mining by most Canyon Creek operators included only 2 to 4 hours of dredge running time, water quality was impacted for a short time." Also "...the water quality of Canyon Creek was very good and only affected by suction dredging near the dredge when it was operated."

The blow sand that accumulates directly below a dredge will linger until the first storm after dredge season, when it is scoured up and re-deposited,



generally in pockets, over a long distance in the stream below.

Fish species on the North Fork American include Small Mouth Bass, Rainbow Trout, Suckers, Hardheads, Squawfish, and Sculpin. I've observed some or all of these species line up in the vicinity of my dredge to take advantage of the increased supply of food particles and insect larvae kicked up by my dredge.

Sometimes fish will come to an area by the dozens knowing the food is abundant when the dredge is operating.

The North fork American is an uncontrolled river for most of it's length, which means there are no dams on it. Consequently, the summer flows drop off dramatically compared to other, controlled rivers in the area. The reduced water flow accounts for the relatively high water temperatures the river maintains from June to September. The impact on water temperature (increased temperatures) through the use of a small suction dredge is negligible at best. In the case of the North Fork American, they probably have the reverse effect. I see many fish take up residence in dredge holes, usually before I'm finished working them. The hole provides safe cover from other predator fish, and no doubt offers cooler thermoclines as the water can be much deeper in these areas.

Solar radiation is the single most important energy source for the heating of streams during daytime conditions. The loss or removal of riparian vegetation can increase solar radiation input to a stream increasing stream temperature. Suction dredge operations are confined to the existing stream channel and do not affect riparian vegetation or stream shade (SNF, 2001).

Suction dredging could alter pool dimensions through excavation, deposition of tailings, or by triggering adjustments in channel morphology. Excavating pools could substantially increase their depth and increase cool groundwater inflow. This could reduce pool temperature. If pools were excavated to a depth greater than three feet, salmonid pool habitat could be improved. In addition, if excavated pools reduce pool temperatures, they could provide important coldwater habitats for salmonids living in streams with elevated temperatures (SNF, 2001).

Dredge mining had little, if any, impact on water temperature (Hassler, T.J., W.L. Somer and G.R. Stern, 1986). In addition, the Oregon Siskiyou Dredge Study states, "There is no evidence that suction dredging affects stream temperature" (SNF, 2001).

In addition to recovering gold, I find a lot of lead in the stream bed, as well as recoverable amounts of mercury. Both of which, once recovered do not get thrown back into the river. It is collected and saved throughout the season and is removed from the canyon entirely. I know of no other method to remove these poisons from our rivers than through the use of suction dredges. The quantities are not great, but every little bit removed is positive and a step in the right direction.

In 2000, EPA and California's Division of Toxic Substance Control worked in concert with other State and local agencies to find the regulatory flexibility needed to collect mercury in a simple and effective manner. In August and September, 2000 the first mercury "milk runs" collected 230 pounds of mercury. A Nevada County household waste collection event held in September 2000 collected about 10 pounds of mercury. The total amount of mercury collected was equivalent to the mercury load in 47 years worth of wastewater discharge from

the city of Sacramento's sewage treatment plant or the mercury in a million mercury thermometers. This successful pilot program demonstrates how recreational gold miners and government agencies can work together to protect the environment (US EPA, 2001).

I am licensed by the DHS as a water treatment plant operator in the state of California. I was concerned about the effects of dredging on the water when I first got involved in recreational mining. With my training I have been able to conduct my own sampling and testing of the water during my dredge outings. I tested for turbidity, conductance, pH, temperature, and suspended solids on several occasions so that I might make a more informed decision on the matter. I am satisfied that the work I do dredging has no significant or lasting negative effects on the water quality, and I suspect that holds true for the many operators around the state.

In closing, may I urge you to please consider the arguments and available facts from both sides of this very important issue, and that the decision is made to continue the policies that allow for suction dredging on the many waterways in this wonderful state. I expect this will be the case after an in depth review is afforded this very important matter.

I appreciate your time and listening to my point of view on the subject.

A concerned citizen and ardent supporter of small scale suction dredge gold mining, thanks you again.

Sincerely,

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\*\*\*\*\* See what's free at <http://www.aol.com>.