Robert J. Fisher
John J. Fisher
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May 9, 2011

Mark Stopher
Environmental Program Manager
California Department of Fish and Game
601 Locust Street
Redding, CA 96001

Re: Comments on Draft SEIR and Regulations for Suction Dredge Program and Recommendation to Close the Lower McCloud River to Suction Dredging

Dear Mr. Stopher;

We appreciate the opportunity to comment on the Department's proposed suction dredge regulations. We offer these comments as landowners along the reach of the McCloud River in which the above draft regulations would authorize suction dredge mining and as supporters of the world class recreational fishing afforded by the McCloud River. While we have reservations about several of the statewide aspects of the proposed suction dredge regulations, we will limit our comments to issues directly related to the McCloud River.

We urge that the draft regulations be revised to close all of the McCloud River to suction dredge mining. Our recommendation is based on the following:

1. suction dredging in the McCloud River is inconsistent with other state designations meant to protect and enhance the McCloud as one of the premier fly fishing destinations in the western United States;
2. lawful access by dredgers to the portion of the McCloud that is proposed for dredge mining is extremely limited, setting up conflicts between dredgers and riparian landowners;
3. given the McCloud's popularity with anglers, the draft regulations would result in user competition and conflicts between dredgers and fly fishermen;
4. ostensible protections afforded redband trout by the draft regulations are insufficient and should be expanded to cover all the McCloud River and its tributaries; and
5. protection of the existing biological and recreational resources of the McCloud River should be given priority due to the absence of placer mining resources in the McCloud River watershed.

The draft regulations propose that the McCloud River from Section 36 (erroneously referred to as section 16 in the draft regulations), T38N, R3W to McCloud Dam be closed to suction dredging. While we support the closure, we believe that it should be extended to include the lower McCloud to protect the vibrant conditions that support the trout fishery there. The legislative policy for the McCloud River is succinctly stated: "management of river resources in their existing natural condition represents the best way to protect the unique fishery of the McCloud River." (Public Resources Code section 5093.50 et seq.). That policy would be advanced by closing the lower McCloud River to suction dredging.

As is obvious, portions of the lower McCloud River proposed to be open for suction dredging has little or no lawful access. We are apprehensive about the likelihood of conflicts between riparian landowners and dredgers frustrated by their inability to gain access to areas that the Department has declared "open" to them. Given the lack of access and the difficulty of moving dredges onto and off the river without damaging riparian habitat, we believe that the lower McCloud River should be closed to dredgers. Similarly, the popularity of the McCloud River with recreational anglers (many of whom gain access by wading in the river) suggests the likelihood of severe user conflicts if suction dredge mining is permitted in the lower McCloud River. The Department will lack the ability and capacity to "manage" these user conflicts once created; they should be anticipated and to the extent possible prevented by the proposed regulations.

The Draft Environmental Impact Report for the suction dredge program in section 4 (biological resources) suggests that the closure of the mainstem of the McCloud advances protections for redband trout. Redband trout are present in McCloud tributaries, not the mainstem, and yet the tributaries are open to suction dredging while the mainstem is partly open and partly closed. This seems illogical at best and at worst may reflect defects in the environmental analysis that underpins the draft regulation. Therefore, we suggest that protection of redband trout (a state "species of concern") requires closing McCloud River tributaries to suction dredging. Dredging in some of the McCloud River tributaries may be proscribed by the proposed rule prohibiting dredging within three feet of the lateral edge of water (section 228 k(3)) since the streams are six feet or less in width. If that is the intent of the proposed regulation (which we would support), it would be most efficient to simply designate all McCloud River tributaries as closed by the "three feet rule" rather than in effect requiring dredgers (and scarce enforcement personnel) to carefully measure a stream's width at all dredging sites.

Finally, we are unaware of anything in the history or geology of the McCloud River that would suggest the existence of the geological features or processes associated with the presence of gold there. Closure of the McCloud to suction dredging would not, then, foreclose opportunities to mine a gold resource. Therefore, preservation of the important existing biological and recreational resources of the McCloud River should take priority over suction dredge mining.

Thank you again for this opportunity to comment.

Sincerely,

Robert Fisher

John Fisher

Draft Subsequent EIR and Proposed Suction Dredge Regulations Comments

By
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Comments Regarding: Suction Dredge Permitting Program
Draft Subsequent Environmental Impact Report
California Department of Fish and Game
May 9th. 2011

The Administrative Procedures Act requires that from Notice to promulgation every step of the hearing process shall be MEANINGFUL, providing opportunity on all fronts avoiding that the rule promulgated will not adversely affect a property right, or interest in property. To provide to the contrary of at least this standard of MEANINGFULNESS is to commit a due process violation, likely causing an unlawful takings. The reason for an agency "public" meeting is in its essence to "ensure" that the proposed rule, when promulgated, will not adversely affect a property right.

In this respect, and regarding class "A" waters, even if there is no mining claim in a Class A water, the new rule will be a "taking" of federal Public Domain. The Congress of the United States has already disposed of the mineral estate in the Mineral Estate Grant of 1866. (**H.R.365**.) That means that the minerals on any public domain land now belong to the people, not the government. And a valid mining claim is private property.

The Congressional Act of 1866 (**H.R.365)** further provides that all mineral lands of the public domain are "Free and Open" to mineral exploration. Free and Open means that no federal or state agency can close federal mineral estate lands. This act of congress has never been rescinded or overturned. And no legislation or rule is able to overcome it. Class A waters are a "taking" by CDFG of private property in instances where miners hold valid mining claims. Case law has held that mining claims are private property.

The discovery of a valuable mineral deposit within the limits of a mining claim located on public lands in conformance with state and Federal statutes validates the claim. The classic statement of a mining claim as property is found in the U.S. Supreme Court case of *Wilber v. rel. Krushnic,* 280 US 306 (1930):

> *When the location of a mining claim is perfected under the law, it has the effect of a grant by the United States of the right of present and exclusive possession. The claim is property in the fullest sense of that term…The owner is not required to purchase the claim or secure patent from the United States; but so long as he complies with the provisions of the mining laws, his possessory right, for all practicable purposes of ownership, is as good as though secured by patent.*

In opposition to the solidly peer reviewed science we PAC members provided, CDFG has chosen to totally ignore the consultation of experienced dredgers and scientists. CDFG is regulating based on possibility of harm rather than CEQA requirements to show actual harm. Instead, CDFG has chosen to include unscientific and in some cases biased information to justify an agenda for gross overregulation.

C.D.F.G. does not have peer reviewed scientific evidence that supports any deleterious effect to fish and aquatic life. Therefore if there is no cause or negative impact to the environment as required by CEQA, no changes are needed from the 1994 dredging regulations.

Title 14. Natural Resources
Division 6. Resources Agency
Chapter 3. Guidelines for Implementation of the California Environmental Quality Act
Article 5. Preliminary Review of Projects and Conduct of Initial Study

(1) If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, the agency shall prepare a draft EIR. **Where is this substantial evidence?**

(5) Argument, speculation, unsubstantiated opinion or narrative, or evidence that is clearly inaccurate or erroneous, or evidence that is not credible, shall not constitute substantial evidence. Substantial evidence **shall include facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts.**

Mercury:

In regard to any mercury issue, CDFG has chosen the route of over-regulation instead of choosing a direction that could improve the waters of the state of California by accepting the aid of the dredging community who are ready and willing to help remove 98% of mercury from its waterways whenever possible. Currently, miners are the only user group that removes mercury from our rivers.

CDFG's lack of concern for miners or environmental improvement seems to be based on incomplete poorly planned out USGS research purposely carried out in a known hot spot unlike any other place in the state. There is no way that this research is indicative of rivers state-wide.

This USGS report in question authored by Fleck et al. includes highly suspect claims of environmental harm from mercury to California's waters using unscientific calculations projected from the dredge industry sales data never intended for that purpose nor collected using scientific method of the quality required for use in a scientific report. In doing so USGS does a disservice to the agency represented.

CDFG failed in the DEIR to consider, as requested, a magnitude of peer reviewed scientific research proving selenium's protective antagonism to mercury as presented to the CDFG public advisory committee. Selenium is in sufficient quantities in California's waters to be protective of any harmful effects of methyl mercury to fish and human health. The proof is available to show mercury is not detrimental to fish, birds, or mammals when sufficient selenium is available. This evidence was presented to CDFG in the PAC meetings. You chose to ignore it in favor of hearsay and unsubstantiated allegations.

CDFG's DEIR reflects their lack of leadership capability in presenting regulation based on solid scientific evidence.

CDFG has made an underhanded application of CEQA by their arbitrary decision to change the "baseline" to a no dredging scenario, therefore not comparing social, economic or environmental impacts to the way things have been for 14 years under existing regulations. That is the foundation of this whole SEIR. Rather than show <u>any</u> evidence that existing activity has been deleterious to fish, you just changed the baseline ("no dredging" moratorium,) which was ordered by the court because DFG had not done its job).

The 1994 CEQA process and resulting regulations have served well for 14 years. Any problems with suction dredging have already been addressed and dealt with in that CEQA. CDFG has irresponsibly spent an enormous amount of money to implement this new CEQA with absolutely no justification. You have not identified any **<u>significant effect</u>** to the environment as required by CEQA; therefore there is no justification for any changes in regulations.

The irresponsible actions of CDFG in this CEQA are guaranteed to result in numerous lawsuits against the state, which will result in huge monetary cost to the state just to defend, not to mention any resulting judgments that result from citizen's lawsuits.

The irresponsible and illegal actions of your agency have caused those you are attempting to regulate to research our position under the law. Although we have addressed our legal rights under federal law on federal land with your agency many times, CDFG seems to think that just because you are mandated to follow CDFG code that you are above the

law. In this respect I will advise you once again that the Congressional Act of 1866 / 1872 as amended is the supreme law of the land and no state or agency can overcome it. In federal law this is known as the **"Supremacy Clause".**

When the federal government declares in the 1872 mining law that all land on the federal domain is **"free and open"**, it means just that. For any agency to arrogantly close this federal land to prospecting or mining is illegal and can and will be prosecuted under federal law in federal court. It goes without saying that CDFG can promulgate and even prohibit activities on state land, but when you attempt this on federal domain it is patently illegal.

Under the 1994 regulations, which were put in place after a lengthy EIR process, endorsed by CDFG and the very same CDFG employees involved in this current EIR, suction dredging has proven to not be harmful to fish or environment. How about using a little reason in this process; there is no harm!

CDFG has spent an inordinate amount of resources to prove a negative, that is; to find scientific data that dredging harmed fish….data the State claimed to have in its possession prior to the court ordering the SEIR study be performed. And yet, the contents of the SEIR illustrate that the effects of suction dredging on fish, in every instance, is ***"Less than Significant".***

This is hardly an unbiased approach to this EIR. Moreover, CDFG ahs refused to produce any scientific data that it claims to have. If this is not a fabrication it should be included in this DEIR. To not include data that backs CDFG sworn testimony in a court of law is reprehensible, a well as illegal.

The SEIR results clearly illustrate that the State never possessed any additional scientific evidence they claimed would prove small-scale suction dredging was detrimental, in any way, to fish or wildlife beyond the data already analyzed in the 1994 EIR.

Proposed New Regulations:

It is impossible to complete an EIR on suction dredging without actually using a suction dredge to formulate the conclusions you have come to in this DEIR. The conclusions this DEIR comes to are nothing more than heresay and opinion, they are not based on any real world experience with an actual suction dredge. The citizens of this state deserve better from a state agency that is supposed to be professional. In addition, Horizon was a poor choice to put this EIR together. A professional company would never jump to the conclusions that they have in this process. Your whole process and your approach to it are little more than phantasy scenarios based on thin air. This is not meant to be sarcastic, but rather an honest evaluation based on your own evidence or lack of it in this DEIR.

This is what the California State Legislature ahs to say about mining: **Public Resources Code 2650:** (a) It is the continuing policy of the State of California, in the interest of the needs of society for the wise use of mineral resources and for other sound conservation practices, to foster and encourage private enterprise in all of the following activities:

(1) The development within the state of economically sound and beneficial mineral industries and metal and mineral product reclamation industries.

(2) The orderly and economic exploration, development, and utilization of the state's mineral resources and reclamation of metal and mineral products emphasis added).

Public Resources Code 2711: (a) **The Legislature hereby finds and declares that the extraction of minerals is essential to the continued economic well-being of the state and to the needs of the society,** and that the reclamation of mined lands is necessary to prevent or minimize adverse effects on the environment and to protect the public health and safety (emphasis added).

The EIR does not place an appropriate amount of emphasis on the reality that the proposed regulations would eliminate the only effective method of gold extraction upon thousands of miles of California's waterways, therefore reducing the value of property which Americans own there, in some cases, eliminating the value altogether.

Millions upon millions of dollars have been invested in mining properties which derive most of their value because suction dredges have been allowed to operate there under the 1994 regulatory framework.

Consider that the Klamath River streambed runs an average of 8-to-10 feet thick (sometimes more than 20 feet thick). But the efficient depth-capacity of a 4-inch dredge in experienced hands is only 4 feet. Therefore, DFG is proposing to make nearly all of the areas which remain open along the Klamath River off limits to **effective sampling** for viable gold deposits!

Speaking of viable gold deposits, CDFG and Horizon do not have the slightest clue concerning how gold deposits are found. The agency mistakenly assumes that gold is evenly distributed throughout the rivers. Nothing cloud be further from the truth. In this respect you propose that miners must submit up to six locations where a miner proposed to mine. This is an impossibility and speaks to the gross ignorance concerning the basics of suction dredge mining. One example should suffice. Miners need to sample in various places to find a pay streak that is recoverable. Simply put, he never knows 2here he will find it until he samples, which may require many different location that cannot be determined ahead of time.

This is just another example of an agency trying to regulate something it knows nothing about.

DFG should not further-limit the size of dredges under the statewide permitting program:

The only justification we can see in the SEIR for reducing
Dredge sizes in the proposed regulations is your *"precautionary approach."* As we have explained above, there is no basis for using such an approach at all, much less in this context. It is patently illegal under the CEQA guidelines, which state, among other things, that "there must be an essential nexus (i.e. connection) between the mitigation measure and a legitimate governmental interest" and "the mitigation measure must be 'roughly proportional' to the impacts of the project". 14 CCR 15126.4(a)(4). Obviously, "mitigation measures are not required for effects which are not found to be significant" (id. § 15126(a)(3)), and the SEIR presents no evidence that dredge sizes allowed under the 1994 regulations created a deleterious impact upon fish.

Power Winching
This was already explained to you during the PAC meetings:
In some dredge holes, a power winch provides the only safe and efficient means of progressing either when a rock is too heavy to move by hand, or when it cannot be rolled over other rocks that are in the way. We are discussing how heavy something is to move. Each person is different, but everyone has a limit. Some people are disabled. Some heavy rocks can exist up off the bedrock, and must be removed in order to avoid a very serious safety issue. All of this normally takes place down below the surface of the streambed where the result (of moving the rock 4-to-10 feet) will not have any impact upon the waterway above.

It is ridiculous to require a 1600 permit for winching boulders. It is completely unreasonable to require a miner to stop his work and leave the mining site to procure a special permit, which may take weeks to get. CDFG has suggested that a site specific visit may be required before a 1600 permit would be issued. Has it occurred to you that boulders are not just sitting on top of the gravel waiting to be seen by CDFG personnel? These boulders may reside anywhere in the gravel, all the way down to bedrock. So how do you think it is possible for your warden to determine if winching is needed when he/she cannot see them?

As a practical safety issue, when a miner encounters a boulder that is not on bedrock, but perhaps up in the wall of the gravel, it must be moved to keep it from accidentally falling on the miner. No miner would allow this situation to continue because of the possibility of serious harm or death to the miner.

Dredge mining between one half hour after sunrise to sunset:

What does this proposed regulation have to do with protecting fish? This is something we expect to see regarding hunting and possibly fishing. CDFG is proposing to dictate when where and how miners mine and the tools they can use. You certainly have no authority to implement regulations that even the federal government has no authority to implement.

In closing just let me say that suction dredge mining is regulated under the authority of the USACOE. This agency determined quite some time ago that they would no longer regulate or permit it simply because it was a de-minimus (no significant impact) activity.

Even the Federal EPA has determined in its peer reviewed study that suction dredge mining is de-minimus. It is very disconcerting that CDFG seems to think they know more about suction dredge mining than the agencies that are in place to regulate mining. The result is what you have come up with; a DEIR that surpasses all reason and borders on the ridiculous.

It is amazing to me that CDFG even put the PAC meetings together, what was the purpose? You used none of the information that miners and miners scientists turned in, listened to none of the testimony, but clearly implemented this DEIR and proposed regulations based on heresay from your own department. This is not to even mention the same old tired lies, distortions and half truths turned in by Tribes and Environmental activists.

It is amazing that an agency commissioned to enforce the law can so blatantly disregard it at will, such as you have done over and over again in the CEQA process.

Friends of the North Fork
7143 Gardenvine Ave.
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May 9, 2011

Mr. Mark Stopher
Department of Fish and Game
601 Locust Street
Redding, CA 96001

RE: Suction Dredge Program Draft SEIR Comments

Dear Mr. Stopher:

I am writing on behalf of Friends of the North Fork to provide our comments on the draft supplemental environmental impact report on the department's proposed regulations for instream suction gold dredge mining.

In our view, the dSEIR has fundamental elemental errors, the result of which is a document that does not comply with the California Environmental Quality Act. These foundational errors in the dSEIR then lead to many specific problems within the proposed regulations.

If the department feels that it lacks the authority to reduce the identified environmental impacts to a less than significant level, then it needs to adopt the "no program" alternative.

1. Scope of Regulatory Authority: DFG asserts that its authority to regulate suction dredging is limited entirely to its mandate under Fish and Game Code Section 5653. It is an absurd conclusion that DFG must allow the activity if it determines that suction dredging is not "deleterious to fish," even if it causes significant and unmitigable impacts to other wildlife for which DFG has an obligation to conserve, protect, and manage. Thus the dSEIR fails to identify ways to avoid or reduce environmental damage or to prevent environmental damage by requiring implementation of feasible alternatives and/or mitigation measures.

The inaccurate definition of DFG's regulatory authority results in nine significant and unmitigable impacts for which DFG failed to adopt feasible mitigation measures. If in fact DFG believes in its limited authority, why are there measures in the regulations, for instance, to minimize impacts to human safety, other recreational uses and traffic?

The inaccurate definition of DFG's regulatory authority leads it to write regulations telling dredgers that it is OK to dredge waters within state and national wild and scenic rivers boundaries, national parks, state wild trout streams, state parks, state wildlife areas and within counties where it is banned by local ordinance.

Among the 24 wild and scenic stretches now listed as open in the proposed regulations is the North Fork of the American River above the Iowa Hill bridge. This section is also a state-designated Wild Trout Water. The use of motorized equipment is specifically banned in the federal management plan for the Wild and Scenic North Fork. It is also inconsistent with its designation as a California Wild Trout Stream, which requires protection of the river's water quality and river bottom conditions. Under its designation as a California Wild and Scenic River, DFG is required to protect its fishery and wildlife values.

Illogical starting premises lead to absurd conclusions such as these. As officials from the United States Forest Service have told the department, listing waters as open when they are closed under federal regulations presents an overwhelming enforcement challenge for understaffed federal agencies.

And while DFG says it can't use any of its other legal authorities, the regulations would allow the use of suction hoses up to eight inches in diameter, the damming or restriction of stream flows and the use of motorized winches if the dredger complies with Fish and Game Code Section 1602. The department has an Attorney General's opinion dated January 6, 2000 in which it was concluded that Section 5653 does not authorize the department to issue permits that do not comply with the generally applicable regulations specifying equipment and methods of operation. It should be pointed out that an eight-inch hose has five times the capacity of a four-inch hose. If it is the department's conclusion that any hose bigger than four-inch hose would be "deleterious to fish," then the department does not have the authority to allow hoses with dramatically bigger capacity.

Furthermore, Section 1602 requires the department to respond to a request to use equipment more damaging to fish and habitat within 60 days. If it fails to respond, the dredger may use the equipment without permission or conditions from the department. The department does not have the personnel or funding to respond to the estimated 500 Section 1602 notifications that it estimates it will receive.

In addition, the proposed regulations open stream segments with the boundaries of California Indian reservations and rancherias. Tribal governments are not subject to state regulation, and the department has no authority to declare waters within tribal lands open to suction gold dredge mining. If a tribal government determines that dredging would be acceptable in waters on its lands, it will regulate the activity through tribal law.

2. Definition of "deleterious to fish: DFG's definition of "deleterious to fish" as harm that "manifests at the community or population level and persists for longer than one reproductive or migration cycle" is wholly inconsistent with legislative intent, previous court rulings and the common sense plain meaning of the word "deleterious."

The department's definition of "deleterious to fish" is so wildly off the mark that it taints the entire list of stream segment designations in the proposed regulation. It is an unprovable standard because it looks backward – we only know we have a problem after we have the problem.

As of last year, the department believed there was no record of legislative intent with regard to the definition of "deleterious." Friends of the North Fork researched the legislative history at the state archives and provided numerous documents to the department showing that the Legislature intended any damage to fish to be minimal.

As Friends informed the department last year, "deleterious to fish" found its way into the first California statute regulating suction dredge mining, Fish and Game Code Section 5653, in Assembly Bill 1459 (Arnold) in 1961. In his letter to the governor requesting a signature on the bill, Assemblyman Arnold used terms like "damage" and "disturb." He said dredging should be done so as not to cause anything other than "minimal damage" to fish. Impacts that he considered beyond "minimal damage" included disturbing eggs, disturbing fish food organisms and stirring up silt to cause an "aesthetic problem" and cover eggs.

The intent was clear. Any "damage" from dredging activities must be "minimal." Clearly, the author's view was that disturbing eggs, disturbing fish food organisms and stirring up silt to cause an "aesthetic problem" and cover eggs is more than minimal, and thus is "deleterious to fish."

No legislation since the original enactment of Section 5653 expressed any intent other than that expressed by Assemblyman Arnold in 1961 as to the meaning of "not deleterious to fish."

There is no basis in the legislative record to conclude that "deleterious to fish" means the draconian impact contemplated by the department. A definition that meets the legislative intent would be as follows:

"A vacuum or suction dredge operation and activities associated with its operation are deleterious to fish, mollusks, crustaceans, invertebrates, or amphibians if either (1) it deposits, alters, pulverizes or re-suspends any substance or material in the river, stream or lake that has a harmful effect on any life stage of "fish" or (2) alters the behavior of "fish" so as to have a harmful effect or (3) results in the modification or alteration of instream or riparian habitats in a way that has a harmful effect on the ability of "fish" to successfully feed, reproduce or evade predators."

3. Failure to study specific stream segments: DFG did not study specific stream segments, and so only vague conclusions concerning impacts can be reached. Without specific information on stream segments, there is no basis for DFG to conclude that the activity won't be "deleterious to fish" in stream segments that it proposes to open to suction gold dredge mining. In fact, DFG acknowledges that the data used to develop the regulations vary in quality and accuracy and that the proposed regulations "often reflect broad understandings of a species distribution within a

stream." Unless DFG can conclude that dredge mining will not be "deleterious to fish" on each stream segment it proposes to open, then it may not open that segment.

4. Failure to present and analyze an alternative with feasible mitigation measures: The dSEIR fails to comply with CEQA because it fails to present and analyze an alternative to the preferred program that reduces significant impacts to an insignificant level. CEQA requires that feasible mitigation measures be adopted. There are feasible mitigation measures short of the no program alternative, and they should have been presented and analyzed.

DFG will not be able to correct this failure by making a finding under CEQA that another public agency can and should make changes or alterations to the DFG regulations to reduce significant and unmitigable impacts of the proposed program. In some instances that agency is DFG. In the case of substantial adverse impacts to historical resources and unique archaeological resources, for instance, there is no public agency with authority to make changes or alterations to the DFG regulations.

The dSEIR indicates that mercury contamination is harmful to "fish," and the department has full authority, even within its self-restricted regulatory scope, to require feasible mitigation measures to reduce this significant impact to an insignificant level.

5. Failure to meet the dSEIR's own program objectives: Because it fails to provide feasible mitigation measures for the nine significant and unmitigable impacts and because it adopts an apocalyptic definition of "deleterious to fish," the dSEIR fails to meet its own program objectives, including to fulfill CDFG's mission to manage California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public; and to fulfill the CDFG's obligation to conserve, protect, and manage fish, wildlife, native plants, and habitats necessary for biologically sustainable populations of those species and as a trustee agency for fish and wildlife resources pursuant to Fish and Game Code Section 1802.

Furthermore, the program objective to develop a program that is implementable within the existing fee structure is incompatible with the above two objectives. The department simply cannot fulfill its trustee responsibility by implementing a program that does not pay its own way. The department's suction dredge permitting program has always cost significantly more than the income from license fees. In this case, it needs to determine how much enforcement capacity the existing fees will support and then limit the areas of number of permits issued to fit within that capacity. This is a recreational community with a long history of noncompliance with regulations, and to allow more activity than the department can monitor means it cannot make the finding that the activity is not "deleterious to fish."

6. Faulty Assumptions Lead to Bad Conclusions: First, the dSEIR defines suction dredging as using a hose that operates through the Venturi effect, a motorized pump, and a sluice box. There is

nothing in Section 5653 that allows this narrow definition of the activity. Dredgers make and operate "gravity" dredges, particularly in backcountry waters where hauling heavy equipment is impracticable. There are suction dredge hoses that operate without using the Venturi effect. By state law, suction dredging is any activity in which aggregate is vacuumed from the bottom by any kind of equipment.

Second, there is nothing in the regulations limiting multiple dredges from operating close together. The impact on "fish" is magnified many times when groups of dredgers gang up on a particular spot, and this is a common practice. Unless the regulations limit the number of dredges in a specific area, the department cannot conclude that the activity is not "deleterious to fish." Most other states require a minimum distance between dredges.

Third, the dSEIR concludes that as-yet unwritten "best management practices" pamphlet will reduce environmental impacts. Unenforceable BMP guidance is not an acceptable mitigation for environmental and cultural resource impacts – they need to be included in the regulations.

For the all of the above reasons, Friends of the North Fork urges the department to rewrite the proposed regulations to solve the foundational errors and to reduce all identified environmental impacts to a less than significant level. If the department determines that this is not possible, then it must adopt the "no program" alternative.

Sincerely,

/Michael Garabedian, President
Friends of the North Fork

May 9, 2011

CDF&G
California Department of Fish and Game
Attn: Mark Stopher
Suction Dredge Program Draft SEIR Comments
1 601 Locust Street
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e-mail: dfgsuctiondredge@dfg.ca.gov

Dear Mr. Stopher

I write to comment on the draft SEIR for suction dredging. My name is Gary Gailbreath and I have been an active miner and dredger for more than 30 years. I have two claims and have frequently dredged on private and public lands as allowed.

I have the following comments and suggestions regarding the draft SEIR and the process.

Overall I believe the document to be short sighted and a knee jerk reaction to a problem forced upon you by ill considered legislation. I believe far more study and creative thinking would result in a win/win outcome for dredgers and the environment. Not every concern, issue, or item of interest needs to be in the form of a regulation. I whole-heartedly support the concept of best management practices. Unfortunately, doing so thoughtfully and correctly under the present legal mandates would prevent dredging for several years while work is completed. WE have already lost two years. I therefore propose that the 1994 program rules be continued for a period of 2-4 years, and that during this period the following issues be addressed.

- Development of a best practices program to include
  - Best equipment for mercury capture, removal and disposal
  - Disposing of lead or other heavy metals
  - Refilling dredge holes, restoring stream beds if appropriate
  - Refueling practices.
  - Noise abatement considerations
  - Boulder movement and repositioning
  - Dredging clay
- Determination of optimum number of permits and methodology for for issuance.
  - There are many options here, most notably those used in commercial fishing
- Development of a Dredgers Code of Conduct for safe environmentally sound activities

Regarding the Draft SEIR I note the following

The no program alternative is completely uncalled for and is unacceptable

The water quality alternative and the reduced effort alternatives are a slow and painful death for dredging. They are unworkable.

Under the proposed program

- A limit of 4000 permits is too low and is not supported

A limitation on nozzle size of four inches is too small. Five inches is more appropriate.

The intake screen size is too small and not justified/supported

The requirement to not dredge within three feet of the lateral edge of the current water level, Including the edge of instream gravel bars or under any overhanging banks, is unworkable as a moving target. The current regulations are appropriate

Prohibiting use of motorized winches or other motorized equipment to move boulders, logs, or other objects unless an on site inspection is conducted and will be a bureaucratic and expensive nightmare and is unwarranted as the same result will arise from hand winches

Leveling tailings piles s prior to leaving the site is ridiculous as they never rise above the water. What is really wanted here?

This requirement is unclear as to its application. "No fuel, lubricants, or chemicals may be stored within 100 feet of the current water level at the time of dredging, otherwise a containment system must be used"

The requirement that a suction dredge operator permit number must be affixed to all permitted dredges at all times and in a manner that is clearly visible from the stream bank or shoreline is clearly unreasonable. What is gained by having engine model numbers on permits? I support listing 6 locations for dredging as long as I can change them with a letter to CDFG, as opposed to a trip or a certified letter or a waiting period with an acknowledgment 2 months later!

I would support the sun rise/sun down dredging restriction. Tables are readily available.

All engines should have working mufflers.

1.3.2 11-20 The following is a faulty assumption for a supplemental EIR "..... CDFG has determined that a conservative approach to identifying the12 environmental baseline is appropriate. As described above, instream suction dredge mining 13 is currently prohibited in California pursuant to a state law enacted shortly before the 14 publication o..... The same law and a related court order also prohibit CDFG from
16 issuing new suction dredge permits. CDFG has determined that the appropriate 17 environmental baseline for purposes of CEQA and the analysis set forth below is one that 18 assumes no suction dredging in California, because that was (and remains) the state of the 19 regulatory and physical environment at the time the NOP was published. The SEIR provides 20 a "fresh look" at the impacts of suction dredge mining on the environment generally.

4.4.1
Although some clubs recommend that all garbage, supply, food, and equipment
items be kept safely and in a clean manner to minimize hazards, it has been observed that
some miners have campsites strewn with garbage and debris (Sierra Fund, 2009). and
24No studies were available for this SEIR that comprehensively documented suction dredger's compliance with these laws; however, numerous anecdotal reports indicate observations of unsanitary conditions at suction dredge encampments (see25 for example Sierra Fund, 2009) While this impact is rated as less than significant, the language is pejorative. In any group there are those who misbehave. The fact that two percent of any group do so is not as important as the fact that 98 percent obey all laws. The Sierra Club is not in business and does not profit from reporting that most people in the woods act appropriately.

Thank you,
Gary Gailbreath
930 El Oro Dr, Auburn CA 95603

Subject: Proposed Suction Dredging Regulations
Date: Monday, May 9, 2011 8:26:01 PM PT
From: Joshua Hall
To: mstopher@dfg.ca.gov

Dear Mr. Stopher,

I am now a junior at Yreka High school. I am a 4.0 gpa student and president of the FFA chapter. I would like to let you know that my family started dredging in the 70's and have enjoyed it very much. It has been a hobby as well as a source of valuable income. I started dredging in 2007 until you close down suction dredging in 2009. I was looking forward to dredging on my own and using the gold I found to pay for college. But due to the ban, I have had to look for another summer job but have been unsuccessful in finding one.I find the DFG's lack of cooperation appalling. This last summer I went down to our local DFG office and asked them about what I can legally do now that dredging was closed (highbanking, sluice, etc..), I also asked if there was a special permit or study I could help with in order to dredge, and finally I asked if an DFG officer would like to come see what I was wanting to do in the way of highbanking and sluicing. The answer to all of these was no. I found this sad, here I am asking for input trying to be proactive and get advice and the DFG won't even put out some effort to help. Instead of advising and helping you do it right and in accordance with law, I was told that they only come out to issue warnings and cite you. I have several problems with the proposed regulations. First off the three foot from the bank rule is completely over the top what if you creek is only six feet wide such is the case where I dredge. Also i would like to see Humbug creek taken off the class A list. I have never seen a fish bigger than 6 inches on that creek and also it goes dry in parts during the summer. My family has a claim on this creek and it is were I wished to dredge if the ban was lifted.
In closing I would to like to see DFG go back to the 1994 regulations that were in place before the ban. Due to the new regulations being based on assumptions rather than real scientific research. I was looking at majoring in mining engineering and coming back to California to start a buisness, but after seeing these new regulations and the lack of willingness of the DFG to work with you, I have decided to change majors and go to school outside of California. I have no desire to live here once I am done with school.

Sincerely,

Subject: Proposed Dredging Permits

Date: Monday, May 9, 2011 9:04:21 PM PT

From: Mary Ann Hall

To: mstopher@dfg.ca.gov

Dear Mr. Stopher,

I am writing to express my concerns with the proposed suction dredging regulations. I started dredging in the 70's and have enjoyed it ever since not only as a hobby but a source of income during the summer. I am concerned with the proposed regulations lack of scientific evidence. The proposed regulations are based off of assumptions not facts. In addition how can you determine the impact of dredging with out every even going out and dredging yourselves.

- I would like to see Humbug creek reopened (listed as a class A) as I have two claims on humbug creek. This creek goes dry in spots during the summer.
- I have a problem with the proposed boulder removal regulations due to the fact that most boulders are unseen till after you start dredging.
- I would like to express my concerns with the three foot from the bank regulation as it is idiotic as some creeks are six feet or less wide. What do you do then?

Under all these proposed regulations were is the evidence that small scale suction dredging is deleterious to fish. I would like to see the 1994 regulations come back into effect. Due to the lack of scientific evidence on all the new proposed regulations.

Sincerely,

Jon Hall

Will Harling
75 Downs Ranch Road
Orleans, CA 95556

May 9, 2011

Mark Stopher
California Department of Fish and Game
601 Locust Street
Redding, CA 96001

Subject: Comments on February 2011 California Department of Fish and Game Suction Dredge Permitting Program DSEIR and Alternatives

Dear Mr. Stopher,

Please consider my comments in your preparation of the Final SEIR for the suction dredging permitting program. I have spent my entire life along the Klamath River and its tributaries. I was born in an old mining cabin on the Salmon River that my father maintained the right to occupy by operating a hardrock mine near the mouth of McNeil Creek on the South Fork Salmon River. We were evicted by the US Forest Service when I was four and the cabin was quickly burned down. Luckily, a long time Salmon River miner, Jerry Kramer, took us in, and eventually allowed our family to purchase a portion of his patented claim on the North Fork of the Salmon River.

When I was six years old, my father bought me a used wetsuit so I could watch him suction dredge in the river below our house, help him bring rocks up out of the hole, and clean the sluice box. We had a double drum that could move car-sized boulders around, allowing us to dredge some incredibly rich crevices never before plied for gold. I will never forget him waving me down to watch as he sucked up a line of fifteen or so nuggets in a row from a nice pay streak. Later on in high school, a friend and I dredged all summer long on Knownothing Creek, a tributary to the South Fork Salmon River. I made more money than I had moving wheel lines for a rancher in Scott Valley the summer before, and made some stories along the way. We found an 1811 dime on the bedrock under six feet of overburden. Aside from chasing salmon around, this was the best time I had growing up on the Salmon River.

But here is where this missive about the glories of suction dredging turns to the realities of an understudied, yet potentially highly impactful form of mining in some of the most pristine rivers and creeks in California. After my father and older brother both broke their legs logging, they encouraged me to follow another passion, which in my case was fish. Beginning in 1993, I worked for the USFS Klamath National Forest conducting fish surveys and implementing fisheries restoration projects. My work focused on the Oak Knoll and Happy Camp Ranger Districts, where I observed the deleterious effects of recreational club dredging on key fish habitat in productive tributaries to the Klamath River. I graduated from HSU in 1999, with a BS in Environmental Biology and minors in Fisheries, GIS, and Botany. Shortly thereafter, I helped

start the Mid Klamath Watershed Council (MKWC), which includes programs in Fisheries, Fire and Fuels, Invasive Weed Management, Adult and Youth Watershed Education, Wildlife, and Community Services. I have been the director of MKWC since its inception in 2001, and have directed the Fisheries program for the past ten years. My work keeps me in touch with conditions along the Klamath River from the mouth of the Trinity River up to Iron Gate Dam, and up the Salmon River where we collaborate on fish restoration projects with the Salmon River Restoration Council. I offer these comments knowing both sides of this issue all too well. These are not easy political choices to make, but given detailed analysis of the economical, ecological, and social issues surrounding suction dredge mining in the rivers of California, the impacts of this form of mining I believe far outweigh the benefits on all counts.

Comments and Recommendations on DFG 2011 Suction Dredge Permitting Program DSEIR

The comments and recommendations in this letter primarily concern the potential effects of the Department of Fish and Games' (DFG) DSEIR alternatives for the suction dredging permitting program on fish species that occur in the Klamath Basin that are listed under Federal and/or State Endangered Species Act (ESA-listed), that are a candidate for Federal ESA-listing, and/or that have been determined by one or more government agencies to be "at-risk" of becoming ESA-listed or going extinct. The sensitive runs of these fish species are generally considered "rare".

The Klamath River fish species of particular concern regarding DFGs' suction dredging permitting program are:

(1) Southern Oregon/Northern California coastal coho salmon which are listed as 'threatened" under State and Federal ESAs.

(2) Upper Klamath/Trinity Rivers Chinook salmon which are "Candidate" for ESA-listing by the National Marine Fisheries Service (NMFS), is a Forest Service Species of Concern, and is a DFG Species of Special Concern - primarily due to reduced distribution and weakness of spring run Chinook.

(3) Klamath Mountains Province steelhead trout which are a Forest Service Species of Concern and a DFG Species of Special Concern - primarily due to reduced distribution and weakness of summer run steelhead.

(4) Green sturgeon which are a DFG Species of Special Concern, a NMFS Species of Concern, considered "vulnerable" by the American Fisheries Society, and considered "near threatened" by the International Union for the Conservation of Nature.

(5) Pacific lamprey which are a US Fish and Wildlife Species of Concern and considered vulnerable by the American Fisheries Society.

All these species are in the Klamath streams at all times of year in various life history stages. These five fish species are of special economic and/or cultural importance in the Klamath Basin and/or regionally, and millions of dollars have been spent protecting and restoring salmonid habitat in Klamath watersheds. These comments and recommendations also concern the mollusks, crustaceans, and other aquatic animals and plants critical to maintaining water quality and the aquatic food web that can be adversely affected by suction dredging.

Below are my concerns on how DFGs suction dredging permitting program alternatives are likely to affect ESA-listed, candidate, and at-risk fish species in the Klamath System from Iron Gate Dam to the Trinity River, and recommendations on how the Reduced Intensity, the Water Quality,

and Proposed alternatives could be modified to provide minimum protection so that suction dredging is not likely to significantly reduce the viability of ESA-listed, candidate, and at-fish fish species.

Comment: The preponderance of the best available science concerning the effects of suction dredging on salmonids (such as the compilations in: Effects of suction dredging in streams: a review and evaluation strategy by Harvey and Lisle, 1998; and Small-scale Mineral Prospecting White Paper by Washington Department of Fish and Wildlife, 2006, conclude that (1) local studies are needed for reliably assessing impacts to fish and (2) in the absence of availability of local studies fish managers should suspect adverse effects to fish.

Not enough is known about local effects of suction dredging on fish and other aquatic organisms in the Klamath System. In the Klamath Mountains there has been little research and monitoring studies on suction dredging effects in general and particularly in the last 20 years as controversy over suction dredging effects on declining salmonid species and other fish has intensified. DFG has not collected sufficient local monitoring and research data to be able to predict how suction dredging affects fish and other aquatic life in Klamath Mountain streams, and it is uncertain that DFG and other agencies will have sufficient future funding and personnel resources to research and monitor suction dredging activities before adverse effects could occur.

The only study on the effects of suction dredging on salmonids in Klamath Mountain tributaries that has been conducted in the last 15 years (Harvey and Lisle, 1999) concluded that suction dredging can adversely affect the incubating eggs and alevins of coho and Chinook salmon (see comment below). For these reasons, the No Program would be the best alternative to protect fish and other aquatic organisms in the Klamath system and other California streams from suction dredging for which little research and monitoring data exists.

Comment: The DSEIR provides no scientific evidence in support of the claim that the requirement for dredgers to level all tailings piles will minimize the potential for fish to spawn on unstable substrate. Harvey & Lisle (1999) indicate that "where managers determine that unstable dredge tailings may lead to unacceptable effects on spawning success, these effects could be reduced or eliminated through regulations that require that tailings piles be redistributed to restore the original bed topography and particle size distribution". However, the permitting alternatives do not require restoration of original particle size distribution as the best available science indicates is necessary to reduce unacceptable effects on spawning success, and is not possible in most situations. As such, the best available science suggests that this regulation may be insufficient to minimize adverse impacts and potential deleterious effects to ESA-listed, candidate, and at-risk fish species. Currently, large sections of high quality spawning gravel for coho on Indian Creek are disturbed annually. I have personally observed multiple redds in or near dredge tailings, which increases their susceptibility to scour during normal winter flood events. I have also recently observed significant impacts to high quality Chinook salmon and steelhead spawning areas in the North Fork Salmon River from suction dredging.

Comment: The Proposed alternative on page 14 states that "No person may suction dredge within three feet of the lateral edge of the current water level, including at the edge of instream gravel bars or under any overhanging banks". That statement needs clarifying – does the statement mean that (1) suction dredges must operate only within current stream water level no closer than three feet to the streams wetted edge or does the statement imply that (2) suction dredging could occur three feet beyond the streams current wetted edge? I support case (1) over case (2) because wetted edges and

streambanks would be protected from suction dredging. Streambanks are already being eroded and degraded in "high-banking" mining operatons.

Comment: The DSEIR created a very high standard for dredging impact to be considered "deleterious effects" to fish and did not consider impacts to individual members of a population to be significant, unless the species was extremely rare. This definition is less protective than the Federal Endangered Species Act which prohibits the "take" of threatened or endangered species with more stringent protection of individuals and habitat: "Take may include significant habitat modification or degradation that actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering".

Comment: The DSEIR does not adequately substantiate the legislative history of the DSEIR definition of 'deleterious effect' to fish as: "one which manifests at the community or population level and persists for longer than one reproductive or migration cycle". **However**, assuming that the DSEIR definition is substantiated in the FSEIR, there are stream segments, such as the Klamath, Scott, and Salmon mainstems that have impaired water quality **and** ESA-listed, Candidate-listing ESA listing, and/or at-risk fish species, **but** little to no local research data to necessary to adequately assess effects of suction dredging. The DSEIR must consider cumulative effects and without local studies must assume that any additional disturbance from suction dredging in these impaired waters will adversely affect the viability of these rare fish species.

Comment: Watersheds that that the Forest Service has designated "Key" watersheds for the conservation and restoration of at-risk fish salmonid species under Federal Forest Plans should be closed to suction dredging. These waterbodies include the entire Salmon River including Wooley Creek; Dillon Creek, and Red Cap Creek, which were not included in the list of Class A streams in any of the alternatives. All of these Federally-designated Key watersheds should certainly be included in the list of Class A streams, however, to ensure protection of the viability of ESA-listed, candidate, and at-risk fish species, all stream segments that still provide habitat for these fish species should be considered refugia for the preservation and restoration of these species, and should be closed to suction dredging (Class A).

Comment: The DSEIR permitting alternatives should include suction dredging density limitations (in addition to the 500 foot distance stipulation in the DSEIR for thermal refugia in the Klamath system) in open waters according to species-at-risk and existing condition in each stream. In the Klamath Region, dredge density in open waters should be limited for the following reasons:

- The preponderance of suction dredging research is agreement that as suction dredging density increases so do potential for deleterious effects on water quality, the aquatic and riparian environment, and aquatic species.
- As suction dredging density increases more and more roads and encampments have been established in stream buffers to access mining claims. Mining roads reduce shade to streams and increase stream temperatures by directly destroying riparian vegetation or retards temperature recovery by preventing trees from growing due to motorized vehicle use and compaction. In the Klamath Region, more roads are being constructed or reconstructed by miners often with no notification to agencies and/or the agencies have limited authority to prevent or have much control over the mining access.
- As suction dredging density increases so do conflicts with other recreationists such as hikers, campers, naturalists, photographers, and swimmers. Complaints about suction dredgers from other recreation users cite issues related to access barriers, intimidation, noise, aesthetics, level of development, degraded ecological conditions and safety hazards. Suction dredgers and their associated campsites may conflict with other recreation user's expectations and enjoyment of quiet settings and natural areas as a result of aesthetics, sanitation, noise, garbage and air pollution concerns.

Comment: DFG should consider the recommendations of the 2010 US Fish and Wildlife Services' *Pacific Lamprey Conservation Initiative Best Management Practices* when drafting suction dredge mining regulations because some of the Best Management Practices restrict dredging in lamprey habitat.

Comment: DFG fails to adequately describe how the use and number of dredges (density) affects the potential for aquatic invasive species to be introduced to the Klamath River system.

Comment: Evaluate risk to public created by dredging excavation pits. Dredging often leaves behind deep under water pits excavated by the dredge. Although the Proposed alternative requires dredgers to fill in pits, this rule will not likely completely address this concern. The material excavated from the pit often washes downstream and is therefore not available to put back in the pit.

THE FOLLOWING COMMENTS ARE ORDERED BY COUNTY AND THEN STREAM:

Humboldt County: Klamath River mainstem from Salmon River to Trinity River

Comment: The lower Klamath River from Ishi Pishi Falls (just upstream from the Salmon River) to the Pacific Ocean be added to the list of streams closed to suction dredging (Class A) in order to protect ESA-listed, candidate, and at-risk salmonids, and at-risk green sturgeon, from the disturbance and habitat alteration associated with suction dredging.

All year closure of the Klamath River from Ishi Pishi Falls to the mouth is recommended to eliminate risk of deleterious effects from suction dredging to ESA-listed, candidate, and at-risk fish species. In the Klamath River mainstem, turbidity and disturbance from suction dredging is likely to have adverse impacts to ESA-listed, candidate, and at-risk salmonids due to the synergistic effects of these disturbances occurring during low-flows in a water quality impaired river system where

salmonids are already adversely affected by excessively high water temperature, poor water quality, toxic algae, and high incidence of pathogens. Green sturgeon enter the Klamath system between late February and late July and spawn from March through July. Green sturgeon enter an embryo and larval stage after hatching and have no or very poor swimming ability during this developmental period which can last into September. Green sturgeon juveniles rear in freshwater for as long as 110 days before large-scale downstream migrations begin to overwinting areas. Green sturgeon juveniles are largely nocturnal in their first 10 months of life and generally remain concealed in the substrate during the day (Kynard 2005) when suction dredging would be occurring. Closure of the Klamath River mainstem will eliminate the risk of entrainment, entrapment, loss of cover, or other deleterious effects of suction dredging on juvenile green sturgeon. Closure of the Klamath River mainstem would also eliminate risk to lamprey, mollusks, crustaceans and other aquatic plants and animals critical for maintaining water quality and the aquatic food chain.

Short of closing the Klamath River below Ishi Pishi Falls to eliminate risk of suction dredging effects to ESA-listed, candidate, at-risk salmonids, and green sturgeon; a density limitation on the number of suction dredges allowed to operate in open sections of the Klamath River needs to be established in order to minimize potential for deleterious effects not just to fish species viability but on other multiple use values as well. Based on insufficient local monitoring data and research, it is arbitrary to suggest that any suction dredging would not have deleterious effects on ESA-listed, candidate, and at-risk fish species in the water quality impaired Klamath River mainstem. However, suction dredging effects that could deleteriously affect the viability of these fish species would likely be negligible if the density and distribution of suction dredging in the Reduced Intensity, the Water Quality, and the Proposed alternatives is restricted to no more than two suction dredge operations per mile in open sections of the Klamath River mainstem that provide habitat for ESA-listed coho salmon and/or at-risk runs of spring Chinook salmon and/or summer steelhead trout. Limiting the density of dredges would also provide some protection for lamprey, mollusks, crustaceans, and other aquatic animals and plants critical for maintaining water quality and the aquatic food chain.

Humboldt County - Klamath River tributaries from the Salmon River to the Trinity River:

Comment: To eliminate risk of deleterious effects to ESA-listed, candidate, and/or at-risk salmonid populations from the disturbance and habitat alteration associated with suction dredging in Klamath River tributaries, all Klamath River tributaries and tributaries to Klamath River tributaries that provide habitat for ESA-listed coho salmon and/or at-risk populations of salmonids, specifically spring-run Chinook and summer-run steelhead should be closed to suction dredging.

I applaud the Class A designation of the Klamath River tributaries listed on page 27 of the Proposed Alternative because these streams protect important habitat for ESA-listed, candidate, and at-risk salmonid species, however, two additional tributaries, **Slate and Red Cap Creeks**, are just as important for the conservation and restoration of ESA-listed coho salmon and at-risk summer steelhead but are not included on the list of proposed Class A streams. To provide minimum protection for the viability of these fish species, the Reduced Intensity and the Water Quality and the Proposed alternatives should include **Slate and Red Cap Creeks** in the list of Class A streams in Humboldt County. In addition, all streams that support ESA-listed coho salmon and/or at-risk spring- and summer-runs of Chinook and steelhead that are tributaries to these Class A Klamath River tributaries also be designated Class A.

Siskiyou County - Klamath River from Iron Gate Dam to Salmon River near Ishi Pishi Falls:

Comment: The Klamath River from Iron Gate Dam to Ishi Pishi Falls (just upstream from the Salmon River) should be added to the list of streams closed to suction dredging (Class A) in order to protect ESA-listed, candidate, and at-risk salmonids from the disturbance and habitat alteration associated with suction dredging.

All year closure of the Klamath River from Iron Gate Dam to Ishi Pishi Falls is recommended to eliminate risk of deleterious effects from suction dredging to ESA-listed, candidate, and at-risk salmonid species. In the Klamath River mainstem, any increase in turbidity and disturbance from suction dredging is likely to have adverse impacts to listed and at-risk salmonids due to the synergistic effects of these disturbances occurring during low-flows in a water quality impaired river segments where salmonids are already adversely affected by excessively high water temperature, poor water quality, toxic algae, and high incidence of pathogens. Closure of the Klamath River mainstem would also eliminate risk to lamprey, mollusks, and other aquatic plants and animals critical for maintaining water quality and the aquatic food chain.

Short of closing the Klamath River from Iron Gate Dam to Ishi Pishi Falls to eliminate risk of suction dredging effects to ESA-listed, candidate, and at-risk salmonids, a density limitation on the number of suction dredges allowed to operate in open sections of the lower Klamath River is needed in order to provide minimum protection to protect viability of ESA-listed, candidate, and at-risk fish species from the deleterious effects of suction dredging. Based on insufficient local monitoring data and research, it is arbitrary to suggest that any suction dredging would not have deleterious effects on ESA-listed, candidate, and at-risk fish species in the water quality impaired Klamath River mainstem. However, suction dredging effects that could deleteriously affect the viability of these fish species would likely be negligible if the density and distribution of suction dredging in the Reduced Intensity, the Water Quality, and the Proposed alternatives is restricted to no more than two suction dredge operations per mile in open sections of the Klamath River mainstem that provide habitat for ESA-listed coho salmon and/or at-risk runs of spring Chinook salmon and summer steelhead trout. Limiting the density of dredges would also provide some protection for lamprey, mollusks, crustaceans, and other aquatic animals and plants critical for maintaining water quality and the aquatic food chain.

Siskiyou County - Klamath River tributaries from the Iron Gate Dam to Salmon River

Comment: To eliminate risk of deleterious effects to the viability of ESA-listed, candidate, and/or at-risk salmonid populations from the disturbance and habitat alteration associated with suction dredging in Klamath River tributaries, all Klamath River tributaries and tributaries to Klamath River tributaries that provide habitat for the most vulnerable runs of ESA-listed, candidate, and/or at-risk populations of salmonids (specifically coho salmon, spring-run Chinook and summer-run steelhead trout) be closed to suction dredging.

I applaud the Class A designation of the Klamath River tributaries listed on page 59-60 of the Proposed Alternative because these tributaries protect important habitat for ESA-listed, candidate, and at-risk salmonid species. However, 13 additional tributaries (**Beaver, Cade, China, Dillon,**

Fort Goff, Little Grider, Little Horse, King, Portuguese, Stanshaw, Titus, Ukonom, and Walker Creeks) are just as important for the conservation and restoration of one or more of the ESA-listed, candidate, and at-risk salmonid species but are not included on the list of proposed Class A streams. To provide minimum protection so that the viability of ESA-listed coho salmon, candidate, and at-fish fish species would likely be negligibly affected by suction dredging , the 13 Klamath River tributaries listed above should be included in the list of Class A streams in Siskiyou County. In addition, all streams that support ESA-listed coho salmon and/or at-risk spring- and summer-runs of Chinook and steelhead that are tributaries to Class A Klamath River tributaries should also be designated Class A.

Siskiyou County – Klamath River Thermal Refugia from Iron Gate Dam to Ishi Pishi Falls:

Comment: There should be larger in-stream buffers around specific Klamath River thermal refugia in order to provide full benefit to ESA-listed, candidate, and at-risk salmonid species, and to be consistent with the Klamath River TMDL Action Plan and Basin Plan Amendment - September 2010.

1. Some of the thermal refugia associated with Klamath River tributaries require larger downstream buffers than the (effective) 500 feet in the Proposed alternative because cold water plumes from these tributaries persist further than 500 feet downstream in the Klamath River thereby providing useable areas of thermal refugia for 1500 feet or more downstream from these tributary confluences. The Reduced Intensity, the Water Quality and the Proposed alternatives should be modified to provide 1500 foot in-stream buffers downstream from the following tributaries to provide adequate protection for Klamath River thermal refugia and to be consistent with the Klamath River TMDL Action Plan and Basin Plan Amendment-September 2010: **Aubrey, Beaver, Clear, Dillon, Elk, Grider, Horse, Indian, Rock, Swillup, Thompson, Ukonom.**
2. Some of the thermal refugia associated with Klamath River tributaries require larger buffers in the tributary streams upstream from their confluence with the Klamath River than the 500 feet in the Proposed alternative because ESA-listed, candidate, and/or at-risk salmonid species can swim further than 500 feet up these cool tributaries to utilize cool water for thermal refugia. The Reduced Intensity, the Water Quality and the Proposed alternatives should provide 3000 foot in-stream buffers in tributaries upstream from the mouths of the following tributaries to provide adequate protection for ESA-listed, candidate, and/or at-risk fish species, and to be consistent with the Klamath River TMDL Action Plan and Basin Plan Amendment -September 2010: **Aubrey, Beaver[2], Clear[1], Dillon[2], Elk[1], Empire, Fort Goff[2], Grider[1], Horse[1], Indian[1], King, Little Horse, Little Humbug, Mill, Nantucket, O'Neil, Portuguese, Reynolds, Rock, Sandy Bar, Seiad[1], Stanshaw, Swillup, Thompson[1], Ti, and Titus.**

   (1) = these streams are Class A under the proposed regulation so would be closed to dredging anyhow;

   (2) = These streams are recommended to be designated Class A in a previous comment..

Siskiyou County - Salmon River Mainstem and Tributaries:

Comment: In order to eliminate potential deleterious effects of suction dredging on ESA-listed, candidate, and at-risk salmonid species and green sturgeon, the KNF recommends

closure (Class A) of the Salmon River and all tributaries to the Salmon River that provide habitat for ESA-listed coho salmon and the most vulnerable runs of at-risk salmonid species - spring Chinook and summer steelhead, and that provide habitat for green sturgeon.

The Salmon River including all subbasins is designated a Forest Service "Key" watershed for protection and restoration of ESA-listed and at-risk fish species. Turbidity and disturbance from suction dredging in the Salmon River is likely to have adverse impacts to ESA-listed, candidate, and at-risk salmonids due to the synergistic effects of these disturbances occurring during summer low-flows in an impaired river system where salmonids are already adversely affected by excessively high water temperature in summer. To provide full protection for ESA-listed, candidate, and at-risk salmonid species the closure (Class A) of all segments of the Salmon River and tributaries to the Salmon River that provide habitat for ESA-listed coho salmon or at-risk spring Chinook salmon or summer steelhead trout is recommended. The Salmon River closure would also protect green sturgeon that spawn and rear in the lower mainstem Salmon River from Freight Train Rapid to the mouth. Green sturgeons enter the lower Salmon mainstem between late February and late July and spawn from March through July. Green sturgeon enter an embryo and larval stage after hatching and have no or very poor swimming ability during this developmental period which can last into September. Green sturgeon juveniles rear in freshwater for as long as 110 days before large-scale downstream migrations begin to overwinting areas. Green sturgeon juveniles are largely nocturnal in their first 10 months of life and generally remain concealed in the substrate during the day (Kynard 2005) when suction dredging would be occurring. Closure of the Salmon River mainstem would eliminate the risk of entrainment, entrapment, loss of cover, or other deleterious effects of suction dredging on juvenile green sturgeon.

Short of closing Salmon River streams known to provide habitat for ESA-listed, candidate, at-risk salmonids and green sturgeon, there needs to be a density limitation on the number of suction dredges allowed to operate in open sections of the Salmon River mainstem and the North and South forks in order to provide minimum protection for the viability of ESA-listed, candidate, and/or at-risk salmonids, and/or green sturgeon. Based on insufficient local monitoring data and research to date it is arbitrary to suggest that any suction dredging would not have deleterious effects on ESA-listed and at-risk fish species in the water quality impaired Salmon River mainstem and North and South Forks of the Salmon. However, limiting the density and distribution of suction dredging in the Reduced Intensity, the Water Quality, and the Proposed alternatives to (1) no more than one suction dredge operation per mile in the Salmon River mainstem and in the North and South Forks of the Salmon River and (2) to close all other tributaries that provide habitat for ESA-listed coho salmon and/or at-risk runs of spring Chinook salmon and summer steelhead trout would not be likely to have significant deleterious effects on the viability of these fish species. Limiting the density of dredges would also provide some protection for lamprey, mollusks, crustaceans and other aquatic animals and plants critical for maintaining water quality and the aquatic food chain.

Siskiyou County - Salmon River Thermal Refugia:

Comment: Short of closing all Salmon River streams known to provide habitat for ESA-listed, candidate, and at-risk salmonids and green sturgeon, the Reduced Intensity, the Water Quality, and the Proposed alternatives should include the following Salmon River tributaries in the list of Special Closures for Thermal Refugia in the Salmon River Watershed because these are some of the most important thermal refugia in the Salmon River watershed:

Crapo Creek, and Wooley Creek.

Siskiyou County - Scott River Mainstem and Tributaries

Comment: In order to protect ESA-listed and at-risk salmonid species from the disturbance and habitat alteration associated with suction dredging, the Scott River and all tributaries to the Scott River that provide habitat for ESA-listed coho salmon and/or the most vulnerable runs of at-risk salmonid species should be closed to suction dredging (Class A).

Turbidity and disturbance from suction dredging in the mainstem Scott River is likely to have adverse impacts to the viability of ESA-listed and at-risk salmonid species due to the synergistic effects of these disturbances occurring during summer in a water quality impaired river system where salmonid species are already adversely affected by excessively high water temperature, excessively low flows, and poor water quality. To provide minimum protection from suction dredging for ESA-listed and at-risk salmonid species all segments of the Scott River and tributaries to the Scott River that provide known habitat for ESA-listed coho salmon and at-risk summer steelhead should be closed to suction dredging (Class A).

Short of closing Scott River mainstem and tributaries known to provide habitat for ESA-listed coho salmon and/or summer steelhead trout, a density limitation on the number of suction dredges allowed to operate in open sections of the Scott River mainstem is needed to protect the viability of these fish species. Based on insufficient local monitoring data and research to date it is arbitrary to suggest that any suction dredging would not have deleterious effects on ESA-listed and at-risk fish species in the severely water quality impaired Scott River mainstem. However, limiting the density and distribution of suction dredging in the Reduced Intensity, the Water Quality, and the Proposed alternative to (1) no more than one suction dredge operation per mile on the mainstem Scott River and (2) including **Etna, Kelsey, Kidder, and Mill (near Scott Bar) Creeks in** the list of Class A streams for Siskiyou County, would not be likely to significantly affect these species' viability. Limiting the density and distribution of suction dredging would also provide some protection for lamprey, mollusks, crustaceans, and other aquatic animals and plants critical for maintaining water quality and the aquatic food chain in the Scott River.

Siskiyou County - Scott River Thermal Refugia:

Comment: Short of closing all Scott River mainstem and tributary stream segments known to provide habitat for ESA-listed coho salmon and/or summer steelhead trout, the Reduced Intensity, the Water Quality, and the Proposed alternatives should include Special Closures for Thermal Refugia in the Scott River Watershed. This would entail designating a 200 foot radius closure centered on the confluences of the following Scott River tributaries known to provide thermal refugia:

Canyon, Etna, French, Kelsey, Kidder, Mill, Shackleford, and Thompkins.

SUMMARY

It is my opinion that the No Program Alternative is the best alternative to protect ESA-listed, candidate, and at-risk fish species because there would be no additional risk to the viability of these rare fish species or their habitat from suction dredging. The Reduced Intensity Alternative will likely reduce suction dredging intensity in the Klamath River and tributaries but it is unclear whether that alternative would prevent a concentration of dredges on the Klamath River that could adversely affect the viability of ESA-listed, candidate, and at-risk fish species. The Proposed Alternative and the other permitting alternatives are unlikely to adequately protect the viability of ESA-listed, candidate, and at-risk salmonid species in the Klamath system due to excessive disturbance and habitat alteration in impaired waters, in designated fish refugias, and in critical habitat for ESA-listed coho salmon. The No Program alternative would best enable DFG and other resource management agencies to meet their mandates' and the publics' expectations to maintain species viability. The Reduced Intensity, the Water Quality, and the Proposed alternatives, ***with the modifications recommended in this letter***, would not be likely to significantly affect the viability of ESA-listed, candidate, and at-risk salmonids, green sturgeon, and Pacific lamprey. The 1994 Regulation Alternative is not likely to maintain viability of ESA-listed, candidate, and at-risk fish species nor could be the alternative be modified to provide enough protection from deleterious suction dredging effects to maintain the species viability of ESA-listed, candidate, and at-risk fish species in the Klamath River system.

Mark Stopher
California Department of Fish and Game
Suction Dredge Program Draft SEIR Comments
601 Locust Street
Redding, CA 96001

Please take notice that I am the owner of the Gooby N Mine claim, located on Humbug Creek in Siskiyou County (Bureau of Land Management CAMC # 282369). I have reviewed your proposed regulations for suction dredging, which appear to forbid any and all suction dredge mining on my claim. Because suction dredging is the only practical method of mining the valuable underwater gold deposits on this claim, you are proposing to forbid all mining on my claim.

This is a violation of federal law forbidding material interference with my federally-protected mineral rights, and also constitutes an unconstitutional taking of my private property without just compensation.

I urge you to reconsider your proposed regulations. This area had strong fish runs for decades during and after hydraulic and other large scale mining, and there is no credible case whatsoever for harm to fish from small-scale suction dredging operations. A single fisherman with a good day on the river causes more damage to fish than all the suction dredge miners put together, and you allow the fishing. Focusing environmental regulation on an activity like suction dredging, which actually improves fish habitat, discredits your regulatory role generally.

If you do not reconsider, and allow me to mine my claim, you may rest assured that I and other miners will hold you accountable in the courts for your outrageously unlawful and arbitrary decisions.

Sincerely,

Eileen Myles Hawkins

_____

_____

Subject: Suction Dredge Permitting Program
Date: Monday, May 9, 2011 10:26:40 AM PT
From: Doug Heiken (sent by dh.oregonwild@gmail.com <dh.oregonwild@gmail.com>)
To: dfgsuctiondredge@dfg.ca.gov

FROM: Doug Heiken, Oregon Wild | PO Box 11648, Eugene, OR 97440 | 541-344-0675 | dh@oregonwildorg
TO: dfgsuctiondredge@dfg.ca.gov
ATTN: Mark Stopher, California Department of Fish and Game
DATE: 9 May 2011
RE: Suction Dredge Permitting Program

Please accept the following comments from Oregon Wild regarding the proposed Suction Dredge Permitting Program.

I want suction dredging prohibited in the upper East Fork Illinois River, upper Applegate River and their tributaries in Siskiyou County, California for the following reasons:

1. Remoteness from California staffing resources causes high expense with enforcement/monitoring. These areas can only be accessed via roads through Oregon.

2. Lack of enforcement/remoteness emboldens dredgers to not follow California regulations.

3. Viable populations of federally listed coho that spawn and rear in upper East Fork Illinois would be harmed. Habitat would be damaged due to disdain for regulations in this remote area.

4. Contamination of upper Applegate River, tributaries , and Applegate Lake due to mercury from historic mining and severe toxic metal contamination from the Blue Ledge mine. Suction dredging would likely re-suspend these toxic materials. http://www.fs.fed.us/r6/rogue-siskiyou/projects/mines/index.shtml

5. Pollution from dredgers would cross the Oregon/California state line and contaminate Oregon streams.

Sincerely,

/s/

_____

Doug Heiken, Oregon Wild
PO Box 11648, Eugene OR 97440
dh@oregonwild.org, 541.344.0675

MARK STOPHER
CALIFORNIA DEPT of FISH and GAME
601 LOCUST STREET
REDDING, CA. 96001

Sir:

As a current claim holder in Siskiyou county, and long time miner/dredger in Northern California we offer the following comments regarding the Proposed Regulations for suction dredging, and SEIR. (Time and space prevent us from replying on many more items on the hundreds of pages of this Proposal.)

1. This is nothing but an attempt to restrict and circumvent our Federally Granted Mining rights, and is an outright Taking of our mining claims, which will likely be met with a class action suit by the miners against the state of California.

2. Limit of 4000 permits for dredgers. Again this is a Taking if I am a claim owner and cannot purchase a permit. This doesn't take in consideration any population growth. I can't find any other users "Fisherman, Rafters, Kayakers etc". that are required to have one of a limited number of permits in order to enjoy the outdoors. If you limit the number of permits then the permits should be transferable. **The 4000 limit on permits must be eliminated**.

3. Three-Foot Rule. If your intentions are meant to protect life forms in this zone **then you must also restrict Fisherman, Rafters, Swimmers, etc. from walking or using this three-foot area**.

4. 3/32" Screen on intake. **This is completely unworkable, and unwarranted**. There is no evidence that small fish are harmed or entrained by larger openings on dredge intakes. Current size is adequate.

5. Power Winching. Winching is used as a safety issue to prevent rocks from falling / sliding on to the miners. The old rule of if the rock is wet it stays wet, if its dry it stays dry works very well. Waiting for an on site inspection could take weeks. Is DFG willing to fund / hire the people for the site survey.
This change is unnecessary.

7. Changes to the mining seasons. The old mining seasons have worked for years, and years. **Why are the miners being treated differently than other user groups "Fishman, Rafters, Swimmers etc"?**
No Change Necessary!

8. 4" Nozzle size restriction. A 4" dredge has a nozzle inside diameter of about 3 3/8 inches making it a sampling machine only. You cannot make wages with a 4 inch dredge.
Leave the nozzle size as they were in the 1994 regulations.

9. Fuel should be allowed within 100 feet of a waterway, if kept in a proper watertight container. Thousands of boaters use California waterways every day, and are not subject to these rules, **why should the dredgers be treated differently.**

10. **Mussel Beds. This is truly an unrealistic requirement, and must be removed from the Regulations.**

11. **Dredging Befits Removal of Toxic Metals "Mercury / Lead "** from the rivers and streams of California. The 1994 EIR found the Suction Dredging would have a beneficial impact to capture and remove lead and keep it from entering the food chain. **SEIR** does not acknowledge, based on your own survey results that dredgers have been removing over 7,000 ounces of mercury or more every year under the 1994 regulations from California's waterways. That amounts to 98,000 ounces during the last 14 years we operated under the 1994 regulations.

    The state of California is not doing a thing to remove mercury from the waterways, but you point the finger that the dredgers who are the only ones that are removing the mercury and for free.

12. **The economic cost to the state of California** since the dredging band in 2009 has been the loss of hundreds of millions dollars each year. Jobs have been lost and businesses have closed. The proposed regulations and SEIR will continue the hardships on local areas and the miners trying to make a living doing something they love.

    You say we can still mine with a pan, isn't that just great.

    DFG does not have the manpower, or resources to enforce the proposed regulations and inspections with out waiting or weeks and months. This just another way to keep us out of the water.

Thank you for giving careful considerations to our suggestions and comments!

Sincerely,

Jeffrey L Henderson 5-4-11

7611 S 525 W

Willard 84340

MARK STOPHER
CALIFORNIA DEPT of FISH and GAME
601 LOCUST STREET
REDDING, CA. 96001

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Sincerely,

Robert L Hunt 76065.525 VK. 5/4/2011
Willard, Ut.

MARK STOPHER
CALIFORNIA DEPT of FISH and GAME
601 LOCUST STREET
REDDING, CA. 96001

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Thank you for giving careful considerations to our suggestions and comments!

Sincerely,

Shirley W Henderson 5-5-2011

7606 S. 525 W
Willard, UT 84340

PUBLIC LANDS FOR THE PEOPLE INC.
501 C-3 NON PROFIT ORG.
7194 CONEJO DRIVE
SAN BERNARDINO, CA. 92404
909-889-3039

Re: Comments on the California Draft Subsequent Environmental Impact Report (DSEIR) on Suction Dredge Mining in California.

California Department of Fish and Game May 9, 2011
Att. Mark Stopher
Suction Dredging Program Draft SEIR Comments.
601 Locust st.
Redding, Ca. 96001

Dear Mr. Stopher

Public Lands For The People Inc. (PLP) has asked Dr. Crittenden to review and comment on the Ca. Department of Fish Game (DFG) Draft Subsequent Environmental Impact Report (DSEIR) for the purposes educating and advising the DFG in a direction to re-think and change their proposed alternative on suction dredge mining regulations.

Dr. Crittenden has 2 PHD's is a Doctor of Biology and Ecology and has several PEER reviewed papers to his credit. He has agreed to do these comments for PLP and this is notice to the DFG that PLP is adopting Dr. Crittendens comments on the DFG DSEIR 2011.

We have attached Dr. Crittenden's comment papers on the DSEIR to this notice to Mark Stopher, DFG.

Respectfull Submitted

Gerald Hobbs

jerhobbs2@verizon.net

Comments on the Suction Dredge Permitting Program

Draft Subsequent Environmental Impact Report (February 2011)

By Dr. Robert N. Crittenden

P.O. Box 222, Carlsborg WA 98324 Phone: (360) 504-2405

Prepared for Public Lands for the People,

7194 Conejo Dr. San Burnadino, CA 92404, Phone: (909) 889-3039

Summary:

1. The Draft Subsequent Environmental Impact Report (DSEIR) does not adequately consider the beneficial effects that hydraulic dredging can have, due to its cleaning silt and fine sediment particles out of the salmon spawning and rearing gravels and, also, by removing lead and mercury from the system.
2. I am concerned that the proposed regulations may over-regulate.
3. The proposed regulations use a one-size-fits-all approach and do not employ local scientific knowledge where it is available. Consequently, they can be expected to not be reasonable for many specific locations.
4. Restricting the permits to three listed locations is another example of over-regulation.
5. The proposed regulations need to be careful not to constitute an illegal tax.

1. The DSEIR does not adequately consider the beneficial effects that hydraulic dredging can have, due to its cleaning silt and fine sediment particles out of the salmon spawning and rearing gravels and, also, by removing lead and mercury from the system.

This omission from the DSEIR may be due its authors relying upon the (1998) review by Harvey and Leslie on the impacts of dredging. They said that dredging would decrease the stability of the stream-bed and, thereby, increase scour and the resulting mortality rate of eggs and alvins. However, that was only conjecture on their part, unsupported by any scientific study. In contrast, earlier studies on the use

of dredging and related equipment to restore or enhance spawning gravels showed that these activities enhanced salmonid survival. Those studies were entirely omitted from their review and, also, from the DSEIR.

So, below, I will briefly review the importance of spawning and rearing gravels; next, I will briefly review those early studies on the use of dredging and related equipment for the restoration and enhancement of spawning and rearing gravels; and, finally, I will recommend not only that these beneficial effects be considered as mitigation or partial mitigation but that, when the hydraulic dredging equipment is appropriately applied or modified, its use should be regarded as, being primarily environmental restoration or enhancement.

Habitat for salmonid eggs and alevins — the importance of stream-bed porosity:

The following brief review of the importance of the porosity of spawning gravels is taken from a report that I wrote, in 1996, for a group of recreational gold miners in Washington State. That report was submitted in a public hearing and is, therefore, a public document. It rests primarily upon Groot and Margolais's, 1991, comprehensive review*, Pacific Salmon Life Histories.*

Salmonid eggs and alevins (alevins are tiny newly hatched salmonids which still reside in the interstitial spaces among the gravel of the stream-bed) need clean gravels through; which interstitial water can flow, providing them with oxygen. Silts and fine sands reduce the porosity of the stream-bed, thereby, reducing the interstitial flow and the oxygen supply. It can also reduce the amount of interstitial space for alevins. Reduced porosity has been shown to be directly related to reduced survival of salmonid eggs and alevins.

Pink Salmon: As William R. Heard pointed out in his (1991) review "Pink salmon choose a fairly uniform spawning bed in both Asia and North America. Generally these spawning beds are situated on riffles with clean gravel or along the borders between pools and riffles in shallow water with moderate to fast currents. . . . pink salmon avoid spawning in quiet deep water, in pools, in areas with a slow current, or over heavily silted or mud-covered stream-beds."

Pink salmon *(Oncorhynchus gorbuscha)* spawning sites may be characterized as being clean gravels. However these sites may also have a few cobbles, a mixture of sand, but relatively little silt (Semko 1954; Kobayashi 1968; Dvinin 1952; Smirnov 1975; and Hunter 1959).

The faster the current, the larger the particle which will be suspended and carried off by it. Hence, a strong current provides some guarantee that silts and fine sands will not plug up the interstitial spaces. The more rapid flow is also turbulent. The eggs and alevins are provided with a good oxygen supply by the turbulent mixing of water into the interstices of the stream-bed.

The porosity of a stream-bed and the survival of eggs and alevins has been demonstrated to be directly related to the composition of the stream-bed, being lower where there are more fine sands and silt (McNeil and Ahnell 1964; Rukhlov 1969; Brannon 1965; Bams 1969).

Chum Salmon: In contrast, to pink salmon which preferentially select riffles, chum salmon *(Oncorhynchus ketd)* tend to select sites of upwelling spring water (Kobayashi 1968). These sites often have a lower flow rate than is found at pink salmon sites (Bams 1982; Soin 1954; Sano and Nagasawa 1958). Chum salmon spawning sites may be found directly below a pool which is partially obstructed at its lower end by a gravel bar. The water infiltrates the gravel bar, travels through the bar as ground

water, and reemerges into the water column below the bar.

Interstitial flow is as important for the survival of their eggs and alevins, as it is for the pink salmon. However, in this case the oxygen is carried into the groundwater by convection (that is by the net movement of water into and then out of the stream-bed) rather than by turbulent mixing. However, in some cases turbulent mixing may also be an important factor at chum spawning sites.

Sockeye Salmon: The southern limit of their range is in Washington State, so, they are not a concern in California. Nevertheless, I include them to show how very general the effects of porosity are. --- Sockeye salmon *(Oncorhynchus nerka)* spawn either in streams or in areas along lake shores which have underwater springs. . There is also a case of beach spawning where turbulence provides the oxygen supply (Olsen 1968). Spring-fed and Beach spawning sites often have lower oxygen levels than stream sites and sockeye eggs have some ecological and physiological adaptations which improve their survival under those slightly reduced oxygen levels. (Smirnov 1950; Soin 1956, 1964). However, their oxygen supply (and, hence, substrate porosity) remain an important factor affecting their survival.

Coho Salmon: Coho salmon *(Oncorhynchus kisutch)* mostly spawn in small steams in areas of gravel of 15 cm or less in diameter (Burner 1951). In some cases Burner found that the spawning sites contained mud, silt, or fine sand, but that this was removed in the nest-building activity. Chamberlain (1907) concluded that coho are the least selective of the salmon species about their spawning site — he found them spawning in almost every stream or river in a very broad range of sites from smoothly flowing to white water and from cobble to muddy His conclusion was also supported by Foerster (1935) and Pritchard (1940).

However coho appear to prefer small streams (Gribanov 1948) and select a site at the head of a riffle where there is a good interstitial flow (Shapovalov and Taft 1954). The porosity of the stream-bed and the flowrate of the stream are also important factors affecting site selection (Briggs 1953; Gribanov 1948). Survival has been shown to be related to the porosity of the stream-bed (Tagart 1984).

King Salmon: King Salmon *(Oncorhynchus Tshawytscha)* show strong selectivity for spawning areas with high interstitial flow rates (Vronskiy 1972; Russell et al. 1983). Mike Healey (1991) suggests that of all the salmon species, king salmon may be the most sensitive to reduced oxygen levels during the egg and alevin stages. Their sensitivity to the oxygen level was experimentally demonstrated by Silver et al. (1963). The strong relationship between survival and the percolation rate of oxygenated interstitial water was experimentally demonstrated by Shelton (1955) and demonstrated under field conditions by Gangmark and Broad (1955) and Gangmark and Bakkala (1960).

As Mike Healey (1991) points out, "There is no doubt that percolation is affected by siltation and that siltation in spawning beds causes high mortality (Shaw and Maga 1943; Wickett 1954; Shelton and Pollock 1966).

Caveats: Bear in mind that limitation of spawning and rearing habitat may not be the mechanism limiting the abundance of any specific stock of salmon and that there is a general lack of support for the hypothesis that freshwater habitat is limiting. However, the full life-histories are known with statistical significance, for very few salmon stocks. As of the early 1990's, there were only two such studies. These were William Ricker's (1956) study of an Oregon coastal coho salmon stock and my (1993a,b) study of a sockeye stock in British Columbia. In both of those cases, the bottleneck in their

life cycle was predation during their smolt migration. Dr. Ricker concluded that the limiting factor was the availability of hiding places for the migrating smolts, whereas, for the sockeye stocks that I studied, their ability to escape predators appeared to depend upon their size and, therefore, upon what their growth rate had been in the nursery lake. In neither case was it dependent upon survival through the egg and alvin stages. Furthermore, increasing the amount of spawning and rearing habitat may not be important for stocks that are depressed or endangered, because they often already have a super-abundance of it. Nevertheless, the enhancement of the quality of spawning and rearing habitat is generally a desirable goal, for increasing the quality (rather than just the quantity) of the spawning and rearing habitat may improve their survival through those life history stages and, thereby, improve their overall survival.

Effects of hydraulic dredging on the porosity of the stream-bed:

Generally this activity involves the removal of sediment material from the stream-bed. The courser sediments are returned to the stream-bed in the more immediate vicinity, whereas, the fine components of the sediment become suspended in the wash water and are carried downstream,. The finer the sediment the further it will be carried. However, it will eventually settle. Some will settle into the gravel of the stream-bed, some superficially and some more-or-less permanently, and the rest will often settle in a pool or other area that has reduced current.

The general effect is very similar to what happens when a coho salmon digs a redd: That is, it tends to clean the gravels of the silts and finer sediments and move them downstream.

During the next major peak-flow event both the fine sediments and the medium sized gravel will be carried further downstream. The finest particles will often be carried far downstream, sometimes even out of the system, to a lake or the ocean.

Thus, the effect of hydraulic dredging is to increase the downstream transport rate for fine and medium sized particles. This will tend to reduce the amount of these sediments and increase stream-bed porosity. The literature I have reviewed above shows, that for all salmonid species greater porosity results in better survival and better habitat for eggs and alevins.

Harvey and Leslie, in 1998, conjectured that dredging may also increase the scour depth, during peak flow events. That seems likely. However, although the eggs and alvins that are carried away when the bed is scoured probably have increased mortality due to that event, they do not necessarily all die. Some of them may be dispersed to other habitats, such as side-channels or pools isolated from the stream, that may give them as good or a better probability of survival than the original redd. In addition, the increased survival of those that are not scoured out, due to the increased porosity of the gravels, may more than compensate for the increased losses among those that are carried off.

One has to appreciate the very low survival rate of salmonids through their entire life cycle. A female lays from a several hundred to tens-of-thousands of eggs, depending on her size and species. Of these, on the average, only two survive to reproduce. They replace the male and female, who were their parents. So, were those few eggs that were destined to survive, in the gravel that was not scoured away or were they carried off, by chance, to some other good habitat? Considering that we know the full life cycle of very few stocks, I doubt that anyone knows the answer to that question. Nevertheless, survival rates for eggs and alvins in cleaned gravels versus uncleaned gravels have been examined and the conclusion was that cleaning the gravel of silt and fine particles increases survival: For example, Wilson and Sheridan (1974) found that the survival rate from egg to fry in uncleaned gravels was approximately 10 percent, whereas, survival in gravels that were cleaned were approximately 40 percent.

During the 1970s, various State, Federal, and International Agencies were interested in developing equipment to artificially clean stream gravel for spawning and rearing of salmonids. In 1978, Walter Mih wrote a review of those studies. Some of their methods involved mining gravels either from the stream-bed or elsewhere and screening it on land, before, introducing it into the stream (Gerke 1973, International Pacific Salmon Fisheries Commission (IPSFC) 1972, and Wilson 1975); while, others merely disturbed or tilled the stream-bed to suspend the fine sediments and allowed the current to carry the finer particles downstream (Gerke 1973, and Wilson 1975). The IPSFC (1975) tested excavating the stream-bed, screening the sediment to separate its fine and course components and, then, burying the fine sediments in the excavation beneath the courser ones; they also tested using air-water jets to clean the gravels insitu (IPSFC 1972, Andrew 1974); the U.S. Forest Service developed an amphibious vehicle that used water jets to clean the gravel and a hydraulic suction system to remove the suspended fine particles, which were, then, projected out of the river system onto land (USFS 1964, Shields 1968); and so on... Most of these methods were effective but were also expensive and involved heavy equipment that was difficult to use under natural conditions and/or was subject to mechanical failure. Dr. Mih (1978), then, developed a mechanical device mounted on a small all-terrain vehicle that used water jets to clean the gravel insitu and a small portable hydraulic pump to draw off the suspended fine sediments and project them out of the system. That proved to be a much more practical method. Unfortunately, at about that same time, changes in salmon management associated with the Boldt Decision (U.S. v. Washington 384 F. Supp. 312 (W.D. Wash. 1974)) resulted in government agencies losing interest in cleaning spawning gravels. Subsequently, these developments seem to have been forgotten.

Nevertheless, the results of these studies can be applied to hydraulic dredging. The first result is, that dredging, as it is currently conducted, will clean the gravels; and the second one is, that if the suspended silts and fine sediments are not returned to the stream but are delivered onto land and the courser gravels are used to refill the excavation, then, this would be almost the same as the best method that they developed.

My recommendations are, therefore, to recognize these beneficial side-effects of dredging, as it is currently conducted. These need to be considered as mitigating or partially mitigating for any deleterious impacts that dredging may have. However, the more important recommendation is, to recognize that, with some modifications to the dredging equipment and how it is used, dredging becomes an excellent method for restoring and enhancing salmon spawning and rearing habitat. The Department needs to consider and fully develop that potential.

My opinion is that that could best be done, not by specifying the mechanical modifications needed to achieve the delivery of the silts and fine sediments onto dry land, but by leaving that to the ingenuity of the public and by encouraging these changes in the dredging equipment and its use by relaxing restrictions on dredging for those permit-holders who have made them. Nevertheless, as these changes in equipment and use would not be reasonable in all locations where dredging is done, and dredging as it is currently done also has beneficial effects, these changes should not be required.

Removal of Lead and Mercury: The DSEIR recognizes that the process of dredging and processing captures and removes a high proportion of the mercury from the system. Dredgers also routinely capture and remove a substantial amount of lead from the system, much of it being lead fishing weights. There may be some minor short-term impacts from suspending these heavy metals that otherwise may be buried fairly deeply in the sediment but the DSEIR does not appear to give adequate credit for the clear long-term benefit of removing substantial amounts of these heavy metals from the stream-beds.

2. I am concerned that the proposed regulations may over-regulate.

A flaw in the general approach taken in the DSEIR, is that it proposes that the California Department of Fish and Game (hereafter, referred to as the "Department") exercise a fairly close supervision of recreational gold dredging and that they draw into their hands decision-power over those activities, so that, if, a problem develops they can deal with it.

This approach can be found in most of the subsections of Chapter 4, except those that present introductory material. Specifically, in each of those subsections, a conclusion is reached that the issue discussed in the individual subsection either has or does not have a significant impact and is either avoidable or is not but, whatever the case may be, it is acceptable because the Department Staff will exercise a fairly close supervision and will hold the decision power to modify the regulations as needed in the event that a problem arises.

That is over-regulation.

It is, also, "slavery" in the Classical sense: That is, in the sense that Aristotle used the term. In particular, he said that a slave is person who is under the decision-power of another.

More recently, (c. 1662) John Locke described the opposite condition: He said that, " Freedom of man under government is to have a standing rule to live by, common to every one in that society, and made by the legislative power erected in it; at liberty to follow my own will on all things where the rule prescribes not; and not to be subject to the inconstant, uncertain, unknown, arbitrary will of another man."

These definitions of "slavery" and "freedom" remain relevant, today, because, they are the historical origins of these concepts. In particular, John Locke was the person most cited, after the *Bible*, by the framers of the *U.S. Constitution*, during the early period, when they were considering fundamental principles; and Aristotle's works, along with Cicero's book, *"On the Commonwealth"*, were the principle sources that Thomas Aquinas used when he wrote *Summa Theologia,* which served as the Constitution of Medieval Europe. The US Constitution rests, upon Thomas Aquinus' work, with surprisingly few changes and those few changes were primarily due to Richard Hooker, Johannes Althusius and John Locke.

This historical perspective should lead us to the conclusion that, throughout history, Western man has strongly objected to, being placed under the decision-power of another individual. The preferable alternative is for there to be a fixed law created by the legitimate legislative authority.

To place this in the context of contemporary law, the due-process clauses of the fifth and fourteenth amendments of the *US Constitution* echo this same sentiment. The purpose of due-process is to protect against over-regulation. --- Due-process is a civil right and it is obviously very important, as it is the only one that is guaranteed twice in the *US Constitution*.

The importance of due-process, here, is that it provides guidance as to the approach that should be taken. That is, that all regulations must be rational, not arbitrary, and not invidious. (see, for example, Robinson v. City of Seattle, 119 Wash. 2D 34, 61, 830 P.2d 318, 334 (1992)).That means, that they must reasonably be expected to achieve their legitimate government purpose (that is, they must have valid scientific support or the best scientific support that is available); they must have a basis; and the regulation must not be cruel or out of proportion to what is necessary to prevent the evil or nuisance-like threat identified in the regulation's purpose. If the regulation violates due-process it is simply

invalid and unenforceable

The DSEIR clearly identifies the legitimate government purposes that these proposed regulations are intended to serve. These are to protect those species that the Department is required to protect and, also, water quality and various other objectives, ... The program they describe would undoubtedly achieve those purposes.

The problems are that some of the proposed regulations appear to be excessive or arbitrary: In particular, the point of this item is that the general approach taken in the DSEIR is to deprive the permit-holders of decision-power over their dredging activities and place them under the arbitrary decision-power of the Department's staff.

What should be done, instead, is to cause the legitimate legislative authority to form a fixed law or rule to deal with the issue. However, the Legislature is not above being irrational, arbitrary, and subject to political influence. In fact, their short-comings appear to be part of what led to the need for the new regulations and the DSEIR. Thus, I have doubts about the Legislature and reservations about non-elected officials wielding the legislative authority through a rule-making process but strongly object to individual departmental staff regulating without any fixed rule. Nevertheless, the guidance from the law is clear, as to what should be done. So, let us hope that, whoever forms these laws or rules, makes a sincere attempt to adhere to due process and creates fixed laws or rules that can be uniformly applied. In that case, the outcome shall probably work well enough.

3. The proposed regulations use a one-size-fits-all approach and do not employ local scientific knowledge where it is available. Consequently, they can be expected to not be reasonable for many specific locations.

One of the limitations of the regulations presented in the DSEIR is that they do not utilize scientific studies for specific localities where they are available. Instead, the opening and closing dates are set over broad regions based on large-scale trends. Although, this may facilitate the ease of regulation and/or supervision, it can be expected to lead to the regulations being grossly unreasonable as applied at a specific locality, river, or section of one.

A large part of the problem, underlying this issue, is that the length of time the eggs or alvins are in the gravel is highly temperature dependent. However, I found that water temperatures in small streams in California are governed by the balance of strong forces (Crittenden 1977, 1978) and, therefore, often varied dramatically over relatively small distances within a stream, as well as among streams. Furthermore, temperature tolerances, preferred temperatures, and spawning dates vary among species and stocks and the fish, also, seek out habitats that have appropriate temperature regimes. Consequently, opening and closing dates that would protect the vulnerable stages of their life histories can be expected to vary substantially among localities.

Another factor that is specific to locations is that streams and rivers may have waterfalls, swift rapids, dams or other natural or man-made barriers that are impassable to upstream migrating salmon. Regulations aimed at protecting their habitat above such barriers or in other areas where they do not live are obviously inappropriate.

To resolve these problems, one possible approach is for the regulations to include a mechanism or process that would allow them to be altered for specific regions or localities, to better reflect the best scientific knowledge for the specific region or locality, as it becomes available.

Admittedly, such a process will open the door to a continuing struggle among the various contending parties but, on-the-other-hand, regulations that do not reflect local conditions nor local scientific knowledge, will almost certainly be perceived by the public as being overtly unreasonable, as applied to many specific locations. --- Whatever is done to resolve this dilemma, considerable care needs to be given to establishing a mechanism that is impartial and adheres to the principles discussed in item 2, above.

4. Restricting the permits to three listed locations is another example of over-regulation.

Allowing each permit-holder to list only three locations on each application where he or she may dredge for gold is unnecessarily restrictive. That does not appear to serve any purpose except limiting the number of permit holders and facilitating their supervision.

It effectively requires that the individual have prior knowledge of the sites he or she intends to dredge. This may be expected to restrict the number of gold dredgers to those individuals who have previous experience with that activity and their acquaintances. It also effectively prevents prospecting for new sites. Thus, it will tend to limit the number of individuals dredging and the number of areas dredged. There is no apparent reason for this, except to facilitate supervision.

This is an example of over-regulation. As such, it is likely to be counter-productive. In particular, the loss of personal choice and the supervision can be expected to reduce that individual's pleasure in the recreational activity of dredging for gold. In addition, some individuals may be expected to take offense at the unreasonable restrictiveness of the new regulations and, may strive against them and against their intent.

Instead of closer supervision, a better approach is to make the regulations reasonable, to provide clear guidance on best practices, to rely on the permit-holders' understanding and appreciating those regulations and guidance, and to assume that they will not only abide by them but will labor to advance their intent.

It is encouraging to see in Section 2.2.5 of the DSEIR, that the Department is developing a pamphlet on best management practices. However, in order for it to be effective, the Department also needs to foster a cooperative public, instead of one which takes every opportunity to break or circumvent the rules. To that end, it is essential that they create the public perception that the new rules are reasonable and no more restrictive than is necessary. In that case, the public can be relied upon to educate or dissuade those who would break the rules or, if necessary, report violations. That will help make the program cost-effective.

5. The proposed regulations need to be careful not to constitute an illegal tax.

If the regulations go beyond protecting against a nuisance-like threat and provide an affirmative benefit to the general public, while imposing the burden only upon one group of people instead of upon the general public, then, the regulations may constitute an illegal tax. I am not a lawyer and I understand that there are other legal considerations and many types of costs and benefits that need to be considered. However, from a biological viewpoint, the appropriate standard against which to measure

the costs and benefits, is defined by the stated purpose of the regulations: That is, primarily to protect the protected species against an increase in mortality. Thus, if dredging causes a net increase in mortality, mitigation can be required but not if there is a net gain.

Before the new regulations, dredging appeared to be a fairly neutral activity. It had some deleterious impacts but, also, removed lead and mercury and cleaned the gravel. The proposed regulations would protect against some of those impacts, for example, by introducing new protections that help assure that the stream after dredging will, reasonably resemble its condition before, in terms of its open-channel dynamics. Examples are requiring that heaps of processed gravel be leveled, protection of the stream-banks, and so on... Overall, my impression is that dredging may now be close to the neutral line or may be a net benefit. However, it is difficult to tell what the case may be, before the regulations are implemented, because, their effect partly depends upon how well they are received by the public.

The point of this item is, that much more can not justly be required. In addition, as mentioned elsewhere in these comments, there are some parts of the proposed regulations that are inappropriate and need to be corrected.

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Subject: DSEIR

Date: Monday, May 9, 2011 10:25:37 PM PT

From: Mark Johnson

To: dfgsuctiondredge@dfg.ca.gov

Mr Stopher, I have not participated in the public meeting nor have I sent any correspondance. I understand tonight is the deadline. I own four mining claims here in California. I strongly opose the new drafted regulations and feel that the DFG should revert to the 1994 regulations. I base this from what I have read thus far and feel the EIR was too subjective and not scientific. I have several friends and family that come in from out of state to participate in dredging on my claims. The fiscal impact that comes from their and my activity is a welcome sign to many of the communities that we spend time in. The last two years we have dredged in other states but would like to get back to business on my claims.

Best Regards,
Mark Johnson
408-799-8936

Tom Kitchar
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May 9, 2011

Suction Dredge Program
Draft SEIR Comments
Department of Fish and Game
601 Locust Street
Redding, CA 96001

Sent via email to: dfgsuctiondredge@dfg.ca.gov

RE: COMMENTS ON DRAFT SUCTION DREDGE SEIR

Dear California Dept. of Fish & Game;

I thank you for this opportunity to comment on the Draft SEIR regarding the permitting of suction dredge mining operations within California.

To begin, I must say that I am extremely disappointed in the Dept. in that I went to great lengths back in 2007 to draft and submit comments to the Dept. regarding *"California Regulatory Notice Register 2007, Volume No. 42-Z 1784 – Suction Dredge Mining EIR"* . . . which it appears the Dept. has completely ignored.[1]

With the highly intelligent input I know the Dept. received back in 2007 (from myself and others), it seems an utter shame that the Dept. didn't take the opportunity to fix the few flaws in the previous permit regulations; but instead proposes to further illegally restrict the Congressionally granted statutory rights of real property found within the U.S. Mining Acts of 1866, 1870, and 1872.

MY RECOMMENDATION: IF IT AIN'T BROKE, WHY ARE YOU MESSING WITH IT?? All Throughout the DEIR the Dept. uses the phrase "Less than significant". SO WHY CHANGE IT??

For too many years already, the State of California has illegally prohibited certain bone fide mining operations (i.e.; suction dredge mining) statewide by requiring a permit, and then refusing to issue one. As the continued prohibition on this form of mining is causing great economic hardship to hundreds if not thousands of individual suction dredge miners, to local towns and counties where such mining used to occur, to the many suction

[1] Comments submitted by Tom Kitchar – President, Waldo Mining District, P.O. Box 1574, Cave Junction, OR 97523 dated December 17, 2007; and again now as Exhibit A: *"TAK – WMD COMMENTS ON PROPOSED EIR – 2007"*

dredge equipment manufacturers and retailers; it is crucial that the Dept. do everything it can to get California's suction dredge miners back in the water helping to generate at least some of the many millions of dollars California needs.

With the current record high prices of gold (near $1,550.00/oz), the lack of a permit for the 2011 dredging season is criminal. Hundreds if not thousands of individuals could be making a fairly decent living mining gold this summer *as is their right!*

For these and other reasons, I strongly urge the Dept. to go with the ***"1994 Regulations Alternative"*** which calls for continuing to issue the permit under the previous regulations in effect prior to the 2008 moratorium.

THE DEPT. JUST DOESN'T GET IT . . .
THE PROPOSED ALTERNATIVE IS IN DIRECT VIOLATION OF FEDERAL LAW

Within the Preferred Alternative, the Dept. proposes to restrict suction dredge mining in direct violation of the controlling federal mining laws. This is being done either through ignorance of the federal law(s), or a deliberate act by the Dept. or those within the Dept. to circumvent the will of Congress. Either way, if the Dept. adopts the preferred more restrictive alternative (than the previous regulations), the actions of the Dept. will be heinous, illegal (in violation of federal mining laws plus Constitutional issues (such as civil rights and takings), and unforgiveable.

What does it take for the Dept. to understand that mining, and the rights of miners, are unique to all other class of citizens and uses of the public lands? What part of *"Congressionally granted statutory right"* do you not understand?

In explanation, I offer the following:

1. Under the U.S. Mining Law of 1872 (hereafter "Mining Law"):

> **30 USC Sec. 22. Lands open to purchase by citizens**
>
> Except as otherwise provided, **all valuable mineral deposits in lands belonging to the United States**, both surveyed and unsurveyed, **shall be free and open** to exploration and purchase, and the lands in which they are found to occupation and purchase, by citizens of the United States and those who have declared their intention to become such, under regulations prescribed by law, and according to the local customs or rules of miners in the several mining districts, so far as the same are applicable and not inconsistent with the laws of the United States. (Emphasis added)

Here we see that the unappropriated federal public domain lands are declared, by Congress, to be *"FREE AND OPEN"* – to mining (by nearly anyone). Today, the lands belonging to the United States that are open to mining are the unwithdrawn federal lands managed by the Bureau of Land Management (BLM) or the United States National Forest Service (NFS).

Under the Mining Law, anything a prospector or miner does on the public lands that is incident to mining is "mining". Under the Mining Law, there is no such thing as "recreational mining" (even if the miners themselves are too dumb to know it)! I repeat, any and all forms of prospecting or mining for valuable ("i.e.; "locatable") mineral deposits on the public lands managed by the BLM or NFS is MINING… and is being performed under the authority of the Congressional grant of 1866, 1870, and 1872.

THE LANDS ARE FREE AND OPEN TO EXPLORATION. And yet, the Dept. presumes to limit the number of permits it will issue annually. And yet, the Dept. will require the applicant to list the streams planned to be worked, and if the applicant misses some stream that he may later want to visit (and dredge in), tough luck Charlie, that stream is not on your application. So what happened to *"free and open"*?

Add to that, the Dept. proposes to close off certain portions of streams, especially near the mouths of tributary streams. As proposed, hundreds if not thousands of feet of streams will be closed to suction dredge mining simply because of the confluence of a tributary stream. There are several problems with this. If the area in question is federally managed lands open to the Mining Law, then the Mining Law says these (i.e.; "all") valuable mineral deposits "shall be free and open". Notice that 30 USC Sec. 22 does not mention any federal lands closed to mining if they are near the confluence of a tributary stream.

These mineral deposits are "free and open" to exploration. For certain types of placer gold deposits (i.e.; valuable mineral deposits within the bed of active streams), the use of a suction dredge is the best, most environmentally friendly method yet devised to explore the deposits, and to mine them. The Dept's. closure of these areas is in affect a de facto Mineral Withdrawal usurping the will and authority of Congress, and the authority granted to the Secretary of Interior. The State of California does not have the authority to close any portion of federal public domain lands to mining… not even suction dredge mining; as shown in the recent United States Court of Appeals, Eighth Circuit decision on Sept. 16, 1998 in:

SOUTH DAKOTA MINING ASSOCIATION, INC.; et al.
v.
LAWRENCE COUNTY, a Political Subdivision of the State of South Dakota,
No. 97-3861.

In this case, "…holders of mining claims brought suit claiming that federal mining laws preempted ordinance prohibiting issuance of any new or amended permits for surface metal mining within area which included federal lands.

The Court of Appeals, Hansen, Circuit Judge, held that: (1) preemption claim was ripe, and (2) Federal Mining Act preempted ordinance. Affirmed.

In their Sept. 16, 1998 decision the court ruled:

A) "If Congress evidences intent to occupy given field, any state law or local ordinance falling within that field is preempted. U.S.C.A. Const. Art. 6, cl. 2."

B) "If Congress has not entirely displaced state regulation over matter in question, state law is still preempted to extent it actually conflicts with federal law, that is, when it is impossible to comply with both state and federal law, or where state law stands as obstacle to accomplishment of full purposes and objectives of Congress. U.S.C.A. Const. Art. 6, cl. 2."

C) "Federal Mining Act preempted ordinance prohibiting issuance of any new or amended permits for surface metal mining within area which included federal lands; **ordinance stood as obstacle to accomplishment of full purposes and objectives of Congress of encouraging exploration and mining of valuable mineral deposits located on federal land.** U.S.C.A. Const. Art. 6, cl. 2; 30 U.S.C.A. §§ 21-26."

> NOTE: The proposed DF&G regulations stand as an *"obstacle to accomplishment of full purposes and objectives of Congress of encouraging exploration and mining of valuable mineral deposits located on federal land."*

The court went on to say:

"Background:

On November 5, 1996, a 51 percent majority of the voters of Lawrence County, South Dakota, approved an initiated ordinance that amended Lawrence County's zoning laws. [FN2] The voter-approved ordinance adds the following language to the county's zoning provisions: "No new permits or amendments to existing permits may be issued for surface metal mining extractive industry projects in the Spearfish Canyon Area." The Spearfish Canyon Area defined in the ordinance includes approximately 40,000 acres of Lawrence County, encompassing about 10 percent of the total land area of the county. Approximately 90 percent of the area is within the Black Hills National Forest and is under the supervision and control of the United States Department of Agriculture's Forest Service, and the United States Department of Interior's Bureau of Land Management. ***This public land contains unpatented mining claims or properties which are open to the public for mineral developments.***"

> NOTE: The proposed DF&G regulations attempt to close certain portions of streams from suction dredge mining. In most instances, this is "public land" which may contain **"*unpatented mining claims or properties which are open to the public for mineral developments.***

"We initially note that, as in Granite Rock, the plaintiffs in this case bring a facial challenge to a local permit law. However, unlike Granite Rock, we are not confronted with uncertainty regarding what conditions must be met to obtain a permit for surface metal mining in the Spearfish Canyon area. **The Lawrence County ordinance is a per se ban on all new or amended permits for surface metal mining within the area. Because the record shows that surface metal mining is the only practical way any of the plaintiffs can actually mine the valuable mineral deposits located on federal land in the area, the**

ordinance's effect is a de facto ban on mining in the area. Thus, unlike Granite Rock, we are not faced with a local permit law that sets out reasonable environmental regulations governing mining activities on federal lands."

NOTE: The proposed DF&G regulations are a per se ban on all suction dredge mining within the (certain) area(s). Because the record shows that suction dredge mining is the only practical way any of the future plaintiffs can actually mine the valuable mineral deposits located on federal land in the area, the regulation's effect is a de facto ban on mining in the area.

"The ordinance's de facto ban on mining on federal land acts as a clear obstacle to the accomplishment of the Congressional purposes and objectives embodied in the Mining Act. Congress has encouraged exploration and mining of valuable mineral deposits located on federal land and has granted certain rights to those who discover such minerals. Federal law also encourages the economical extraction and use of these minerals. **The Lawrence County ordinance completely frustrates the accomplishment of these federally encouraged activities.** A local government cannot prohibit a lawful use of the sovereign's land that the superior sovereign itself permits and encourages. To do so offends both the Property Clause and the Supremacy Clause of the federal Constitution. **The ordinance is prohibitory, not regulatory, in its fundamental character.** The district court correctly ruled that the ordinance was preempted.

NOTE: The proposed DF&G regulations partially or completely **frustrates the accomplishment of these federally encouraged activities.** A local government (i.e.; the State of California) cannot prohibit a lawful use of the sovereign's land that the superior sovereign itself permits and encourages. To do so offends both the Property Clause and the Supremacy Clause of the federal Constitution. **Portions of the the proposed regulations are prohibitory, not regulatory, in their fundamental character.**

With the Proposed Alternative, the Dept. will limit the number of permits it will issue annually, on a first-come, first-served basis. Excuse me? What part of *"...**all valuable mineral deposits in lands belonging to the United States**, both surveyed and unsurveyed, **shall be free and open..."*** don't you get? No where in the Mining Law does it even hint that only a certain number of citizens are allowed to explore for and extract the valuable minerals. In fact, the Mining Law says just the opposite:

30 USC Sec. 21a. National mining and minerals policy; "minerals" defined; execution of policy under other authorized programs

The Congress declares that it is the continuing policy of the Federal Government in the national interest ***to foster and encourage***

> **private enterprise in (1) the development of economically sound and stable domestic mining**, minerals, metal and mineral reclamation industries, (2) the orderly and economic development of domestic mineral resources, reserves, and reclamation of metals and minerals to help assure satisfaction of industrial, security and environmental needs…

In fact, the courts have declared that the intent of Congress in the Mining Law is to afford as many mining opportunities to as many people as possible. So who is the State of California to limit what Congress has not only granted but also fosters and encourages? As proposed, the preferred alternative is in direct opposition of the intent of Congress.

THE PREFERRED ALTERNATIVE VIOLATES PROPERTY RIGHTS

Not only does the preferred alternative violate the rights of all citizens (and others) to search for valuable mineral deposits on ***"all"*** unappropriated lands belonging to the United States (by prohibiting suction dredge use within certain segment of streams, the Dept. is making many of these *"free and open" "valuable mineral deposits"* inaccessible and thus is denying the granted appropriation of the valuable mineral deposits contained within those areas (i.e.; without a suction dredge, or being able to operate a suction dredge, there is no way for a prospector to make a bone fide Discovery[2]).

Under both federal and state laws, unpatented mining claims are "real property" in the highest sense of such terms:

> **30 USC Sec. 26. Locators' rights of possession and enjoyment**
>
> **The locators of all mining locations** made on any mineral vein, lode, or ledge, situated on the public domain, their heirs and assigns, where no adverse claim existed on the 10th day of May 1872 **so long as they comply with the laws of the United States, and with State, territorial, and local regulations not in conflict with the laws of the United States governing their possessory title, *shall have the exclusive right of possession and enjoyment of all the surface included within the lines of their locations…"***

What 30 USC Sec. 26 really says is, as long as the locators of all mining locations (i.e.; claims on locatable mineral deposits) comply with all the laws and regulations *"governing their possessory title"*, the locators (or current claimowner(s), or for that

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[2] Although the Dept. may try to argue that the restriction only prohibits the use of a suction dredge and that "other" methods are still allowed, has the Dept. ever tried shoveling streambed sediments in ten (10) feet of water? Prior to the development of the modern suction dredge, miners used to construct huge wing dams to divert whole rivers in order to expose the beds (and didn't need your permit); or, in more modern times, used large-scale excavating equipment such as bucket-ladder dredges, clam-shells, or large excavators and backhoes. All of these methods (other than suction dredging) require an approved Plan of Operations and possibly a host of other permits. The lands MUST be free and open to exploration (that's the law). And Congress did not mean for prospectors to be forced to only test using large scale mining equipment. As suction dredge mining is the simplest, most economical, and environmentally friendly method yet devised to explore underwater streambed sediments for valuable mineral deposits, and so-called closure of certain areas is in reality an illegal de facto mineral withdrawal.

matter, a prospector diligently searching for a discovery under the doctrine of Pedis Possessio (i.e.; the Law of Possession), they *"shall have the exclusive right of possession and enjoyment of all the surface included within the lines of their locations…*"

In the Mining Acts of 1866 to 1872, the U.S. Congress, as authorized by the Constitution, declared [3], in the form of a *"grant"* [4], to the citizens of the United States, that;

> "… ***the mineral lands of the public domain***, both surveyed and unsurveyed, ***are hereby declared to be free and open to exploration and occupation by all citizens*** of the United States, and those who have declared their intention to become citizens, *subject to such regulations as may be prescribed by law, and subject also to the local custom or rules of miners in the several mining districts, so far as the same may not be in conflict with the laws of the United States."* (H.B. 365, 39TH CONGRESS, IN THE SENATE OF THE UNITED STATES, JULY 19, 1866, Sec. 1). (emphasis added)

It is important to note that the only stipulations to the grant is that it is made *"… subject to such regulations as may be prescribed by law…"* and *"…to the local custom or rules of miners…"*. In order to pursue the purpose of this examination (i.e.; to determine what rights, if any, are granted by the 1866-1872 Mining Acts), it is deemed advantageous to first determine what *"… regulations as may be prescribed by law,"* the grant is or may be subject to.

We look to the United States Codes for the answer, in particular, 30 USC, Chpt. 2, Sec. 26, under the heading, *"Locators' rights of possession and enjoyment"*; where it clearly states:

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[3] **Declare.** To make known, manifest, or clear. To signify, to show in any manner either by words or acts. To solemnly assert a fact before witnesses. (Black's Law Dictionary, 5th Edition, 1979)

[4] **Grant.** To bestow; to confer upon someone other than the person or entity which makes the grant. Porto Rico Ry., Light & Power Co. v. Colom, C.C.A.puerto Rico, 106 F.2d 345, 354. To bestow or confer, with or without compensation, a gift or bestowal by one having control or authority over it, **as of land** or money. Palmer v. U.S. Civil Service Commission, D.C.Ill., 191 F.Supp. 495, 537.

A conveyance; i.e. transfer of title by deed or other instrument. Dearing v. Brush Creek Coal Co., 182 Tenn. 302, 186 S.W.2d 329, 331. Transfer of property real or personal by deed or writing. Commissioner of Internal Revenue v. Plestcheeff, C.C.A.9, 100 F.2d 62, 64, 65. **A generic term applicable to all transfers of real property, including transfers by operation of law** as well as voluntary transfers. White v. Rosenthal, 140 Cal.app. 184, 35 P.2d 154, 155. A technical term made use of in deeds of conveyance of lands to import a transfer. A deed for an incorporeal interest such as a reversion.

As distinguished from a mere license, **a grant passes some estate or interest, corporeal or incorporeal, in the lands which it embraces.**

To give or permit as a right or privilege; e.g. grant of route authority to a public carrier. (Black's Law Dictionary, 5th Edition, 1979) (emphasis added)

> "… ***so long as they comply with the laws*** of the United States, and with State, territorial, and local regulations not in conflict with the laws of the United States ***governing their possessory title***…" (emphasis added)

So here, in the U.S. Codes, we see that so long as the locators (miners and prospectors) comply with *"the laws of the United States…",* and State, territorial, and local *"regulations"* (as long as they are not in conflict with the laws of the United States) *"…governing their possessory title…"* … they qualify for and/or meet the stipulations of the grant. It is important to note -- no, indeed, it is vital to note -- that the statutes do not even hint at or mention any other laws, rules, or regulations that the grantee is subject to; other than the local customs or rules of miners.

So just what are these *"laws of the United States, and with State, territorial, and local regulations"* that govern possessory title? These are the federal, state, and local laws, rules, and regulations that claim owners follow regarding the locating and keeping of a mining claim. In other words, the laws spelling out what must be done to have a valid Discovery and what information must be included in a "Notice of Location", "Affidavit of Labor", Quit-Claim Deed", and other similar documents; when such documents must be filed; what markers, if any, are required to mark the boundaries of the claim; and in some states, what taxes, if any, must be paid. It is important to note that there is no mention what-so-ever of restricting mining methods, or for protecting the environment, for reclamation, or seeking approval from a land management agency and posting of a bond.

Now then; Section 26 (30 USC) goes on to say that as long as the locators of all mining locations comply with the laws of the United States, and with State, territorial, and local regulations not in conflict with the laws of the United States governing their possessory title, that the locators of all mining locations on the public domain:

> ***"…shall have the exclusive right [5] of possession and enjoyment of all the surface included within the lines of their locations…"*** (emphasis and footnote added)

[5] **Exclusive right.** An exclusive right is one which only the *grantee* thereof can exercise, and from which all others are prohibited or shut out. (Black's Law Dictionary, 5th Edition, 1979) (emphasis added)

Use of the word *"shall"* [6, 7] means *"must"* (or "does") have, in the highest order. Lesser direction would be something like "may", "might", etc.. In this usage, "shall" is an absolute, i.e.; the same as "must, in all cases and in all circumstances". And what "shall" the locator of a mining location have as long as they comply with the laws of the United States, and with State, territorial, and local regulations not in conflict with the laws of the United States governing their possessory title? Nothing short of *"...the exclusive right of possession and enjoyment of all the surface..."*.

We've seen in footnote 5 that *"exclusive right"* means *"Not including, admitting, or pertaining to any others. Sole. Shutting out; debarring from interference or participation; vested in one person alone."* (Black's Law Dictionary, 5th Edition, 1979) (emphasis added) Congress, through the Constitution, has the "exclusive right" to *"...dispose of... the Territory or other Property belonging to the United States."* No other branch of government has this authority. The miner's *"exclusive rights"* to possession and enjoyment of their mineral location is just as strong and binding as Congress's *"exclusive right"* to dispose of territory or other property belonging to the United States.

In other words, according to 30 USC, Chpt. 2, Sec. 26, as long as the locator of a mining location on the public domain complies with the laws and regulations governing the possessory title (to the location), then the locator *"shall have the exclusive right of possession and enjoyment of all the surface..."*. This can only mean one (1) thing; the language is simple. The law says *"exclusive right of possession and enjoyment"*. This right can not be "exclusive" if it is in any way influenced or interfered with by any outside source, such as and including the various land management agencies. Indeed, any such restriction or regulation of bone fide mining operations makes a mockery of the term "exclusive". How can something be "exclusive" if it is shared or subject to outside control? It can't.

"...Exclusive right of possession and enjoyment of all the surface..."; that's what the law declares, and grants. How can the locator's "exclusive right of possession and enjoyment" be "exclusive" if it is secondary to the management of the U.S. Forest Service, the Bureau of Land Management, the Calif. Dept. of Fish & Game, or other

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[6] **shall 3.** *(in laws, directives, etc.)* must; is or are obligated to... (Random House Webster's College Dictionary – 1991)

[7] **Shall.** As used in statutes, contracts, or the like, this word is generally imperative or mandatory. In common or ordinary parlance, and in its ordinary signification, the term "shall" is a word of command, and one which has always or which must be given a compulsory meaning; as denoting obligation. It has a peremptory meaning, and it is generally imperative or mandatory. It has the invariable significance of excluding the idea of discretion, and has the significance of operating to impose a duty which may be enforced, particularly if public policy is in favor of this meaning, or when addressed to public officials, or when public interest is involved, or where the public or persons have rights which ought to be exercised or enforced, unless a contrary intent appears. People v. O'Rourke, 124 Cal.App. 752, 13 P.2d 989, 992.

But it may be construed as merely permissive or directory (as equivalent to "may"), to carry out the legislative intention and in cases where no right or benefit to any one depends on its being taken in the imperative sense, and where no public or private right is impaired by its interpretation in the other sense. Wisdom v. Board of Sup'rs of Polk County, 236 Iowa 669, 19 N.W.2d 602, 607, 608. (Black's Law Dictionary, 5th Edition, 1979) (emphasis added)

federal, state, and local governments? It can't. How can it be "exclusive" if it is secondary to the interests of fish, plants, bugs, and other critters? It can't. How can the locator's "exclusive right" to the *"possession and enjoyment*[8]*"* of all the surface be "exclusive" if the state can tell him when he can mine, how he can mine, or with what size equipment (or worse, that he can't mine)? It can't.

Some may say that the use of the term *"exclusive right"* is a mistake… or that it doesn't really mean *"exclusive"*. However, a look at some of the other guarantees or rights granted in the Mining Acts of 1866 – 1872 may shed light on this subject.

INTENT: The intent of the Mining Laws and the continuing intent of Congress is simple and self-evident:

> The general policy of the mining laws is to promote widespread development of mineral deposits and **to afford mining opportunities to as many persons as possible**. (30 USC 22.50) (emphasis added)

and;

> The Congress declares that it is the continuing policy of the Federal Government in the national interest ***to foster and encourage*** private enterprise in (1) the development of economically sound and stable domestic mining, minerals, metal and mineral reclamation industries, (2) the orderly and economic development of domestic mineral resources, reserves, and reclamation of metals and minerals to help assure satisfaction of industrial, security and environmental needs... For the purpose of this Act 'minerals' shall include all minerals and mineral fuels including oil, gas, coal, oil shale and uranium. (Mining and Minerals Policy Act of 1970) (emphasis added)

RIGHTS TO EXCLUSIVE POSSESSION: Not only is the public domain already the land of whomsoever would desire to occupy the land (due to the grants of 1866 – 1872), which land is now held in trust [9] for him, but that the right of possession is exclusively

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[8] **Enjoy.** To have, possess, and use with satisfaction, to occupy or have benefit of.

Enjoyment. The exercise of a right; the possession and fruition of a right, privilege or incorporeal hereditament. Comfort, consolation, contentment, ease, happiness, pleasure and satisfaction. (Black's Law Dictionary, 5th Edition, 1979)

[9] **Trust.** A right of property, real or personal, held by one party for the benefit of another. King v. Richardson, C.C.A.N.C., 136 F.2d 849, 856, 857. A confidence reposed in one person, who is termed trustee, for the benefit of another, who is called the cestui que trust, respecting property which is held by the trustee for the benefit of the cestui que trust. State ex rel. Wirt v. Superior Court for Spokane County, 10 Wash.2d 362, 116 P.2d 752, 755. Any arrangement whereby property is transferred with intention that it be administered by trustee for another's benefit.

A fiduciary relation with respect to property, subjecting person by whom the property is held to equitable duties to deal with the property for the benefit of another person which arises as the result of a manifestation of an intention to create it. An obligation on a person arising out of confidence reposed in him to apply property faithfully and according to such confidence; as being in nature of deposition by which proprietor transfers to another property of subject intrusted, not that it should remain with him, but that it should be applied to certain uses for the benefit of third party. (Black's Law Dictionary, 5th Edition, 1979) (emphasis added)

his; to hold and enjoy. This possession is clearly guaranteed by the statutes:

> So long as the locator complies with statutory requirements and performs assessment work he is *entitled to hold his possession against all the world*, subject to the paramount sovereignty of the United States, and the legal title is held by the government *in trust for him*. (30 USC 28.36) (emphasis added)

and;

> By the terms of this section the locator of a mining claim has a possessory title thereto and ***the right to the exclusive possession and enjoyment*** thereof, and this includes ***the right to work the claim, to extract the minerals therefrom, the right to the exclusive property in such mineral as well as the right to defend his possession***. (30 USC 22.70) (emphasis added)

NOTE: 30 USC 28.36 states that *"…the legal title is held by the government in trust for him."* and that the definition in Blacks Law Dictionary for the term *"trust"* (see footnote 9), second paragraph reads:

> A fiduciary relation with respect to property, subjecting person by whom the property is held to equitable duties to deal with the property for the benefit of another person which arises as the result of a manifestation of an intention to create it. (emphasis added)

This means that the United States is acting as "trustee" in a *"fiduciary* [10] *relationship"* when they hold the legal title *"in trust"* for the locator (present or future) of a mineral location. And as the "trustee" of the Mineral Estate, the government is obligated and bound by both the law and the courts *"…to act primarily for another's benefit in matters connected with such undertaking."* and *"…to follow the terms of the trust and the requirements of applicable state law."* Or in other words, the government, as the trustee of the Mineral Estate, is obligated to place its primary importance in the benefit of the locator of a mineral location.

Furthermore, *"A breach of fiduciary responsibility would make the trustee liable to the beneficiaries for any damage caused by such breach."* (see footnote 10) (emphasis added)

So, as trustee of the Mineral Estate, the government is obligated to act primarily for the benefit of the locator of a mineral location (present or future), and a breach of this

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[10] **Fiduciary.** The term is derived from the Roman law, and means (as a noun) a person holding the character of a trustee, or a character analogous to that of a trustee, in respect to the trust and confidence involved in it and the scrupulous good faith and candor which it requires. A person having duty, created by his undertaking, to act primarily for another's benefit in matters connected with such undertaking. As an adjective it means the nature of a trust; having the characteristics of a trust; analogous to a trust; relating to or founded upon a trust or confidence.

A person or institution who manages money or property for another and who must exercise a standard of care in such management activity imposed by law or contract; *e.g.* executor of estate; receiver in bankruptcy; trustee. A trustee, for example, possesses a fiduciary responsibility to the beneficiaries of the trust to follow the terms of the trust and the requirements of applicable state law. A breach of fiduciary responsibility would make the trustee liable to the beneficiaries for any damage caused by such breach. (Black's Law Dictionary, 5th Edition, 1979) (emphasis added)

trust makes the trustee liable to the beneficiaries for any damage caused by such breach. As the statutes state, the locator of a mineral location shall have *the right to the exclusive possession and enjoyment* thereof, and this includes *the right to work the claim, to extract the minerals therefrom, the right to the exclusive property in such mineral as well as the right to defend his possession*. (30 USC 22.70) (emphasis added)

In this light, it is plain that as the trustee of the Mineral Estate, the U.S. government is charged with making the protection of the *"exclusive possession and enjoyment"* of the location for the locator (present or future) its primary duty and responsibility. The preferred alternative in the SEIS totally frustrates over one hundred forty years of federal mineral law and makes a mockery of the concepts and meanings of such things as "rights", "private property", "exclusive rights to possession and enjoyment", etc..

A good analogy of the Depts. proposal to prohibit suction dredge use in certain stream segments is if the Dept. suddenly told home owners that they could no longer use one of the rooms in their house. If I have a simple 20 acre unpatented placer mining claim taking in 1,320 ft. (1/4 mile) of river, and because a tributary stream enters the river on my claim the Dept. says I can not dredge so many feet below or above the confluence, then the Dept. is "taking" my exclusive property and MUST compensate me for it.

Furthermore, if the area now off-limits contains my Discovery, my whole claim could be declared null & void because if the deposit can not be economically mined, then there is no Discovery (in this case, I may be able to economically mine the deposit with a suction dredge, but it probably would not pay to bring in $3 Million dollars worth of heavy equipment, move the river, etc. – which are the only other options available).

THE PROPOSED ALTERNATIVE VIOLATES THE SUPREMECY CLAUSE

Only the U.S. Congress has the constitutional authority to dispose of lands belonging to the United States. And starting in 1866, Congress gave all the valuable mineral deposits found in the public lands (and the lands they are found in) to the citizens (and others) of the United States. Only Congress, and the delegated authority given to the Secretary of Interior, may close public lands to locatable mineral mining – in the form of a mineral withdrawal.

CONCLUSIONS: The California Dept. of Fish and Game does not have any authority to close-off or prohibit suction dredge mining on public domain lands, or on locatable mineral mining claims; especially in light of the Dept's. own findings in the SEIR of ***"less than significant"*** impacts on all issues affecting fish and aquatic habitat.

The mercury issues are a red-herring probably brought up by the Dept. in an attempt to put the fear of dreaded mercury poisoning into the hearts of the ignorant public. The

reality is that suction dredge miners are the ONLY people actively and safely removing, according to the Dept's own highly unscientific "study" (term used loosely), up to 98% of any mercury sucked up by the dredge (and at no cost to the tax-payers). I find it criminally obscene that the Dept. finds that it would be better to leave all 100% of the mercury in place rather than safely remove 98% of it. The ONLY sure thing about mercury in the streambeds is that sooner or later, given enough time, the mercury will eventually work its way to the low-lands and eventually to the deltas and the ocean. To pretend that if left alone it will remain locked in place ignores all geologic history and science.

However, this skewed line of thinking (by the Dept. to leave the mercury in place) goes hand-in-hand with the Dept's. policy for years and years to allow anglers to literally throw tons of lead (in the form of fishing sinkers) into the waters of the state… and just in case the Dept. has missed this, adding lead to the water is not a good idea. In fact, it's probably illegal.

So who are the real polluters here: the miners that remove mercury and lead from the streambed sediments… or the anglers that throw (and loose) lead into the water and the Dept. that not only allows it to happen but issues a license to do so – while in pursuit of deliberately killing fish!

That's what this really comes down to. Those that KILL FISH are complaining that there aren't enough fish for them to kill… so they attack and blame just about everyone and anyone else for the lack of fish for them to kill. Unfortunately, the fishing industry (commercial and recreational (now there's a wonderment for you – people out having a good time while in pursuit to kill or torture fish) and the Dept. seemed to have ignored the conclusions of just about every single study done on the effects of suction dredge mining on fish and fish habitat. Not one study to date has shown a measurable harmful affect that hasn't already been mitigated (with the prior permit). Most studies conclude that if there are affects, they are so small as to be unmeasureable. The few studies that actually found affects (as opposed to the fall-back position of some theoretical "potential for harm") found the affects to be beneficial!

DIRECT FINANCIAL IMPACTS

According to the Socioeconomic Report on Regulatory Amendments found in Appendix H of the Draft SEIR, the Dept. states that in 2008:

A. Some 3,479 suction dredge permits were issued state-wide.

B. These 3,479 dredgers worked approx. 101,250 days, and spent an estimated $16.5 million on trip related spending, and an additional $7.4 million on equipment.

   This works out to an estimated $23.9 million dollars spent in California in 2008 by some 3,479 dredgers. Or, each dredger spent on average $6,869.

C. Then there's the value of the gold recovered, estimated at 3.4 oz for each of the 3,479 dredgers. This works out to an estimated 11,828.6 ounces of gold. At today's spot price of gold around $1,550.00 per ounce, the value of the gold not being recovered because of the prohibition on suction dredge mining is an estimated $18,334,330.00.

D. By adding the estimated $16.5 million for trip related spending, plus the $7.4 million spent on equipment, and the estimated $18.3 million value of the gold not being recovered; we get a total of $42.2 million dollars NOT being pumped into California's depressed economy. (Based solely on DFG's own figures from 2008. In reality (i.e.; 2011), the estimates on trip related and equipment spending are probably up at least another 20% due to inflation – add another $4.7 million for a 2011 total of $46.9 million).

   And this is just amounts spent by the miners. It does not take into account the wages and profits of all those who's livelihoods relied on a strong suction dredge mining industry. The continued prohibition on suction dredge mining is costing hundreds if not one thousand or more Californian's their jobs (not including the miners themselves… you know, those 3,479 individuals that can not get a permit since 2008).

E. In today's dollars, the continued prohibition on suction dredge mining is easily costing California's economy $60 Million Dollars annually.

FEES

For years (and possibly ever since the Dept. issued the first suction dredge permits), there has been a two-tier fee schedule where residents of California pay one fee amount, and non-residents pay another, much higher fee; just like hunters or anglers. The problem with this is, miners are in no way like hunters or anglers. Hunting and fishing is a *"privileged activity"* requiring a license; where as mining (at least on federal public domain lands or on locatable mineral mining claims) is a Congressionally granted *"statutory right"*.

By charging non-residents more for a permit than residents is like saying the residents "right" is more important or somehow better than the non-residents "right". This is a direct civil rights violation. Just because the Dept. has gotten away with it for years does not make it legal, or just.

The valuable mineral deposits found on the unappropriated public domain lands belonging to the United States are, by federal law and Act of Congress "free and open" to all citizens of the United States. They are NOT more free and open to California residents. As a resident of Oregon, I have every bit a right to enter public domain lands in California to search for and claim any unappropriated valuable mineral deposits I may find as a resident of California.

In no way can the Dept. justify this unequalness under the law. Fees for permit may ONLY cover the actual costs to the Dept. to implement the permit process and to issue the permits. Permit fees for mining activities performed on federal public domain lands or locatable mineral mining claims must be equal for all – whether someone is a California resident or not has nothing to do with it, as all are citizens of the United States; and are operating under the granted rights by the United States Congress.

LICENSE PLATES ON DREDGES?

Another ridiculous aspect of the preferred alternative is that the permit number or license number must be clearly posted on the dredge so that someone on shore can read it, I assume similar to the license numbers found on the bows of boats, or on each end of a car or truck. Might I ask just where the Dept. thinks there is room on a dredge to post something maybe as big as a car license plate for all to see?

Are hunters required to hang similar license plates around their necks so all can easily see that they have a license? No. Are anglers required to wear their licenses to kill fish so all can see? No. Anyone that wants to know if some person has a hunting or fishing license has to approach that person and ask them (and considering that at least the hunters are probably armed…). And yet, suction dredge miners, who have a statutory right to be operating must post such a license or permit? Excuse me… but if I own the mining claim, the minerals and the land they are in is my personal private and very real property by "granted right". The minerals, unlike deer and fish, do NOT belong to the state or the U.S. – they belong to the claimowner, exclusively. And part of the granted right is the right to mine or extract the minerals.

I urge the Dept. to quit thinking that suction dredge mining is just like hunting or fishing, as it is clearly NOT! I urge the Dept. to go read and study the Mining Law, starting with the Act of 1866, then 1870, and then the Act of 1872. If you are truly unbiased (in other words, have an open mind and no preconceived anti-mining bent), you will find that the Mining Law is like no other law on the books today. It is a law that grants rights, and the rights to real property, and freedom.

GENERAL COMMENTS

According to the SEIS:

Section 228

Suction Dredging

(c) Permit Application shall contain all of the following information:

(2) A list of up to six locations where the permit applicant plans to suction dredge. Location information shall include either:

(A) County, river or stream or lake name, township, range, section, quarter section, base, and meridian; or

(B) Approximate center point of the location using latitude and longitude.

For each location the California Active Mining Claim number, if applicable, and approximate dates of proposed dredging shall be listed.

(3) A list of all suction dredge equipment that will be used under the permit, including nozzle size, constrictor ring size (if needed), engine manufacturer and model number, and horsepower.

COMMENT ON (c)(2): All in (c) is, respectfully, absurd. As explained in my earlier comments, the state can not restrict which valuable mineral deposits found on public domain lands or locatable mineral mining claims a citizen is "free and open" to explore. The Dept. can not restrict suction dredge miners to six or any other number of locations. What part of ***"...all valuable mineral deposits in lands belonging to the United States**, both surveyed and unsurveyed, **shall be free and open to exploration..."*** don't you get? "ALL" means "ALL". "ALL" does not mean three, or six, or twenty. "ALL" means "ALL". "Free and Open" means unhindered, no further permission required; and it is solely up to the citizen miner to decide whether to continue working in one (or six) areas, or to move on to the seventh or hundredth area.

Mineral deposits are not fish or deer. The Dept. has no authority to restrict the number of locations a citizen chooses to explore, or work, or claim. As many valuable placer gold deposits are found in the streambeds of active streams, and as a suction dredge is possibly the only tool that can be economically used to find and work such deposits, and as a Discovery of valuable minerals is required (by the Mining Law) before a claim can be located, and as the Mining Law allows an individual to locate and own as many claims as they want; the *"up to six locations"* restriction violates the Mining Law by limiting the number of claims one could locate in a given year.

The restriction also requires the permittee to disclose information they may not have any idea of until after the fact. Case in point: I obtain a permit. I listed 5 locations. Two months after I get my permit I hear of some other stream that may have open unclaimed areas rich in gold. This restriction would mean I could not use a suction dredge on this new stream, simply because I wasn't even aware of this stream at the time I applied for your one of only 4,000 permits.

Another little problem with this six location limit is under both state law and federal law, the owners of unpatented mining claims are required to perform at least $100.00 worth of work or improvements on or for each claim, each year, in order to continue to hold the claim. And, of course, the best type of Assessment Work is actual mining. And of course, on many placer claims, the most economical method to mine the claim is to use a

suction dredge. Many people own more than six claims. They are REQUIRED BY LAW to perform the work (or loose the claim(s)).

(c)(3): So what happens if in the middle of the season I decide to buy a new dredge? Or, the engine on my dredge blows up because some wacko put sand in the crankcase some night and I have to get a new one? Or I want to switch from a 3" dredge to a 4" dredge? I see no provision to change my operation unless I first contact he Dept. and get, in writing, the dept's permission. How long does that take? Days? Weeks? And if denied, is there an appeal process?

And what's considered "suction dredge equipment"? The Dept. wants "A list of all…". Meaning what…. If I forgot an item, or added some new piece of equipment and didn't tell the Dept. first then I am in violation?

Does the State limit how many lakes or streams a licensed boater can boat in? Or how many lakes or streams an angler may fish in? Or forests a hunter may hunt in? Or even how many trees someone can hug? The answer to all is "No". And the hypocrisy is that no one has a "right" to do any of them; all they have is a mere privilege; and yet the state does not limit (generally) where they can go and the number of locations they may go to… and at the same time proposes to severely limit the number of locations a suction dredge miner operating under a Congressionally granted statutory right may dredge to six.

This is ridiculous and not based on anything real. There is absolutely no reason to believe that if I dredge in a seventh stream that there will be any extra added affect to anything compared to if I just stayed and dredged in any of the first six locations. Or is this particular restriction aimed at a single particular business that just happens to offer approximately 70 miles of rivers and streams in northern California to it's members to freely come and dredge on?

Again, what part of "FREE AND OPEN" don't you get?

****

MINING is a "right". It is NOT a mere privilege to be unnecessarily hindered or restricted on some theoretical potential for harm. After more than thirty years of suction dredge mining in California, Oregon, Alaska and many other states, to date, not one study, not one shred of creditable evidence has been put forward showing even one fish harmed or killed by a suction dredge. This is not to say that no fish have been harmed in 30+ years of popular suction dredge mining, but instead, that even "if" a fish was harmed or even killed, the number of fish (or anything else for that matter) affected compared to

the whole is infinitesimally small beyond insignificant. Because of this glaring lack of any evidence of harm after 30+ years, any sane person that did not have some hidden agenda would see that if there was a harm, it would have been recognized long before now. This raises the question of what is behind the motives of the Dept. of Fish and Game?

As an active advocate of suction dredge mining for over 12 years, I know there is no new science or study since 1994 that identified any new detrimental effect from suction dredge mining. So why all the new more restrictive changes? Could it be that the Dept. is more afraid, or even working with, the anti-mining activists to stop suction dredge mining? I am well aware of the history of the various lawsuits brought by certain tribes and environmentalist groups, and proposed legislation that eventually led to the prohibition on suction dredge mining in California in 2008.

I KNOW THERE IS NO SCIENCE TO BACK THIS UP. And for the most part, there is no law to back this up either.

For these and many other reasons (that I do not have time to mention – and from the Dept's past actions, I doubt it would do any good anyway), I respectfully urge the Dept. to adopt the ***"1994 Regulations Alternative"*** which calls for continuing to issue the permit under the previous regulations in effect prior to the 2008 moratorium.

Thank you for considering my comments.

Please place me on any mailing or messaging list compiled regarding the EIS and eventual permit.

Respectfully submitted by;

Tom Kitchar
P.O. Box 1371
Cave Junction, OR 97523

mythicalmining@cavenet.com

Attachments:

EXHIBIT A: *"TAK – WMD COMMENTS ON PROPOSED EIR – 2007"*
Comments submitted by Tom Kitchar – President, Waldo Mining District, P.O. Box 1574, Cave Junction, OR 97523 dated December 17, 2007.

Tom Kitchar - President
Waldo Mining District
P.O. Box 1574
Cave Junction, OR 97523

Sent via: electronic mail to
SuctionDredgeMining@dfg.ca.gov

December 17, 2007

To: California Department of Fish and Game
Attn: Suction Dredge Mining Program
1416 Ninth Street, 12th Floor
Sacramento, CA 95814

RE: CALIFORNIA REGULATORY NOTICE REGISTER 2007, VOLUME NO. 42-Z 1784

SUCTION DREDGE MINING EIR

Dear California Dept. of Fish & Game;

I thank you for this opportunity to comment on the proposed *Environmental Impact Report* (EIR) regarding the permitting of suction dredge mining operations within California. These comments are submitted as the comments of the Waldo Mining District (WMD), which was established in 1852, and is located in SW Oregon bordering the OR/CA state lines due north of Happy Camp, CA.; and as the comments of myself as an individual suction dredge miner for over twenty (20) years.

Many of the WMD's 125+ members purchase the California Suction Dredge Permit and own or work mining claims throughout California. Although my suction dredge operations are mostly in Oregon, I have, on at least three (3) occasions purchased a California Suction Dredge Permit, and operated both a six (6) inch and eight (8) inch suction dredge in the Klamath River. On one occasion, I purchased the California Permit (approx. $140.00) and then never used it.

In the past 20+ years, I have operated suction dredges with 2-1/2", 3", 4", 5", 6" and 8" hose sizes, in small gulches, streams, creeks, and rivers within South Dakota, Oregon, and California.

SPECIFIC COMMENTS:

1. Whether suction dredge mining results in adverse impacts to the environment.

COMMENT: As phased, this question is ludicrous, and is heavily weighed to find only adverse impacts. Everything humans do, including (but not limited to) suction dredge

mining, fishing, boating, rafting, hiking, swimming, etc., have "some" impacts to the environment, both adverse and favorable. To only seek adverse impacts shows a strong predetermined negative bias towards suction dredge mining, is unscientific, highly unfair, and fails to take into consideration possible significant positive environmental benefits.

Be that as it may, the answer to the question of whether-or-not suction dredge mining results in adverse impacts to the environment is, "yes". Of course it does, as does nearly everything else humans do. Suction dredge mining also results in some favorable impacts. The real question is whether-or-not suction dredge mining results in unnecessary, unreasonable, and/or significant adverse impacts as weighed against the favorable impacts; and if so, can or should these impacts be mitigated by any further degree of restriction.

Over the past 20-30 years, many scientific studies (over two-dozen) performed by various state universities, state agencies (including CDFG), and federal agencies (including the BLM, U.S.D.A. Forest Service, EPA, USACE, and the USGS) on the effects of suction dredge mining (and related subject matter) on the environment have all concluded that *with certain limiting restrictions, all adverse impacts are short-lived, highly localized, and insignificant.*

RECOGNIZED ADVERSE IMPACTS:

A. ENTRAINMENT: Studies have found little to no impacts on adult fish passing through a suction dredge. Mortality rates increased with younger fish, reaching a high mortality rate at the fry and egg stages. The obvious (and currently practiced) mitigation is the prohibition on suction dredge mining during periods when fish eggs and fry are present. With the total lack of any evidence to the contrary (i.e.; in 30+ years of suction dredge mining in California – and other states, not one (1) harmed or dead fish, fry, or egg has been presented as harmed or killed by suction dredge mining) the current level of restriction set by the CDFG is sufficient to protect the various species of fish present at suction dredge mining sites.

I would also note that since most of the 24+ studies were done (i.e.; most done in the 1980's through mid-1990's), there has been a major change in suction dredge technology which if anything, makes the modern (post 1994) suction dredges considerably less likely to harm or kill fish, or other aquatic life through entrainment. This change occurred with a modification of the *"header box"* on all suction dredges (NOTE: The purpose of the header box is to connect the suction hose or power-jet to the front of the sluice box.) Most older models of suction dredges (including the dredges used in most of the suction dredge studies) came equipped with what is known as a *"crash-box"* header (SEE FIGURE 1); in that water and sucked up material entered the enclosed box from the suction hose and then crashed or slammed (at a velocity of 10-20+ fps) into a wall within the box, before dropping down into the sluice box. This "slamming" or "crashing"

caused most, if not all, adverse impacts to fish and other aquatic species from entrainment.

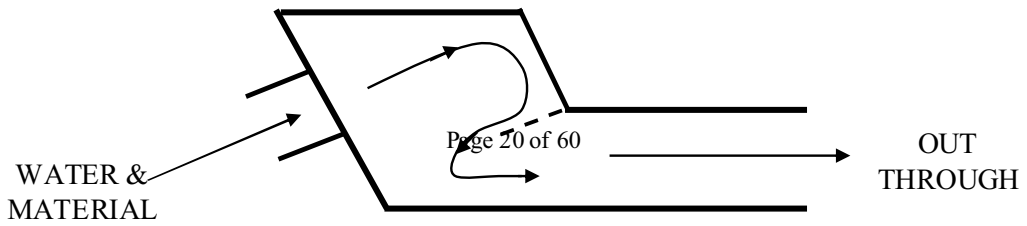


FIGURE 1 – CRASH BOX HEADER

Since about 1994 or so, most new suction dredges come equipped with what is called a *"horn"* or *"flare"* type header (SEE FIGURE 2), wherein all water and materials flow smoothly through the header into the sluice box. Indeed, the objective with the *"horn"* type header is to eliminate, as much as possible, any turbulence in the flow, i.e.; there is no "crashing" or "slamming"). . . making the suction dredge much less likely to cause any adverse impacts by entrainment.

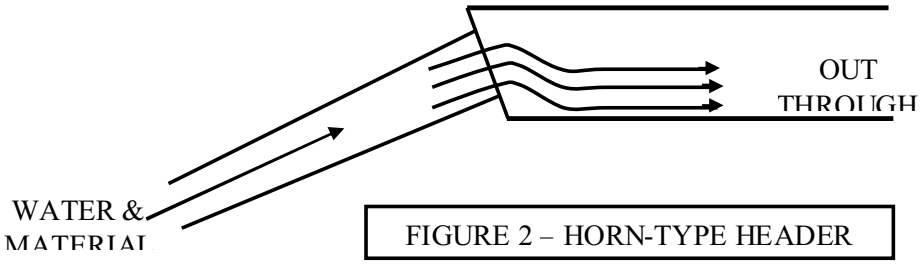


FIGURE 2 – HORN-TYPE HEADER

In Figure 1, water and material enters the enclosed crash-box header through a circular opening equal to the size of the suction hose the dredge is using. The box itself is normally 14" wide (3" dredge) to over 20" wide (5" dredge and larger). This type of header box creates tremendous amounts of turbulence, with water, rocks, sand & gravel crashing and smashing against each other and the walls of the box before discharging into the sluice box. Figure 2 shows a horn-type header, which is in the shape of a flare, widening out to nearly the same width as the sluice box, causing an unrestricted smooth flow of water and material into the sluice box.

As far as this commenter knows, none of the studies done on the effects on fish and aquatic species from entrainment through a suction dredge were done with a modern *"horn"* type header. Considering the major changes with the *"horn type"* header to the flow characteristics as compared to the older *"crash box"* headers, it is highly likely that even a high percentage of fry and fish eggs will survive entrainment in the newer dredges.

As far as this commenter knows, only one study has been done testing the effects of entrainment through a horn type dredge. Although this study was not a true scientific study, the results speak for themselves:

HOT DOG STUDY

PERFORMED BY: Bedrock Prospectors Club of Puyallup, Washington, Inc.

PARTICIPANTS: Bill Willette, President of Bedrock Prospectors; Ron Willerscheidt; Harleye Edwards; Doug Irish, and Bruce Beatty, Vice President.

LOCATION: MINER'S RALLY, River Oaks RV Park, Oroville, Wa., August, 2003 on the Similkimeen River.

EQUIPMENT: 4" Dahlke dredge and an uncooked hot dog.

ABSTRACT: Because the activity of suction dredging by small-scale miners and prospectors receives a considerable amount of suspicion in regards to destruction of habitat and to fish life itself this impromptu study was designed to dispel the belief that fish are ground up like fish burger. A dredging demonstration was taking place on the river itself with WDFW Biologist on hand and was actually running fresh water mussels through the dredge. The idea of putting a simulated 6" fish through the suction nozzle would prove one way or another that a fish, if it inadvertently or purposely were entrained would likewise be unharmed as the mussels proved to be. A standard 6" hot dog would be a suitable simulation.

PROCEDURE: A hot dog was attained and the 6.0 hp dredge motor was started and maintained at ¾ speed. This dredge is equipped with a T-80 air pump, 20' suction hose and suction nozzle, foot valve with a Washington State legal foot screen, a sluice box and jet flare (*"horn type"* header) emptying into the sluice, equipped with miners moss and riffles.

While the dredge was pumping a standard amount of water through the suction nozzle, the hot dog was introduced into the nozzle and then recovered (in mere seconds) after it dropped off the end of the sluice box. The end of the sluice box is about 4-6" from the water surface. This hot dog procedure was repeated in rapid succession for a total of 10 (ten) round trips.

RESULTS: Upon the tenth retrieval of the hot dog, a close inspection of the outer skin showed *complete and unaltered integrity of the specimen*. One has to agree that the outer, uncooked skin of a hot dog is somewhat fragile and vulnerable to abrasion or tearing.

CONCLUSION: If a standard uncooked hot dog can pass ten (10) times through a modern 4" suction dredge with a *"horn type"* header without any sign of harm, then it is reasonable to believe that the high rates of mortality measured in the earlier suction dredge studies (done with *"crash-box"* headers) on the effects of entrainment of fry or fish eggs would show a sharp decline in mortality, making the modern horn equipped suction dredge much less dangerous to aquatic life entrained through the dredge.

SUMMARY: Since the time when most of the studies on the effects of suction dredge mining were done (i.e.; pre-1995), the change in sluice box header design (to the *"horn"* type) greatly decrease the chances of adverse impacts to fish and other aquatic species through entrainment. This means, if anything, that modern suction dredges are even more fish friendly than the types of dredges used in studies prior to 1995.

B. IMPACTS ON LOCAL HABITAT: The area impacted by a suction dredge operation consists of the actual excavation, and a short area (10-20 ft.) usually immediately downstream of the excavation where tailings are deposited, and a slightly larger area (20-40 ft.) where lighter sand and silts settle out. There is a natural limit to the size of the area disturbed by suction dredging, because if the dredge operates in the same area long enough, it eventually moves forward over the excavation and actually begins to fill the rear of the excavation as it excavates new material from the front. Because of this, the maximum area a dredge will disturb is equal to the area excavated, along with an area approximately 10-40 ft. below the initial excavation.

In all the previous studies done to date on the effects of suction dredge mining, it was found that the populations of all aquatic species (i.e.; bugs, worms, etc.) returned to near pre-dredging numbers after a period of one to two months; making any adverse impacts on aquatic life highly localized, highly temporary, and insignificant.

C. INCREASED WATER TEMPERTURE: In at least one lawsuit brought by environmental organizations (NATIONAL WILDLIFE FEDERATION, et al. vs. OREGON DEPT. OF ENVIRONMENTAL QUALITY, Circuit Court of the State of Oregon for the County of Multnomah, Case No. 9706-04970, Nov. 1998), environmentalists argued, among other things, that suction dredge mining causes an increase in water temperature which is deleterious to fish and other aquatic life. The Oregon DEQ lost this case due to violations of administrative procedures and was ordered to give proper notice and study to this topic before issuing any suction dredge permit for operations within streams identified as temperature limited. Upon study by ODEQ, it was found that suction dredge operations do not cause a measurable increase in water temperature, and that operations could be permitted.

It has been argued that suction dredge operations *"may"* cause an increase in water temperature due to:

1. INCREASED SOLAR HEATING OF TURBID WATER CAUSED BY DREDGING.

COMMENT: This theory sounds logical, however, even though a slight temperature increase may be found at the surface of turbid water, deeper waters shaded by the turbidity actually would be cooler as they would receive less solar radiation. Because of this, it is highly likely that there is a zero over-all effect on water temperature from suction dredge mining (or a net cooler measurement).

2. THAT WATER IS WARMED DUE TO FRICTION AS IT PASSES THOUGH THE VARIOUS HOSES AND PUMP ON THE DREDGE.

COMMENT: Although physics says friction causes heat, the amount is so insignificant that it is doubtful even NASA could measure any change.

3. ENVIRONMENTALISTS ALSO CLAIM THAT MINERS CUT DOWN OR REMOVE TREES OR OTHER SHADE PROVIDING VEGETATION ALONG BANKS WHICH CAUSES INCREASED SOLAR HEATING OF WATER.

COMMENT: Federal land management agencies (i.e.; BLM & Forest Service) regulations (at 43 CFR 3809 and 36 CFR 228) do not allow the removal of trees or other riparian vegetation without prior approval from that agency. However, even if a suction dredge miner removed a tree or shrub, the effect would be so infinitesimal to the point of being less than insignificant when compared to the miles and miles of unaffected stream bank. Furthermore, most state suction dredge permits already prohibit the removal of trees and vegetation from stream banks (i.e.; permits prohibit dredging into the banks or outside the wetted perimeter).

D. REDDS IN TAILING PILES: One of the favorite arguments used by those against suction dredge mining for more restrictions on suction dredge mining is that salmon redds have been observed in suction dredge tailing piles, and that these tailing piles then wash away due to high water flow events, causing the destruction of any eggs or fry still in the tailing gravels.

COMMENT: In at least several cases in Oregon as documented by the Siskiyou National Forest (SNF), supposed redds in tailing piles were in reality depressions made in the upstream side of the tailing pile by the miner while taking the dredge apart. No one has ever actually observed salmon building a redd in a dredge tailing pile. No one has actually observed salmon laying eggs in a dredge tailing pile. No one has actually observed eggs in a dredge tailing pile, and no one has actually observed fry emerging from a dredge tailing pile.

At the most, all anyone has actually observed is a depression in a dredge tailing pile that *"looks like a redd..."* but in reality, could easily have been created by the miner while walking around on the tailing piles, or even by unscrupulous anti-mining environmentalists or agency personnel in an attempt to falsely create what appears to be a redd. (NOTE: I personally visited the site of supposed redds in dredge tailing piles on Althouse Creek, accompanied by SNF fish biologist Dan Delany. When questioned as to why he believed the observed depression was in fact a redd, Mr. Delany responded that it (the depression) was the size and shape of a redd, and in the correct location for a redd. I then asked him if the same depression could be artificially created by anyone with a pair of rubber boots with knowledge of what a redd looks like; and he answered, *"Yes."*

I then observed that the supposed redd was located in the upstream side of the tailing pile, exactly where someone would have had to stand (creating the depression) in order to take the dredge apart. It should also be noted that the tailing pile in question was created by a dredging operation which took place in July of that year. We visited the site later in the fall after the dredge was removed.

The PROOF that this was not a redd in a tailing pile is the fact that until the arrival of winter rains (usually in December), Althouse Creek does not flow on the surface all the way to the Illinois River! Deep valley bottom gravel beds (estimated at 50-70 ft. thick) absorb all surface water creating a dry creek channel in the last 3-4 miles of Althouse Creek. Unless salmon tunneled or walked those 3-4 miles to the water, there was no way

that any salmon were in Althouse Creek creating redds in the summer or fall. Furthermore, by the time enough rain has fallen to establish surface water in Althouse Creek all the way to the river, there would have been enough flow to wash away and spread out any and all tailing piles.

Due to the complete lack of any real evidence that salmon create redds in dredge tailing piles, and that at least based on the case on Althouse Creek, it appears more likely that the whole issue of redds in dredge tailing piles is a pure fabrication by those desiring to further restrict or prohibit suction dredge mining altogether. As with all other claims of adverse impacts caused by suction dredge mining, we find the use of the words *"may", "might", "the potential",* etc. when discussing redds in tailing piles – note that the words used are not *"do", "did", "were found to",* etc.. Pure speculation, not based on reliable scientific fact.

However, even if salmon create redds in dredge tailing piles, the number of redds in tailing piles as compared to the number of redds in natural gravel beds is ridiculously low, unless there are no other suitable gravels in the stream. Even considering this worst-case scenario (i.e.; no other suitable gravels), due to the fact that many of the previous dredge studies have found that suction dredge tailings can make ideal spawning beds for years to come, it seems the trade-off of possibly loosing some or all of the eggs/redds in dredge tailing piles in one (1) year weighed against the possibility of creating ideal spawning beds for years to come (when little or none exists) seems well worth the possible temporary adverse impacts. In fact, suction dredging does such a good job of cleaning, sizing, and loosening the gravels and beds that the CDFG ought to be paying suction dredgers for creating and enhancing fish habitat and spawning grounds… not the other way around.

E. POSSIBLE DESTRUCTION OF EXISTING REDDS: As noted in previous studies, existing redds may be adversely impacted by suction dredge operations. This may occur in several ways;

1. The dredge excavation may take place in gravels where there is an existing redd. In this case, the redd will be destroyed and any eggs present will be passed through the dredge and discharged out the end. Although the newer "horn-type" dredges may not necessarily cause high mortality of the eggs through entrainment, the destruction of the redd and the depositing of the unprotected eggs downstream probably will.

2. The discharge of tailings from a suction dredge may bury an existing redd. If this happens, the eggs will possibly smother, possibly causing a high degree of mortality of the eggs, depending on how deep the redd is buried.

3. Suction dredge miners may inadvertently step on or walk through an existing redd, possibly squishing the eggs, or disrupting the integrity of the redd causing a degree of egg mortality.

The current fix for these problems in the present permit is simple; i.e.; suction dredging is usually prohibited during periods fish eggs may be present in the gravels . . . however:

It is interesting to note that the Dept. casually prohibits suction dredge mining in whole streams, or large stream segments, based on the possibility of there being a redd or redds present. On the other hand, fishermen are only "cautioned" to watch out for redds and told not to step on them. In other words, fishermen are trusted to look for redds and to stay away from them (even though the water they are walking through may be so dirty that they can not even see a redd), while suction dredge miners, who while working underwater have every opportunity to observe a redd are not trusted to stay away from them but are instead prohibited from operating sometimes for months at a time.

Considering the inequity of this situation, it would be more just if the Dept. instructed miners as to what a redd looks like and where they are found, and then asked them to just stay away from them. Before operations, suction dredge miners could easily swim around the area to ensure there are no redds at the excavation site or immediately downstream. Areas with a high concentration of redds could be flagged, and miners could be told to stay out of these areas during incubation. Placing an arbitrary prohibition on whole stream segments based solely on the possibility that there may be a single redd somewhere in miles of stream is absurd, especially in the many miles of high mountain streams devoid of suitable spawning gravels.

2. Whether suction dredge mining under the Department's current regulations governing such activities results in deleterious effects to fish.

COMMENT: *"Deleterious ?"* In what way? Suction dredge mining does not kill fish. Suction dredges do not hook them through the mouth and drag them from their natural element to suffocate. Nor do suction dredge miners stretch nets across stream channels to ensnare multitudes of fish in the name of killing even more fish. No, suction dredge miners leave all these *"fish killing"* activities to sportsman, fishermen, and Indian tribes. (And I might add that all of the above mentioned parties that deliberately kill fish are sanctioned by the CDFG in the form of fishing licenses. It seems to me odd indeed that the state agency empowered to protect fish would restrict or prohibit an activity which is being performed as a *statutory right* (i.e.; mining) just so that there might be even more fish available for others to kill (as a licensed privilege).)

One would think that if suction dredge mining was in any significant way deleterious to fish, after 30 + years of the popular use of these machines, and the over two-dozen scientific studies on the effects of suction dredge mining done to date, some level of positive proof would have shown up by now proving a deleterious affect. One would

think that after all these years, and after literally thousands of dredges being used in not only California but also Oregon, Washington, Alaska, Idaho, Montana, etc., if there was a harm, someone would have found it by now. Instead, regulatory agencies and anti-

mining groups are still, after over 20 years of research to find any harm, falling back on the age-old *"could", "might, "the potential to",* etc..

Also, I find it almost absurd that the CDFG would even have to ask such a question. For years CDFG has collected thousands if not hundreds of thousands of dollars from the miners as permit fees. The CDFG issues the permit, and is charged with (amongst other things) monitoring for compliance. What has the Dept. been doing all these years with all that money? Why does the Dept. have to ask non-experts for information the Dept. should know? Doesn't the CDFG *"know"* whether or not suction dredge mining is deleterious to fish? . . . (Apparently not, otherwise they wouldn't have to ask outsiders).

Any logical sane person would believe that if anyone knew of any deleterious effects to fish from suction dredge mining, it would be the CDFG itself. The fact that the CDFG has to ask the inexpert, unknowledgeable (and very possibly highly biased) public if they know of any deleterious effects must mean that to date, the CDFG has not found any… even though they are the agency most likely to document any such affects (with such staff experts as biologists, hydrologists, etc.). One would expect that the Dept. would *"know",* in no uncertain fully documented terms, one way or the other, and would be fully prepared to prove it.

That the Dept. would ask such a question of the general public raises the question, *"Who is the Dept. going to believe?"* Me? A miner? If so, then of course I say there is no harmful effect, the current level of regulation is already too restrictive, and that the CDFG ought to pay suction dredge miners for all the good they do. On the other hand, maybe the Dept. will believe those out to stop suction dredge mining any way they can, or those wanting to do anything they can to protect fish so that they or others have possibly more fish to kill. Neither myself, the environmentalists, Indian tribes, or fish killers are experts. For the most part, none of us are biologists, expert researchers, or scientists . . . but we all have one thing in common, and that's *"something to gain"*. This means that for the most part, any comments or information submitted by the public regarding deleterious effects to fish from suction dredge mining is useless, simply because for the most part, most members of the general public do not have the knowledge and expertise to determine *"what"*, exactly, harmed a fish. Not guess, hypothesize, speculate, wish or believe. In the matter of regulating and/or restricting any form of mining being performed under the U.S. Mining Law Act of 1872 as amended (whereby the miner has a fully protectable *"right"* granted by Congress to mine), regulation and restriction must be based purely on unbiased scientific research, study, documentation, and proof, performed by those fully qualified in the various fields. Certainly not by mere amateurs, at best.

Instead of relying on the inexpert opinions of the general public, I would suggest that the Dept. look at the previous studies done on the effects of suction dredge mining. A list of many of the previous studies on suction dredging is attached, see Exhibit I. Rather than

attempt to tell the Dept. what these studies mean, I will assume that the Dept. is either already familiar with the studies and their conclusions, or will be more fully appraised of them by other commenters; with a few exceptions (see Exhibit II).

Since the last time CDFG examined suction dredge mining (1997?), there have been at least two additional studies or reports done on the effects of suction dredge mining:

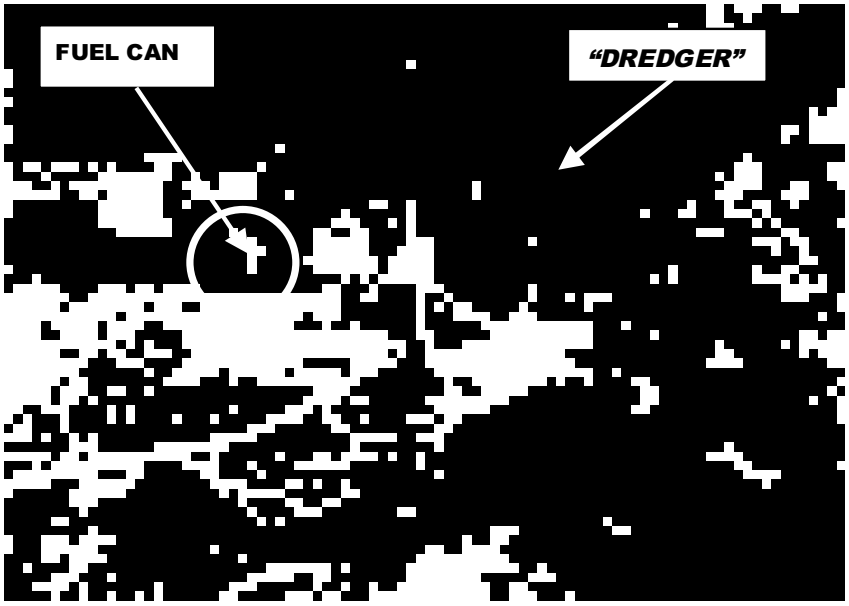
1. The U.S.D.A. Siskiyou National Forest (SNF) prepared a *Draft Environmental Impact Statement* (DEIS) *"Suction Dredging Activities Operating Plan Terms and Conditions for Programmatic Approval of Suction Dredge Plans of Operation"* (Dec. 2001); and

2. As a part of the SNF Environmental Impact Study, Oregon State University (OSU) prepared a cumulative effects report: *"Response of fish to cumulative effects of suction dredge and hydraulic mining in the Illinois subbasin, Siskiyou National Forest, Oregon"* (Peter B. Bayley, Dept. Fisheries & Wildlife, Oregon State University, April, 2003).

It must be stressed that the DEIS prepared by the SNF was in fact only a *"draft"*. Although it did go to public comment, it was shelved before becoming *"Final",* as the need for the EIS became moot. Many of the issues raised in the DEIS were challenged during the comment period, but because the EIS was never completed, none of the issues raised were ever answered, and there was no option to appeal. The CDFG should not rely on this document as being anything more than a wish list granted, by certain administrators within the Forest Service (and since removed), to a single local environmental organization out to prohibit suction dredge mining.

A good example of the heavy anti-dredging bias built into the DEIS is the photograph entitled "suction dredger with fuel container in creek" (SNF-DEIS, pg. 120). The photo shows a *"dredger"* raking or shoveling tailings behind the dredge, and shows a fuel can balanced on a large rock in the middle of the stream. Relying on this photo, and the following text:

> "A small amount of grease, gasoline, and motor oil would likely be spilled into the stream **every time** a suction dredge is used. Annually, several gasoline spills (into a stream) exceeding one gallon are **conceivable**." (emphasis added)



suction dredger with fuel container in creek

SNF-DEIS, pg. 120

the DEIS makes a case that **all** suction dredge miners spill grease, gasoline, and motor oil ***"every time"*** a suction dredge is used. This sounds like a very serious threat to the environment (i.e.; these constant and continuous spills). The photograph just further makes the case, after-all, the photo shows a *"dredger"* with a fuel can in the middle of the creek. What more proof would you need?

The reality is far from the DEIS. The so-called *"dredger"* in the photograph is Mr. John Nolan, who was at the time of the photograph the Mineral Tech for the SNF. What the photograph really shows is a Forest Service suction dredge operation being performed by an employee of the Forest Service, practicing methods and techniques presumably set-out by the Forest Service. Apparently, it is standard FS policy to balance fuel cans on rocks in the middle of the creek. Considering the haphazard way the FS stores fuel, I don't doubt that suction dredges owned and operated by the FS leak oil, and I do not doubt FS dredgers spill fuel and oil… probably for the very reason that *they do not have to pay for the fuel and oil they spill* (whereas real miners must pay for every drop of fuel and oil), nor do they care if they recover any gold or not. In reality, most suction dredgers are super careful not to spill any fuel (i.e.; Fuel is heavy to pack to the dredge and expensive. Also, any fuel spilled could easily get on or near the air-compressor, making it impossible to work underwater until the spill is totally cleaned up (fuel fumes in the air supply are dangerous and will make the diver ill). Because of all this, most dredgers do not spill gasoline), or especially oil (as oil spreads and gets on everything, and could contaminate the recovery system and cause the loss of gold).

One last thought about the expertise involved in the SNF-DEIS: It mentions the spilling of *"grease"*. 99.99% of all suction dredges do not use *"grease"*. There is no *"grease"* on a suction dredge to *"spill"*. There is nothing on a suction dredge that needs "greasing". In other-words, who-ever wrote this portion of the DEIS knew little to

nothing about suction dredges, and used an inter-agency photograph to show a predetermined threat. All this raises the question about all the information contained in the DEIS… is it all as bogus?

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However, the report prepared by OSU stands alone from the SNF DEIS, as it was a study completed onto its-self, and was performed by qualified professionals that should not have had any predetermined bias regarding the results. In order to more fully understand the conclusions of the OSU Cumulative Effects Report (CER), it should be noted that the SNF area experiences the highest levels (i.e.; numbers) of suction dredge mining in Oregon. The area was historically rich in placer gold which has been mined here since 1851. Placer mining methods followed right along with methods as they developed in California. Simple panning led to sluice boxes, hydraulic mining, dragline or bucket dredging, backhoe/dozer trommel mining, and suction dredge mining. All-in-all, the SNF area is nearly identical to NW California (in fact, part of the SNF is in NW Calif.), with the only real difference being the larger rivers and streams in the Klamath basin.

For the purposes of determining whether there are deleterious effects to fish from suction dredge mining, the high similarity of SW Oregon and NW California, along with the general nature of the issues involved (i.e.; effects of dredging), make the conclusions of the OSU CER highly relevant. In particular, the CER concluded:

> "Analyses of observational field data sets can never be expected to produce strong results compared with laboratory or field experiments (Diamond 1986; Rose 2000). This is particularly true when the sampling study has not been designed to test the specific variable of interest. However, there are not realistic alternatives because this variable, suction dredge Honing, cannot be controlled or easily measured over a sufficiently larger number of drainages to provide a design robust enough to account for confounding factors and provide enough statistical power."
>
> "The statistical analyses did not indicate that suction dredge mining has no effect on the three responses measured, but rather ***any effect that may exist could not be detected at the commonly used Type I error rate of 0.05.***" (emphasis added).
> "The reader is reminded of the effect of scale. Localized, short-tern effects of suction dredge mining have been documented in a qualitative sense. However, on the scales occupied by fish populations such local disturbances would need a strong cumulative intensity of many operations to have a measurable effect."
>
> "Given that ***this analysis could not detect an effect*** averaged over good and bad miners and that a more powerful study would be very expensive, it would seem that ***public money would be better spent on encouraging compliance with current guidelines than on further study.***" (emphasis added).

Even though the OSU CER was based on existing studies, it should be noted that the analysis *"could not detect an effect"*. This does not necessarily mean there is no effect, but rather that if there is a cumulative effect, after over 30 years of suction dredge mining

in the SNF by hundred or thousands of suction dredge miners, it is so miniscule to be below nonsignificance. To date, no study has shown a measurable effect. The CER even suggested that the only way to create a measurable effect would be have a large number of suction dredges operate in a small area (i.e.; many dredges close together), for a long period of time . . . which is something suction dredgers rarely, if ever do. (For the simple reason that no one wants to work in the turbidity cloud from another dredge, it's hard to see making it highly dangerous). Other factors such as length of a mining claim, access, and that most suction dredgers only mine 1-3 months per year, makes it virtually certain that the scale of intensity suggested in the OSU CER will never occur (i.e.; many dredges close together for a long period of time).

The OSU CER even went so far as to recommend that considering the great public expense performing a powerful enough study to "maybe" measure an effect, "*…public money would be better spent on encouraging compliance with current guidelines than on further study.*"

Considering the conclusions of the OSU CER along with the conclusions of all the previous studies, and the fact that CDFG it-self does not *know* if there is a deleterious effect from suction dredge mining; and after over 30 years of thousands of suction dredge operations throughout California (and other states); it stands to reason that if there was a measurable deleterious effect from suction dredge mining, some one, somewhere, after all these studies and time, would have found some shred of documented proof. Instead, there is no proof… probably because any and all deleterious impacts are so short-term and localized that they are totally insignificant and inconsequential.

It is interesting to note that in the failed California Assembly Bill 1032, there was a provision for the Dept. to remove certain restrictions and/or prohibitions on suction dredging only after the suction dredger proved there would be no deleterious impacts. In other-words, the Dept. would have the miner prove a negative – which by its very nature, is impossible. It also goes against one of the basic tenants of our system of government where all are innocent until proven guilty. All this really raises some questions about the mind-set of certain Dept. and legislative personnel.

Without any documented new evidence of a deleterious effect from suction dredge mining, the below conclusions from the U.S. Army Corps of Engineers still hold true:

Author(s): US Army Corps of Engineers
Title: Special Public Notice 94-10
Source: US Army Corps of Engineers, SPN 9410, Sept. 13, 1994
Purpose: To show the finding of de minimis (inconsequential) effects on aquatic resources for 4-inch and less suction dredges and hand mining.
Method(s): results of field studies and court decisions
Conclusion(s): **Four-inch and smaller dredges have inconsequential effects on aquatic resources.** ***"This is an official recognition of what suction dredgers have long claimed; that below a certain size, the effects of suction dredging are so small and so short-term as to not warrant the regulations being imposed in many cases. The U.S. Environmental Protection Agency (EPA), has ignored this concept, although numerous studies, including the EPA's***

> ***own 1999 study of suction dredging, repeatedly and consistently support the Corps finding de minimis effects. The reports consistently find no actual impact of consequence on the environment, and so almost always fall back to the position that potential for impact exists. Studies to date have not shown any actual effect on the environment by suction dredging, except for those that are short-term and localized in nature."*** Suction dredges of larger than 4 inches generally have more than de minimis effects on the aquatic environment and therefore requires authorization. (emphasis added)
>
> ***"The regulatory agencies should be consistently and continually challenged by the dredging community to produce sound, scientific evidence that support their proposed regulations. To regulate against a potential for harm, where none has been shown to exist, is unjustifiable and must be challenged."*** (emphasis added)

I stress that unlike all other activities the CDFG regulates; mining is unique in that it is the only activity being performed as a *"right"* (with the possible exception of certain Indian treaty fishing rights). Yes, the Dept. is charged with protecting fish, but it may only restrict mining when there is documented scientific proof of a specific harm. This approach to regulation of mining differs from other forms of regulation in that when regulating a privileged activity (such as hunting or fishing), the Dept. is allowed to regulate for a possible *"potential for harm"*, even though no harm has actually been shown to exist (e.g.; fishing or hunting kill limits, seasons, etc.). I say that the Dept. is *"allowed"* to restrict *"privileged"* activities in this manner (i.e.; restricting without scientific proof of a harm), because the Dept. is ultimately the one giving the permission needed to do the activity (i.e.; there is no *"right"* to fish or hunt) in the first place. The difference is that miners already have the right to mine their minerals. That right may only be restricted when a harm has been shown to exist with documented scientific proof.

The answer to the question of whether the current regulations are sufficient to protect fish is "yes". As no harm has been shown to exist or be caused by suction dredge mining under the current regulations, there is no justification for any higher level of restriction.

3. Whether there are changed circumstances or new information available since 1994 regarding suction dredge mining and the environment generally.

COMMENT: See my comments on question #1 above regarding the newer horn-type header box for suction dredges, and comments on question #2 on the Cumulative Effects Report by Oregon State University.

I would add that the Dept. should consider the not inconsequential beneficial impacts from suction dredge mining:

A. Suction dredge miners remove hundreds of pounds of lead and mercury annually from California streams and rivers. (Note that much of the recovered lead is in the form of *"fishing sinkers"* (which were deliberately thrown into the waters of California by

licensed fish killers), and *"bullets"* (which were shot from guns by people also licensed by the Dept. to kill wildlife). Most of the mercury recovered was originally spilled by earlier miners from the days of large bucket-ladder dredges and hydraulic mining (circ. 1880-1930s), or of native origin.)

Suction dredge miners remove these toxic materials from California streams at absolutely no cost to the citizens of California. No other plan or operation exists to remove these toxic substances, probably because of the great expense to the public to even attempt the task. Without suction dredgers freely and automatically removing these toxic materials, the levels of contamination will do nothing but increase. For these reasons alone, the Dept. ought to allow every possible leeway to suction dredge miners as in reality, they are detoxifying the environment for generations to come.

B. Numerous studies have shown that fish require certain gravel characteristics for spawning. Many streams, especially those in "gold country", are suffering from the effects of 100+ years of unregulated large-scale mining. These historic operations deposited millions of cubic yards of bank material (as tailings) into the rivers and streams, which then, for the most part, solidified in place. Instead of clean, loose sands & gravels, many stream bottoms are devoid of any areas for spawning.

Suction dredges, by excavation and redeposit, clean and loosen the stream bed materials, potentially creating (and as shown in several studies) near perfect spawning grounds for years to come.

Both these factors, ("A" & "B") are benefits from suction dredging that have been well documented in the various studies on suction dredge mining. They are *"significant"*, in that the beneficial impacts are long-term to permanent. That they are performed at no cost to the public is icing on the cake.

C. Seasonally, suction dredge miners create deep pools that fish have been documented to hold in due to the cooler water. In some waterways, these deep holes are the only available cool refuge during the late summer months.

D. Suction dredgers remove tons of other man-made trash and garbage from the stream bed and along the banks.

E. Suction dredge miners, and their families, contribute millions of dollars to local communities and businesses, many of which will fail if mining is prohibited or highly restricted.

Weighing all these documented and proven beneficial impacts from suction dredge mining against the undocumented and unproven hypothetical adverse impacts and one should conclude that suction dredging is an activity that should be encouraged when-ever and where-ever possible.

4. Whether changed circumstances or new information available since 1994 indicates suction dredge mining under the Department's existing regulations is resulting in new significant or substantially more severe environmental impacts than previously considered by the Department.

COMMENT: As far as I know, the studies or information on suction dredge mining and fish since 1994 all continue to follow the party-line with theoretical generalities that can't be measured or documented . . . and most conclude that there is or might be a *"potential"* for harm.

The only new and/or significant impacts caused by suction dredging since 1994 is that there are a few more miles of streambed cleaned of lead and mercury and converted into spawning grounds. There is not one (1) fish that anyone can claim was killed or injured by suction dredging. No streambeds were destroyed or made inhabitable. "IF" there is a decline in fish, the cause has nothing to do with suction dredging. (Myself, if I was CDFG, I would maybe do something about all these people deliberately killing fish, or the sea-lions & seals, or ocean conditions, etc., and quite worrying about a group of people that are harming nothing and doing considerable good to the environment and society.

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GENERAL COMMENTS:

1. PERMIT FEES: The cost of a general permit is too high. CDFG do nothing but rubber-stamp the general permits. This takes all of maybe 10 minutes of work, and does not account for the all the fees collected. Considering that every known impact from suction dredging is beneficial to fish and the environment, the cost of this permit should be set at a level just high enough to cover the costs to the Dept. for processing and monitoring.

I would also argue against the practice of charging out-of-staters a higher permit fee. Miners operating under the provisions of the U.S. Mining Law of 1872 have a right to mine on public lands, and should not be penalized by higher fees just because they come from a different state.

The high fees involved keep individuals such as myself from operating in California. Why do I have to purchase an expensive permit that covers a whole year when all I want to do is dredge for a week or two? The Dept. could easily offer a short-term permit that covers a period of 30 days or so at a much reduced cost. This would encourage more people to come to California to dredge, which would result in more benefits to the environment and local economies.

Another cost saving to the Dept. would be to do what Oregon DEQ does, and that is issue a permit that is good for a period of five (5) years. This alone would reduce the needless annual paperwork of the Dept. at a tremendous cost savings to the state, and to the permittees.

2. When contemplating regulating mining, agencies would be well advised to remember that mining (under the 1872 Mining Law) is a right, not a mere privilege. Way too often agencies do not understand the special place mining has in this country. The National Mining and Minerals Policy Act of 1970 states inpart:

> "The Congress declares that it is the continuing policy of the Federal Government in the national interest **to foster and encourage** private enterprise in (1) the development of economically sound and stable domestic mining, minerals, metal and mineral reclamation industries, (2) the orderly and economic development of domestic mineral resources, reserves, and reclamation of metals and minerals to help assure satisfaction of industrial, security and environmental needs..." (emphasis added)

Fostering and encouraging means to help miners… not unnecessarily restrict or prohibit them. Also, it does not mean placing economic hardships on miners in the form of exorbitantly high permit fees (i.e.; charging me $160.00 to dredge for a single day is not "fostering and encouraging").

The following excerpts from a Forest Service document may shed some light on the part minerals management plays in relation to other interests:

Use of National Forest System Lands – Is Minerals Part of the Mix?

Barry Burkhardt
USDA Forest Service Intermountain Region
Melody R. Holm
USDA Forest Service Rocky Mountain Region
March 10, 2003

The Forest Service has both a responsibility and an obligation to manage mineral resources in ways that meet the intent and direction of specific mineral laws and a multitude of other laws affecting management of the Nation's forests and grasslands. However, **Forest Service managers and staff often exhibit attitudes that indicate a belief that exploration and development of mineral resources are impacts to be avoided.** In fact, mineral resource development is a valid management responsibility as directed by law and policy, and is crucial to meeting the needs of the Nation and supporting a strong economy.

A history of statutory direction for mineral resource management on NFS lands attests to mineral resources being a significant component of the resources that the Forest Service manages. References to mineral resource management in key laws cited herein indicate that in most cases, **minerals need to be a primary consideration in multiple use management of NFS lands and should not be unduly constrained by management prescriptions for other resources.** The legal mandates for forest planning provide for limited discretion in managing mineral resource development. ***In short, mineral resources are to be managed on an equal – if not priority – basis with other resources.***

The following shall be recognized to the extent practicable in forest planning:

(f) The probable effect of renewable resource prescriptions and management direction on mineral resources and activities, including exploration and development.

The direction to recognize the "…effect of renewable resource…on mineral resources" has, in some cases, been misconstrued as "effect of minerals activities on other resources". Such interpretation illustrates the attitude that mineral development activity often is considered solely as an impact rather than valid and necessary resource management established in law and policy.

It should be noted that even though the above document pertains to Forest Service management of minerals, the problems and attitudes mentioned are found throughout all levels of government agencies, including within CDFG.

3. In 2005, the Oregon Dept. of Environmental Quality issued a new statewide five-year suction dredge mining general permit (700-PM). I request that the CDFG consider the following provisions for the new Oregon permit:

A. The new 700PM permit allows the movement of boulders by any method as long as the boulders are left between the normal high water marks.

B. The 700PM permit allows the building of dams as long as they are not a barrier to fish. (It was demonstrated that it was possible to build a dam behind a dredge in a small (20-30 ft. wide) creek that raised the water level over 3 feet without being a barrier to fish). Such dams are needed to climb rapids found in high mountain creeks.

C. The 700PM permit allows dredging up to ten (10) feet into a dry, unvegetated gravel bar along the water's edge. (The 700PM permit does not allow dredging into the bank of the stream). This is allowed as it was determined that the material found in dry unvegetated gravel bars found along the sides of streams and rivers is comprised of the identical materials found in the stream itself, as these areas are only exposed during low summer month water flows.

4. The whole tortured history of CDFG regulation of suction dredge mining that led to this current environmental review proves the ongoing wrongful direction by some within the Dept..

The roots to this current problem go back into the late 1990's, when Oregon based environmental organizations sued the Siskiyou NF for violating the 1994 Northwest Forest Plan (NWFP), in that the SNF did not require an approved Plan of Operations (POO) for suction dredge mining within riparian reserves (as required in "Minerals Management 1" (MM-1) of the NWFP). The SNF lost in magistrate court (it should be noted that similarly to the recent suit brought against the CDFG by the Karuk tribe, miners were not made aware of the suit), and rather than appeal the decision, attempted to enforce MM-1 on all miners. Miners ignored the SNF directive and continued to operate without an approved POO.

This led to another suit by the environmentalists (SREP vs. SNF, 2000)… but this time, miners were aware, and intervened to protect their interests (as in the Karuk suit). Because of the lengthy delays in the SREP v SNF suit, a few years ago, members of SREP convinced the Karuk tribe to file a similar suit against the Klamath NF, for the same reasons. The Karuks lost this suit. What followed was a suit by the Karuks against the CDFG, which would have been settled out of court had not the miners learned of the suit and intervened at the last minute.

It should here be noted that the mining community finds the actions of the CDFG in respect to the Karuk suit intolerable towards the miners. That the Dept. was willing to settle with the Karuks without even bothering to notify one single miner that the Dept. was selling their rights to mine down the river is criminal. This lack of notification on the part of the Dept. shows a totally biased view of mining by personnel within the CDFG. That the Dept. was willing to accept the lies and half-truths of the Karuks and then highly restrict mining shows the high level of corruption within the Dept..

When the Karuks & CDFG lost to the miners, the Dept. was given 18 months to perform an environmental review of their regulations. Instead of following the courts order, it is guessed that members of the Karuk tribe in collusion with personnel from the Dept. lobbied an Assemblywoman and got her to introduce AB 1032 in the last legislative session. Had AB 1032 not been vetoed, the Dept. would have been given free reign to trample the rights of miners for at least three (3) years.

All of this shows that the hands of the CDFG are unclean. It shows that at least a certain few within the Dept. are not capable of performing unbiased work, but instead freely interject their own personal religious environmental views as state policy. All this raises many doubts within the mining community as to the reliability of any study or data or findings presented by the Dept..

One also wonders why the Dept. gives so much credence to the Karuks. It is almost as if anything the Karuks say is taken by the Dept. as proven fact. This is especially troubling considering that the Karuks are not a recognized tribe, they have no treaty with the U.S. government, they have no reservation… and more importantly, they have no fishing rights and yet the Dept. turns a blind-eye on the netting of thousands of salmon annually by the Karuks. Why is that?

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CONCLUSIONS:

To date, and after over two-dozen studies on the effects of mining and suction dredge mining performed since at least 1938, not one study has shown a definitive significant adverse impact from suction dredge mining. Not one person can honestly point to a single situation where suction dredge mining has significantly harmed a fish. One of the latest studies even looked at the cumulative effects from forest-wide suction dredge operations (OSU-CER, 2003) and concluded that if there were any effects, they were below the standard threshold for measurement. How much more proof of *"insignificance"* does it take?

This same study even went so far as to recommend that due to the obviously insignificant (immeasurable) adverse impacts from suction dredging, it was not worth the public's money to even attempt to continue to try to measure the impacts (i.e.; the 2003 OSU-CER showed that the cumulative level of impact from all suction dredge operations within the SNF were below detection or measurement at the commonly used Type I error rate of 0.05… and that even if a more powerful study was performed, and managed to actually document measuring an impact or affect, the measure would automatically be so trivial (i.e.; *"...could not be detected at the commonly used Type I error rate of 0.05."*) that the measure or impact would be meaningless, inconsequential… and certainly not worth wasting hundreds of thousands of public dollars just to find a number.)

Furthermore, the OSU-CER even stated that it would take a large number of dredges operating in close proximity to each other for an extended length of time to "maybe" produce a measurable cumulative impact… which is something that never happens. (Yes, you might find several dredges or maybe even many working in the same area, but rarely do they all operate at the same time, and they are naturally spread far enough so as to not interfere with each other. Even the so-called "group outings" where you might find a large number of dredges close to each other only last for a few days, such as over a weekend, which is no where near long enough to cause a measurable impact.)

How long are government agencies going to continue to beat this dead horse? Over and over again studies have found no significant impact… and yet, to this day, government agencies continue to waste hundreds of thousands (if not millions) of dollars "studying this to death". The point is, no significant (or even measurable) harm has been shown to exist; meaning that even if there is a harm or adverse impact, it is so insignificant that it does not require any further mitigation or restriction on suction dredge mining.

The purpose of this review is to follow the court order. Due to the time wasted with AB 1032, the Dept. now has less than one year to complete the review. Because of the questionable actions by the Dept. in the recent past in regards to suction dredge mining, the Dept. is well advised that the mining community is fully prepared to question, and challenge if necessary, any proposed change in the regulations that would further restrict suction dredge mining in California. In the words of the U.S. Army Corps of Engineers:

> "This is an official recognition of what suction dredgers have long claimed; that below a certain size, **the effects of suction dredging are so small and so short-term as to not warrant the regulations being imposed** in many cases." (emphisis added)
>
> "The reports consistently find **no actual impact** of consequence on the environment, and so almost always fall back to the position that ***potential for impact*** exists. Studies to date **have not shown any actual effect** on the environment by suction dredging, except for those that are short-term and localized in nature." (emphisis added)
>
> "The regulatory agencies should be consistently and continually challenged by the dredging community to produce sound, scientific evidence that support their proposed regulations. **To regulate against a potential for harm, where none has been shown to exist, is unjustifiable and must be challenged.**" (emphisis added)
>
> Special Public Notice 94-10
> US Army Corps of Engineers, SPN 9410, Sept. 13, 1994

… and will be challenged.

I thank you for taking the time to consider these comments. Please put me/WMD on any mailing lists of interested parties and notify me of any opportunities to comment on any proposed actions by the Dept. in regards to suction dredge mining in California.

Respectfully submitted by;

Tom Kitchar – President
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Attached Exhibits:

I. Partial list of suction dredge studies

II. Comments on particular studies

EXHIBIT I: PARTIAL LIST OF SUCTION DREDGE STUDIES

1. Ames, 1995
2. Badali, 1988
3. Cooley, 1995
4. Gough, 1997
5. Griffith and Andrews, 1981
6. Harvey, 1980
7. Harvey, et al, 1982
8. Harvey, 1986
9. Hassler, et al, 1986
10. Huber and Blanchet, 1992
11. Lewis, 1962
12. McCleneghan and Johnson, 1983
13. Nelson et al, 1991
14. North, 1993
15. Oregon Dept. of Fish and Wildlife, 1980
16. Prussian et al, 1999
17. Shaw and Maga, 1942
18. Somer and Hassler, 1992
19. Stern, 1988
20. Thomas, 1985
21. US Army Corps of Engineers, (1994)
22. US Dept. of Agriculture, (1997)
23. USGS, 1998
24. Wanty et al, 1997
25. Ward, 1938
26. State of California, 1997
27. Harvey et al, 1995
28. Bailey, OSU, 2003

EXHIBIT II: COMMENTS ON PARTICULAR STUDIES

1. One of the few adverse impacts from suction dredge mining is the turbidity caused while the dredge is in operation. To many, especially if the stream is naturally clear, any amount of turbidity must be automatically bad – after-all, it "looks" bad. However, studies have shown just because turbidity "looks" bad doesn't necessarily mean that it is bad.

Logic alone should be enough to convince any open mind that if the levels and frequency of turbidity caused by suction dredges was actually harmful to fish or other aquatic life, then there would be no fish or aquatic life for the dredge to harm because there wouldn't be any fish or aquatic life due to the enormous amounts of turbidity (i.e.; in levels and duration) caused naturally every wet season. To claim that 20 or so NTUs for a few hours each day for a few days or even weeks might be harmful to fish is absurd when compared to the much higher levels during the wet seasons where streams might run at 50-100+ NTUs 24/7 for weeks… and this is not a highly localized event (like a suction dredge operation) but is instead system-wide… there is no place for the fish to escape the turbidity. And yet, fish live through all this.

Difference of opinion between miners and fish interests are nothing new. In Oregon, in response to complaints from fishing interests that the turbidity from hydraulic placer mining operations during the 1920's and early 1930's was destroying the fishing in the Rogue River (SW OR).

At the time, there were numerous large-scale hydraulic mines operating all up and down the Rogue River, up tributary streams, and on benches high above. It is said that the Rogue ran blood red to the coast due to the mines 60-80 miles upriver.

To settle the issue about turbidity, Oregon hired Dr. H.B. Ward to perform a study on the effects of turbidity on fish due to "hydraulic" placer mining on the Rogue River. It was stated in the forward that Dr. Ward was selected to do the study due to his high level of expertise and impeccable credentials… that no one could reasonably argue with his findings.

Below is a portion of the 1938 Ward study:

(25.) Author(s): Ward, H.B., 1938
Title: Placer Mining on the Rogue River, Oregon, in its Relation to the Fish and Fishing in that Stream.
Source: Oregon Dept. of Geology and Mineral Industries Bull. 10
Purpose: To determine the true facts as to… the effect of muddy (hydraulic) mine water on fish and fish life.
Method(s): Field observations, measurements of turbidity, etc., and tank studies of fish in turbid water.
Conclusion(s): **The essence of Dr. Ward's findings is that the placing of muddy water from placer operations in the Rogue River drainage is not inimical to fish and fish life.** The amount of colloidal fines in the Rogue River below placer mines is too small to adversely effect young fish eggs or fish food. Hydraulic placer mining debris is just more stream sand and gravel. It is typically chemically inert and does not take oxygen from the stream or add toxic agents to the water.

In Alaska, an exam of salmon in silty water due to mining found no damage to gills. **Young salmon suffered no ill effects from heavy sediment loads ten times that found at Agness from hydraulic mining.**

The tank tests at Reed College showed that **young fish live well up to thirty days in good water mixed with natural soil materials. The tests used sediment loads from two to three times as large as the extreme load contributed to the Rogue River by maximum conditions of hydraulic placer mining. The thin intermittent layer of placer mining gritty sediment (less than 1/8 inch) seen along Rogue River would not interfere with oxygen supply to fish eggs.**

Stream environments are typically dynamic and variable due to floods, natural inputs of sediment from landslides, and other sources, especially dams. ***Salmon and steelhead runs were established in past climates much rougher at times than today's, even with mining. That is, in the Ice Age precipitation, landslides and sediment loads were often much greater than today.***

The fish runs did not decline during the first and greater episode of mining. This, it's likely that the lesser mining of the 1930's is not the reason for the decline in fish runs at that time. The main difference between the two times are the dams, industrial wastes, and agricultural withdrawals of the later period. (emphisis added)

I must emphasis that Dr. Ward was examining the turbidity from unrestricted large-scale hydraulic mining. One of these mines, the "Old Channel" near Galice, OR., is the largest hydraulic mine pit in the world. During the spring and well into the summer months, dozens of hydraulic mines were operating along the Rogue River. The turbidity caused by suction dredging is nothing compared to the turbidity from the hydraulic mines on the Rogue River.

Dr. Ward spent a full year collecting water samples all up and down the river, from directly below the mine discharge all the way to the coast. He then mixed up a batch of muddy sediment loads "…from **two to three times** ***as large as the extreme load contributed to the Rogue River by maximum conditions of hydraulic placer mining***."

…And then placed fish in this muddy water for 30 days (and an equal number in clear water). All the fish in the muddy water survived unharmed, while several fish in the clear water died because the water was "clear" (i.e.; they could see and became scared and ran into the tank walls).

*"Young salmon suffered no ill effects from heavy sediment loads **ten times** that found at Agness from hydraulic mining."* (NOTE: Agness is on the Rogue River approximately immediately downstream of the majority of hydraulic mines which ran up the river for 30-50 miles or more.)
Dr. Ward concluded with the observation that one must consider the conditions present during the long evolution of these fish. 10,000 years ago this area was coming out of an Ice Age. Quoting Dr. Ward:

"Salmon and steelhead runs were established in past climates much rougher at times than today's, even with mining. That is, in the Ice Age precipitation, landslides and sediment loads were often much greater than today."

2. Below is a copy of two documents compiled by J. Cornell (B.S. Geology, U. of Kentucky, 1967; M.S. Geology, U. of Oregon, 1971; Engineering Technician, 1969-1973, seasonal, USDA Forest Service in western Oregon. Geologist, 1973 to 1994, (Retired, 1994) USDA Forest Service in western Oregon.):

A. *"Effects of Suction Dredging - A Summary of Dredging Publications"*, Draft of April 16, 2001; and

B. *"Bibliography of the Effects of Suction Dredging"*, Draft of April 15, 2001.

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Effects of Suction Dredging

A Summary of Dredging Publications

Written by Joe Cornell

Draft of April 16, 2001

This article is a summary of facts and conclusions found in about two dozen published articles about the effects of suction dredging. The purpose of this study is to present the known facts to the general public. It is expected that only facts and truths can lead to a rational end to the controversies over multiple use of the public lands.

The number of articles directly about effects of dredging are limited. Publications about fish habitat are legion. Most of the articles were garnered from the internet. A few had been around for a long time.

The total of 27 publications contained reports on some 13 separate studies of dredging effects and 7 reviews of accumulated findings and existing regulations. Three older articles discuss effects of sediment from historic mining or sediment in general. One of these, Dr. Wards ODOGAMI Bulletin #10, is also remarkable because the Oregon Dept. of Fish and Wildlife tried to recover and suppress this article some years back. Dr. Ward's conclusions apparently go against some current prevailing doctrines.

No publications were directly ignored, but there are too many related articles in published bibliographies to review them all. The initial deadline for this article was April 23 [2001], the end of the comment period on the local mineral withdrawals. That and the remarkable consistency of the reports permits a public disclosure of findings at this time.

A request to Siskiyou Regional Education Project (SREP) returned no real reference, either for or against. They were specifically asked for photocopies or bibliography of articles about the effects of suction dredging. Their packet contained only local newspaper clippings, some immoderate environmental magazines from Australia promoting "uncivil" acts, and a couple of slick products pushing the Siskiyou National Monument. This is even though they have been known to reference Harvey et al (1995) in public and in court (SREP vs. Rose, 1999).

Reference numbers are keyed to the related bibliography. All studies were by government agencies, universities, and professional organizations. All studies are certainly main-stream and reasonably scientific.

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Harvey et al (1995)

Harvey et al (1995) is a review of publications and potential problems, as well as recommendations for future management at the watershed level. This seems to be about the only article quoted by immoderate environmentalists. It does record every possible thing that could be used to suggest there might be significant harm. It doesn't come to any conclusion about whether or not dredging should be allowed.

After the over-environmentalistic excesses at the end of the Clinton administration, Harvey et al (1995) can also be viewed in a different light. The study was requested and funded by the Clinton Forest Service. Immoderate environmentalists, those who are trying to end multiple use, seem to think that this article gives them something that the earlier publications didn't. Therefore, this article appears to be a gift to the extremists whose interests were improperly pushed at the end of the Clinton era.

Summary of Conclusions

All statements from the articles are referenced. Your present reporter's comments are not.

Miner's Efforts

A majority of dredge operations studied did not work long periods or disturb large areas of the stream bed.[9] Of the 200 miners studied, only 57 spent more than 500 hours per season.[16] Thus, it appears that dredgers mostly worked afternoons in the summer, even before the setting of the dredging season between hatching and spawning. That's partly because it takes half a day to drive out there and mornings in the mountains can be cool, even in summer.

Water Quality: Turbidity, Sediment, Temperature

Water quality was impacted only during the actual operation of a suction dredge, which generally was only 2 to 4 hours of actual operation.[9] The primary effect of suction dredging was increased turbidity and total filterable solids downstream from the dredge from 30 to 150 meters.[14, 16] Naturally occurring minerals, such as copper and zinc sulfides, may be stirred up from stream bed sediments.[16] Dredge plumes, although visible, were probably of little direct consequence to fish and invertebrates.[19] Movement rate of suction dredging equals 0.7% of natural rates.[3]

Deposited sediment decreased exponentially downstream with distances from dredging.[20] Suspended sediment returned to ambient levels 30 to 60 meters downstream.[8, 20] In a few cases, sediment went further downstream than found in other studies because of steep stream gradient and fine sediment.[18] Maximum sediment concentrations were only a minute fraction of the great loads needed to impact fish feeding and respiration.[19]

Dredge mining had little, if any, impact on water temperature.[9]

Fish: Eggs, Young, and Adults

Mortality of fish eggs by dredging ranged by species from 29% to 100% and were generally greater than that of hatchery stock of the same age.[5] Presence of silt during nonerosion periods results in bottom deposition which is damaging to fry production.[17] This is why the dredging season was set between hatching and the next spawning.

There's no doubt that too much sediment is bad for fish eggs. However, dredging can improve permeability and velocity of water in gravel.[11] Intergravel permeability at one site increased, although not significantly; no changes in downstream permeability were noted.[20] A five-inch dredge could improve the intergravel environment for both fish eggs and benthos.[11] Weighing all factors, dredging can improve the gravel environment for both fish eggs and aquatic insects, especially if the operator mined uniformly in one direction, as opposed to a pocket and pile method.[11]

The amount of colloidal fines in the Rogue River below (historic) placer mines was too small to adversely effect young fish eggs or fish food.[25] It was found that the thin intermittent layer of gritty sediment (less than 1/8 inch) from (historic) placer mining did not interfere with oxygen supply to fish eggs.[25]

Placer mining debris is typically chemically inert and does not take oxygen from the stream or add toxic agents to the water.[25] Hydraulic placer mining debris was typically just stream sand and gravel that had been left behind as the streams meandered.[25]

The tank tests at Reed College showed that young fish live well up to thirty days in good water mixed with natural soil materials.[25] The tests used sediment loads from two to three times as large as the extreme load contributed to the Rogue River by maximum conditions of hydraulic placer mining.[25]

Of course, dredging should not be conducted while young salmonids reside in the gravel.[2] Because of the short mining season, fry emergence and rearing did not appear to be impacted to a high degree by dredging.[9] Juveniles used dredge holes, and their feeding, growth, and production did not seem to be impacted.[9] In contrast to Sigler et al (1984), young steelhead in Canyon Creek sought out dredge plums to feed on exposed invertebrates.[9, 10, 19]

Dr. Ward reviewed another study, which found young Alaskan salmon suffered no ill effects from heavy sediment loads ten times that found at Agness (from historic mining).[25]

Adult fish are not acutely affected or likely to be sucked into dredges.[7] Dace, suckers, steelhead, juvenile steelhead and salmon fed on exposed invertebrates, rested, and held in dredge holes.[9] Adult salmon have been observed to spend considerable time within yards of active dredgers and to hold in the dredged holes.[19] Feeding, growth, and production did not seem to be impacted at the current level of dredge activity.[9]

Salmonids spawned in the vicinity of the previous season's dredging, but, in one study, salmonids redds were not located in tailing piles.[9] The gravels dispersed by the high stream flows, which included dredge tailings, certainly composed a portion of the suitable spawning gravels each year.[9] Dredge tailings have been observed to provide good salmonid spawning ground due to the loose condition of the sand and gravel.[9] In some places, mining debris may provide the best or only habitat.[9, 10]

At the present level of activity, anadromous salmonids and habitat were only moderately affected.[25] Impacts on fish and habitat were moderate, seasonal, and site specific.[25] With restrictions, even large dredges have minimal impact on moderate to large-sized waterways.[2] The essence of Dr. Ward's findings is that the placing of muddy water from (historic) placer mining operations in the Rogue River drainage is not inimical to fish and fish life.[25] Sediment from dredging is much less than that of historic mining.

Invertebrates

The abundances of several species of aquatic insects and riffle sculpin were adversely affected, but only at and immediately downstream from the dredge site.[8] Due to differences between species… the lack of significant differences between control and dredged stations observed for some taxa is not surprising.[6] The dredging did not significantly reduce the number of invertebrates.(9) Only 7.4% of benthic insects died from going through a dredge.[11] The effects of dredging… were not severe enough to cause differences in mean numbers of invertebrates or in diversity indices.[18]

Effects on the benthic community are highly localized.[6, 8] All settled back to the bottom within 40 feet of the dredge.[11] Impacts on aquatic insect abundance were limited to the area dredged.[20] Most of the recolonization of benthic invertebrates was completed after 38 days.[5]

Impacts of dredging to invertebrates were minimal.[25] Effects of dredging on insects and habitat were minor compared to bed-load movement due to large stream flows during storms and from snowmelt.[18]

Several studies all reported that invertebrates recolonized dredge sites within 30 to 45 days.[5, 14] Substantial recovery of invertebrates occurred rather rapidly, and disturbance occurred only close downstream from the dredge.[16] The 45 day recolonization experiment indicates not only a rapid recovery but also a rapid recovery in the total numberof insects over time.[6] Almost all taxa found on cobble substrates take part in the recolonization of sand and gravel areas.[6] Dredging can improve the gravel environment for aquatic insects, as well as fish eggs.[11]

Stream Channel and Banks

Dredging or highbanking of bank materials should be prohibited as this may create turbidity and stream bank instability, unless there is a holding pond.[2] Stream-side vegetation should not be removed.[2] Only a few dredgers undercut banks, thus channelizing the stream, removing vegetation and accelerating bank erosion.[25] Camping in the riparian zone caused some damage.[12] Survey suggested that mining of the stream banks caused more damage than dredging.[12] Moving of large boulders alters the stream bed.[12] Boulders and logs should be replaced, if removed, for fish habitat.[2] Few miners caused adverse impacts.[12]

Changes to stream bed were major but localized, such as excavation to bedrock in a hole.[18] Disturbed stream reaches were only a few tens of meters.[8, 14] Stream bed alterations are probably more long-lived on streams with controlled flows than on those with flushing flows.[8, 19] Where flushing flows occur, substrate changes are gone in from one month to one to three years.[8, 16, 17] Holes and piles in the center of the stream are usually gone after one winter.[19] Piles along the banks may linger.[19] This is similar to piles left by historic miners.[19] Pool habitat created at the dredge site may compensate for pool loss immediately downstream.[20]

Natural Variation

Fish and invertebrates displayed considerable adaptability to dredging, probably because the stream naturally has substantial seasonal and annual fluctuations.[6] All measurements of dredge effects turned out to be within the natural variation of the local environment.[24] Stream environments are typically dynamic and variable due to floods, natural inputs of sediment from landslides, and other sources, especially dams.[25] Salmon and steelhead runs were established in past climates much rougher at times than today's, even with mining.[25] That is, in the Ice Age precipitation, landslides, and sediment loads were often much greater than today.[25]

The fish runs did not decline during the first and greater episode of mining.[25] Thus, it's likely that the lesser mining of the 1930's is not the reason for the decline in fish runs at that time.[25] The main difference between the two times are the dams, industrial wastes, and agricultural withdrawals of the later period.[25]

In the mid-seventies, Willard Street, local historian and author, told your present reporter that the end of the great fish runs of the Rogue River had coincided with the beginning of the agricultural withdrawals, not with mining. In the early 1990's, agricultural withdrawals are oversubscribed and that inforcement is poor, at best.

Cumulative Effects

Cumulative effects of suction dredging have probably not been fully determined, but there is considerable evidence of only localized and temporary effects from multiple dredges.[6, 7, 9, 12] Studied were the effects of six dredges in a 2 km stretch, [6] 40 dredges on an 11 km stretch,[7] up to 24 dredges on 15 km,[9] and 270 dredges in a part of the

Sierra Nevada.[12] Three years of monitoring on the Chugach National Forest found no noticeable impact to water quality from dredges of 6 inches or less.[10]

"If there were a cumulative effect of dredging, an increasing number of taxa should have declined in abundance after June at downstream stations."[8] No such decline appeared in the data.[8] There is a need for additional study of cumulative effects and other items.[9, 16, 26] However, no authors declared that effects were serious enough to warrant a change of law and end of dredging rights.

Conclusions about the Conclusions

Studies to date have not shown any actual effect on the environment by suction dredging, except for those that are short-term and localized in nature.[14, 21] Effects were significant, but localized.[8] The size of the impact zone varies.[8] A six-inch dredge is appropriate where substrate gravel size is large, but a large aperture may be disruptive in a small channel.[11] Suction dredging effects could be short-lived on streams where high seasonal flows occur.[6, 7, 9] The greatest potential for damage is at low flow.[15]

Even though cumulative effects and some other questions have not been thoroughly studied, there has been nothing to date to substantiate closure of the small-scale mining operations.[23] Even with the absence of data, environmental groups were active to close down mining citing unsubstantiated possible discharge violations.[23] The effects of suction dredging would appear to be less than significant and not deleterious to fish.[26]

Regulations and Future Management

Current regulations of size and season appear adequate to protect habitat, with some future adjustments.[18, 25, 27] Suction dredges of larger than 4 inches generally have more than de minimis effects on the aquatic environment and therefore require authorization.[21] The DEI by the State of California stated that, "based on best available data, it is anticipated that the regulations, as amended by the proposed project, will protect fish and other related aquatic dependent resources and will not cause significant effects to the environment or deleterious effects to fish."[26]

Harvey et al (1995), at the request of the Forest Service, reviewed existing studies and recommended analyzing dredging effects by watershed.[27] California, Idaho, Washington, and Oregon manage dredging with the conclusion that, with mitigations, effects are insignificant.[27]

Present Researcher's Conclusions

As in most aspects of life, risk of negative effects cannot be reduced to nothing. However, consistency of the findings indicate that doesn't seem to be necessary. It would seem that existing regulations, monitoring and periodic upgrade of regulations would be

enough to prevent significant negative effects. Just in case the price of gold should triple, procedures should be put in place for limiting the number of operations in heavily dredged reaches. This should be based on some scientific study or determination. Of course, numerous operations only occur in the very few areas where there's still some gold to be found.

The Corps of Engineers eloquently summarizes the current situation:

"Four-inch and smaller dredges have inconsequential effects on aquatic resources.[21] This is an official recognition of what suction dredgers have long claimed; that below a certain size, the effects of suction dredging are so small and so short-term as to not warrant the regulations being imposed in many cases."[21]

"The U.S. Environmental Protection Agency (EPA), has ignored this concept, although numerous studies, including the EPA's own 1999 study of suction dredging, repeatedly and consistently support the Corps finding de minimis effects.[21] The reports consistently find no actual impact of consequence on the environment, and so almost always fall back to the position that potential for impact exists."[21]

"The regulatory agencies should be consistently and continually challenged by the dredging community to produce sound, scientific evidence that support their proposed regulations.[21] To regulate against a potential for harm, where none has been shown to exist, is unjustifiable and must be challenged."[21]

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28. Ames, 1995
29. Badali, 1988
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32. Griffith and Andrews, 1981
33. Harvey, 1980
34. Harvey, et al, 1982
35. Harvey, 1986
36. Hassler, et al, 1986
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41. North, 1993
42. Oregon Dept. of Fish and Wildlife, 1980

43. Prussian et al, 1999
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48. US Army Corps of Engineers, (1994)
49. US Dept. of Agriculture, (1997)
50. USGS, 1998
51. Wanty et al, 1997
52. Ward, 1938
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54. Harvey et al, 1995

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BIBLIOGRAPHY
OF THE
EFFECTS OF SUCTION DREDGING

Draft of April 15, 2001

By: Josiah Cornell

Actual studies of the effects of suction dredging are few. Articles about the general effects of sediment and other disturbances to streams are numerous, and they may be found in the bibliographies of articles included here.

(1.) Author(s): Ames, Frank, compiler, 1995
Title: Excerpts From Suction Dredge Studies
Source: Published by the Washington Alliance of Miners and Prospectors
Purpose: To compile information about dredging effects on entrainment, feed and fish, flushing flows, sediment, effects of silt on fish, effects on spawning, changes in the stream bed, temperature, turbidity, and water quality.
Method(s): Excerpts from published articles
Conclusion(s): Conclusions are recorded under the names of the excerpted authors.
Notes: This is a compilation of excerpts from published articles about effects of dredging.

(2.) Author(s): Badali, P.J., 1988
Title: Effects of Suction Dredging on Fish and Benthic Invertebrates
Source: Western Mining Council and State of Idaho Dept. of Water Resources, Recreational Dredging Seminar
Purpose: To gather together available facts from scientific publications
Method(s): Summary of articles and conclusions
Conclusion(s): Dredging should not be conducted while young salmonids reside in the gravel. Dredging or "highbanking" of bank materials should be prohibited as this may create turbidity and stream bank instability, unless there is a holding pond. Stream side vegetation should not be removed. Boulders and logs should be replaced, if removed, for fish habitat. **With these restrictions, even large dredges have minimal impact on moderate to large-sized waterways.** (emphasis added)
Notes: Summarized articles are included under the authors' names

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(3.) Author(s): Michael F. Cooley, Oct. 16, 1995
Title: A comparison of stream materials moved by mining suction dredge operations to the natural sediment rates
Source: USDA Siskiyou National Forest
Purpose: To compare amount of material moved by dredging versus natural rates
Method(s): Compared rates from several studies
Conclusion(s): **Sediment rates from suction dredging are only a minor fraction of natural rates in mountainous terrain.** (emphasis added)

(4.) Author(s): Gough, L., et al, 1997
Title: Placer Gold Mining in Alaska-Cooperative Studies on the Effect of Suction Dredge Operations on the Forty-mile River.
Source: USGS Fact Sheet 155-97, October 1997

Purpose: To evaluate possible negative effects of dredging, such as increasing the load of toxic metals and turbidity and decreasing the number and diversity of aquatic biota.

Method(s): Sampling of metals in rocks and stream bedloads of the watershed; sampling of turbidity and stream chemistry below dredge operations.

Conclusion(s): Published in Wanty et al, 1997

Notes: A description of the metals study; results were reported in Wanty et al, 1997.

(5.) Author(s): Griffith, J.S., and Andrews, D.A., 1981

Title: Effects of a small suction dredge on the fishes and aquatic invertebrates in Idaho streams.

Source: North American Journal of Fisheries Management 1:21-28

Purpose: To evaluate some of the effects on aquatic organisms from use of small suction dredges.

Method(s): A small dredge was operated on four small Idaho streams and mortality and recolonization was assessed. Dredging was deliberately done during emergence of fry.

Conclusion(s): Mortality of fish eggs ranged by species from 29% to 100% and were generally greater than that of hatchery stock of the same age. Most of the recolonization of benthic vertebrates was completed after 38 days. Survival of entrained vertebrates that settled on the surface was not assessed.

(6.) Author(s): Harvey, B.C., 1980

Title: Effects of Suction Dredge Mining on Fish and Invertebrates in California Foothill Streams

Source: M.S. University of California at Davis

Purpose: to determine the impact of small (8-inch and less) suction dredges on fish and invertebrates in foothill streams

Method(s): field study with in-stream sampling of control areas and dredge sites. The effect of a number of dredges in a limited area of stream was investigated, six dredges in a 2km section of stream.

Conclusion(s): The overall effect of dredging on the benthic community appears highly localized. Due to differences between species… the lack of significant differences between control and dredged stations observed for some taxa is not surprising. Fish and invertebrates displayed considerable adaptability to dredging, probably because the stream naturally has substantial seasonal and annual fluctuations. The 45 day recolonization experiment indicates not only a rapid recovery in the total number of insects over time, but also that almost all taxa found on cobble substrates take part in the recolonization of sand and gravel areas. Flushing winter flows can greatly reduce the long term impact of dredging.

(7.) Author(s): Harvey, B.C., McCleneghan, K., Linn, J.D., Langley, C.L., 1982

Title: Some Physical and Biological Effects of Suction Dredge Mining

Source: California Dept. of Fish and Game Lab Report No. 82-3

Purpose: to examine the effects of dredging on turbidity, settleable solids, and sedimentation rate, aquatic insects, and fish

Method(s): Field surveys

Conclusion(s): Effects were significant, but localized. The abundance of several species of aquatic insects and rifle sculpin were adversely affected, and the size of the impact zone varies. No additive effects were detected on the Yuba River from 40 active dredges on an 11 km stretch. The area most impacted was from the dredge to about 30 meters downstream, for most turbidity and settleable solids. Sedimentation rates fell back to ambient after 60 meters. Stream bed alterations are probably more long-lived on streams with controlled flows than

on those with flushing flows. Effects on the benthic community are highly localized. Where flushing flows occur, substrate changes are gone in one year.

(8.) Author(s): Harvey, Bret C., 1986

Title: Effects of suction gold dredging on fish and invertebrates in two California streams

Source: North American Journal of Fisheries Management, 6:401-409, 1986

Purpose:

Method(s):

Conclusion(s): **Adult fish are not acutely affected or likely to be sucked into dredges.** Benthic communities were significantly altered, but alterations were localized and associated with changes in degree of embeddedness of cobbles and boulders. Suction dredging effects could be short-lived on streams where high seasonal flows occur. Six small dredges (<6in.) on a 2 km stretch had no additive effects. ***"If there were a cumulative effect of dredging, an increasing number of taxa should have declined in abundance after June at downstream stations."*** **No such decline appeared in the data.** *"Fish and invertebrates apparently were not highly sensitive to dredging in general, probably because the streams studied naturally have substantial seasonal and annual fluctuations in flow, turbidity, and substrate."* Substrate changes were gone after one year. (emphisis added)

Notes: From the compilations

(9.) Author(s): Hassler, T.J., Somer, W.L., Stern, G.R., 1986

Title: Impacts of Suction Dredge Mining on Anadramous Fish, Invertebrates and Habitat in Canyon Creek, California

Source: California Cooperative Fishery Research Unit, U.S. Fish and Wildlife Service, Humboldt State University, Cooperative Agreement No. 14-16-0009-1547, Work Order No. 2, Final Report

Purpose: To evaluate impacts of suction dredge mining on fish, invertebrates, and habitat.

Method(s): Similar to McCleneghan and Johnson (1983), interviews and subjective site observations.

Conclusion(s): Studied 24 3" to 6" dredges along 15 km stretch. "Dredges on Canyon Creek seemed to be spaced far enough apart, and operated at low enough levels during the study not to result in cumulative effects. Most visible effects were gone after one year. At the present level of activity, anadromous salmonids and habitat were only moderately affected. Fish congregate and feed where dredging displaces and exposes benthic invertebrates. The dredging did not significantly reduce the number of invertebrates. Steelhead fed opportunistically. Impacts of dredging on invertebrates were minimal. Salmonids spawned in the vicinity of the previous season's dredging, but salmonid redds were not located in the tailing piles. The gravels dispersed by the high stream flows, which included dredge tailings, certainly composed a portion of the suitable spawning gravels each year. Because of the short mining season, fry emergence and rearing did not appear to be impacted to a high degree by dredging. Juveniles used dredge holes, and their feeding growth, and production did not seem to be impacted. A majority of dredge operations studied did not work long periods or disturb large areas of the streambed. Dace, suckers, and juvenile steelhead and salmon fed, rested, and held in dredge holes. Dredge mining had little, if any, impact on water temperature. Water quality was impacted only during the actual operation of a suction dredge, which was generally only 2 to 4 hours of actual operation. Those few dredgers who undercut banks channelized the stream, removed vegetation and accelerated bank erosion. Impacts on fish and habitat

were moderate, seasonal, and site specific. **Current regulations of size and season appear adequate to protect habitat.** Three referenced studies had found that salmonids spawned in tailings. (emphisis added)

(10.) Author(s): Huber, C., and Blanchet, D., 1992

Title: Water quality cummulative effects of placer mining on the Chugach National Forest, Kenai Peninsula, 1988-1990

Source: U.S. Forest Service, Chugach National Forest, Alaska Region

Purpose:

Method(s):

Conclusion(s): Three years of monitoring on the Chugach National Forest found no noticeable impact to water quality from dredges of 6 inches or less.

(11.) Author(s): Lewis, R., 1962

Title: Results of Gold Suction Dredge Investigation, Memorandum of September 17

Source: California Dept. of Fish and Game, Sacramento, Ca.

Purpose: Part of a study of suction dredge effects.

Merthod(s): A rented 5-inch dredge was operated

Conclusion(s): Only 7.4% of benthic insects died from going through a dredge, although it varied by order. All settled back to the bottom within 40 feet of the dredge. Fish appeared and began to feed as soon as dredging started. The turbidity plume was 200 feet long. A five-inch dredge could improve the intergravel environment for both fish eggs and benthos. A six inch dredge is appropriate where substrate gravel size is large, but a large aperture may be disruptive in a small channel. Dredging improved permeability and velocity of water in gravel. **Weighing all factors, dredging can improve the gravel environment for both fish eggs and aquatic insects, especially if the operator mined uniformly in one direction as opposed to a pocket and pile method.** (emphisis added)

(12.) Author(s): McCleneghan, K., and Johnson, R.E., 1983

Title: Suction Dredge Gold Mining in the Mother Lode Region of California, Environmental Services Branch, Administrative Report 83-1

Source: State of California Dept. of Fish and Game

Purpose: To evaluate some effects of suction dredge mining

Method(s): Field surveys included 200 interviews with miners, over 200 sites were assessed, observations at dredge sites, and subjective determinations of damage estimates

Conclusion(s): Study of the impacts of 270 dredges with up to 10 inch intake. Of the 200 miners, only 57 spent more than 500 hours per season, the average was 235 hours per season. Few miners caused adverse impacts. Damage that does occur is of concern because of a high number of dredgers in the state. Some damage was from the few miners camping in the riparian zone. Survey suggested that mining of the stream banks caused more damage than dredging. Moving of large boulders alters the stream bed. Types of damage were not described or quantified. Because of the number of miners in California at the time, there was a need to fully examine the effects of dredging.

(13.) Author(s): Nelson, R.L., McHenry, M.L., and Platts, W.S., 1991

Title: Influences of Forest and Rangeland Management on Salmonid Fishes and Their Habitats

Source: American Fisheries Society Special Publication 19:425, 1991

Purpose:

Method(s):

Conclusion(s): General, not related to suction dredging. Sediment accrues in streams naturally and is not a normal component of salmonid habitat. Major disruption of the system occurs when placer sediment delivery substantially exceeds the natural level and the amounts of sediment deposited and the turbidity becomes excessive, as from hydraulic mining.

(14.) Author(s): North, Phillip A., 1993

Title: A Review of the Regulations and Literature Regarding the Environmental Impacts of Suction Gold Dredges

Source: U.S. Environmental Protection Agency

Purpose:

Method(s):

Conclusion(s): **Adult fish are not acutely effected or likely to be sucked into suction dredges.** Several studies all reported that invertebrates recolonized dredge sites within 30 to 45 days. Disturbed stream reaches were only a few tens of meters. For four studies reviewed, **impacts are local and of short duration** when certain limitations are placed on dredge activity. Water quality is impacted for a distance downstream range of a few meters to 30 meters. (emphasis added)

Notes: From Ames excerpts

(15.) Author(s): Oregon Dept. of Fish and Wildlife, 1980

Title: Recreational Mining Can Be Compatible with Other Resources

Source: Oregon Dept. of Fish and Wildlife, 1976 and revised 1980

Purpose: To educate dredgers to reduce negative effects

Method(s): A three page summary document, not a study in itself.

Conclusion(s): Very little turbidity results from normal use of smaller suction dredges (4-inch or less) in stream gravels. The majority of heavy suspended solids settles out within a few yards of the sluice box. Severe turbidity and resulting siltation occur when bank materials are washed into the stream. Harassment of adult fish and disturbance of eggs and fry occur when dredging takes place during the critical times of spawning and hatching. The greatest potential for damage is at low flow.

(16.) Author(s): Prussian, A.M., Royer, T.V., and Minshall, G.W., 1999

Title: Impact of suction dredging on water quality, benthic habitat, and biota in the Fortymile River, Ressurrection Creek, and Chatanika River, Alaska

Source: Dept. of Biological Sciences, Idaho State Univ., EPA Pocatello, Idaho

Purpose: To study impacts of dredging on water quality, benthic habitat, and biota

Method(s): Background sampling and sampling at dredge sites

Conclusion(s): The primary effect of suction dredging was increased turbidity, total filterable solids, and copper and zinc concentrations (from stream bed sediments) downstream from the dredge for about 150 meters. **These were larger dredges, 8 and 10 inches.** High flows redistribute dredge tailings after 1 to 3 years. Substantial recovery of invertebrates rather rapidly, and disturbance occurred only close downstream from the dredge. It appears that **impacts of small-scale dredging are primarily contained within the dredged area and immediately downstream and persist about one month after the mining season.** More study is needed to fully quantify dredging effects. (emphasis added)

(17.) Author(s): Shaw, P.A., and Maga, J.A., 1942
Title: The Effect of Mining Silt on Yield of Fry from Salmon Spawning Beds
Source: California Dept. of Fish and Game
Purpose: To show the extent of damage from mine tailings
Method(s): Compared yield of fry from salmon eggs from similar nests in areas with and without mining silt, using hatchery troughs. Silt and mud from mining holding ponds were mixed with water and introduced to some nests
Conclusion(s): Presence of silt during nonerosion periods results in bottom deposition which is damaging to fry production.
Notes: About historic mining, not dredging.

Author(s): Sigler, J. W., Bjornn, T.C., Everest, F.H., 1984
Title: Effects of chronic turbidity on density and growth of steelhead and coho salmon.
Source: Transactions of the American Fisheries Society 113:142-150
Purpose:
Method(s):
Conclusion(s):

(18.) Author(s): Somer, W.L., and Hassler, T.J., 1992
Title: Effects of Suction-Dredge Gold Mining on Benthic Invertebrates in a Northern California Stream.
Source: Pub. In North American Journal of Fisheries Management 12:244-252; authors are U.S. Fish and Wildlife Service
Purpose: To investigate the effects on benthic invertebrates and habitat of two suction dredges
Method(s): use of artificial substrate samplers and drift samplers above and below dredges
Conclusion(s): **Adult fish are not acutely affected or likely to be sucked into dredges.** Young salmon and steelhead fed on insects dislodged by dredging. Changes to stream bed were major but localized, such as excavation to bedrock in a hole. Effects of dredging on insects varied with taxa and were site-specific. **Effects were not severe enough to cause differences** in mean numbers of invertebrates or in diversity indices. **Habitat changes were minor** compared to bed-load movement due to large stream flows during storms and from snowmelt that removed holes and flushed sediment from study site. **California regulations for dredge aperture size and season appeared adequate to protect fish and habitat at the level of dredging observed.** Cumulative effects of dredging, especially during low flow years, need to be assessed. Sediment went further downstream than other studies because of the steep stream gradient and fine sediment. (emphisis added)

(19.) Author(s): Stern, Gary R., 1988
Title: Effects of suction dredge mining on anadramous salmonid habitat in Canyon Creek, Trinity County, California
Source: M.S. thesis, Humboldt State University
Purpose:
Method(s):
Conclusion(s): Most streams with mobile beds and good annual flushing flows should be able to remove the instream pocket and pile creations of small suction dredges, although some regulated streams with controlled flows may not. Holes and piles in the center of the stream are usually gone after one winter. Piles along the bank may linger. This is similar to piles left by historic miners. In several studies, adult salmon have been observed to spend considerable time within yards of active dredges and to hold in dredged holes. **Dredge plumes,**

although visible, were probably of little direct consequence to fish and invertebrates. Maximum sediment concentrations were only a minute fraction of the great loads needed to impact fish feeding and respiration. In contrast to Sigler et al, young steelhead in Canyon Creek sought out dredge plumes to feed on exposed invertebrates. (emphisis added)

Notes: From Ames excerpts

(20.) Author(s): Thomas, V.G., 1985

Title: Experimentally Determined Impacts of a Small Suction Gold Dredge on a Montana Stream

Source: North American Journal of Fisheries Management

Purpose: To determine dredging effects on aquatic insects and bottom habitat.

Method(s): A small suction dredge was operated with before and after observations, not for gold recovery.

Conclusion(s): Suspended sediment returned to ambient levels 30.5 meters downstream. Deposited sediment decreased exponentially downstream with distance from dredging. Impacts on aquatic insect abundance were limited to the area dredged. Pool habitat created at the dredge site may compensate for pool loss immediately downstream. Intergravel permeability at the site increased, although not significantly; no downstream changes in permeability were noted. **This study has found no violations to date to substantiate closure of the small-scale mining operations. Even with the absence of data, environmental groups were active to close down mining on the river citing unsubstantiated possible discharge violations.** (emphisis added)

(21.) Author(s): US Army Corps of Engineers

Title: Special Public Notice 94-10

Source: US Army Corps of Engineers, SPN 9410, Sept. 13, 1994

Purpose: To show the finding of de minimis (inconsequential) effects on aquatic resources for 4-inch and less suction dredges and hand mining.

Method(s): results of field studies and court decisions

Conclusion(s): **Four-inch and smaller dredges have inconsequential effects on aquatic resources.** ***"This is an official recognition of what suction dredgers have long claimed; that below a certain size, the effects of suction dredging are so small and so short-term as to not warrant the regulations being imposed in many cases. The U.S. Environmental Protection Agency (EPA), has ignored this concept, although numerous studies, including the EPA's own 1999 study of suction dredging, repeatedly and consistently support the Corps finding de minimis effects. The reports consistently find no actual impact of consequence on the environment, and so almost always fall back to the position that potential for impact exists. Studies to date have not shown any actual effect on the environment by suction dredging, except for those that are short-term and localized in nature."*** Suction dredges of larger than 4 inches generally have more than de minimis effects on the aquatic environment and therefore requires authorization. (emphisis added)

"The regulatory agencies should be consistently and continually challenged by the dredging community to produce sound, scientific evidence that support their proposed regulations. To regulate against a potential for harm, where none has been shown to exist, is unjustifiable and must be challenged." (emphisis added)

(22.) Author(s): US Dept. of Agriculture, 1997

Title: Suction Dredging in the National Forests
Source: US Dept. of Agriculture, 1997
Purpose: To make sure that dredging is done in a manner consistent with current law and good natural resource management
Method(s): an educational handout to the public
Conclusion(s): **When done properly, legal dredging must be allowed by law and effects are acceptable** (emphisis added)

(23.) Author(s): USGS, 1998
Title: Certain mining operations have not hurt pristine Alaskan River
Source: News Release, U.S. Dept. of the Interior, U.S. Geological Survey, USGS Fact Sheet-0155-97, Oct. 27, 1998
Purpose:
Method(s):
Conclusion(s):
Notes: See Wanty et al, 1997

(24.) Author(s): Wanty, R.B., Wang, B., and Vohden, J., 1997
Title: Studies of suction dredge gold-placer mining operations along the Fortymile River, eastern Alaska
Source: USGS Fact Sheet 154-97
Purpose: To evaluate possible negative effects of dredging, such as increasing the load of toxic metals and turbidity and decreasing the number and diversity of aquatic biota
Method(s): Sampling of metals in rocks and stream bedloads of the watershed; sampling of turbidity and stream chemistry below dredge operations
Conclusion(s): **All measurements of dredge effects on turbidity and geochemistry turned out to be within the natural variation of the local environment.** See Prussian et al (1999) for other results. (emphisis added)

(25.) Author(s): Ward, H.B., 1938
Title: Placer Mining on the Rogue River, Oregon, in its Relation to the Fish and Fishing in that Stream.
Source: Oregon Dept. of Geology and Mineral Industries Bull. 10
Purpose: To determine the true facts as to… the effect of muddy (hydraulic) mine water on fish and fish life.
Method(s): Field observations, measurements of turbidity, etc., and tank studies of fish in turbid water.
Conclusion(s): **The essence of Dr. Ward's findings is that the placing of muddy water from placer operations in the Rogue River drainage is not inimical to fish and fish life.** The amount of colloidal fines in the Rogue River below placer mines is too small to adversely effect young fish eggs or fish food. Hydraulic placer mining debris is just more stream sand and gravel. It is typically chemically inert and does not take oxygen from the stream or add toxic agents to the water.

In Alaska, an exam of salmon in silty water due to mining found no damage to gills. **Young salmon suffered no ill effects from heavy sediment loads ten times that found at Agness from hydraulic mining.**

The tank tests at Reed College showed that **young fish live well up to thirty days in good water mixed with natural soil materials. The tests used sediment loads from two to three times as large as the extreme load contributed to the Rogue River by maximum conditions of**

hydraulic placer mining. The thin intermittent layer of placer mining gritty sediment (less than 1/8 inch) seen along Rogue River would not interfere with oxygen supply to fish eggs.

Stream environments are typically dynamic and variable due to floods, natural inputs of sediment from landslides, and other sources, especially dams. Salmon and steelhead runs were established in past climates much rougher at times than today's, even with mining. That is, in the Ice Age precipitation, landslides and sediment loads were often much greater than today.

The fish runs did not decline during the first and greater episode of mining. This, it's likely that the lesser mining of the 1930's is not the reason for the decline in fish runs at that time. The main difference between the two times are the dams, industrial wastes, and agricultural withdrawals of the later period. (emphisis added)

(26.) Author(s): State of California Department of Fish and Game

Title: Draft Environmental Impact Report Adoption of Amended Regulations for Suction Dredge Mining, 1997

Source:

Purpose: To determine whether or not to amend the current state regulations governing suction dredging in California.

Method(s): EIS

Conclusion(s): "Based on best available date, it is anticipated that the regulations, as amended by the proposed project, will protect fish and other related aquatic dependent resources and will not cause significant effects to the environment or deleterious effects to fish." **The effects of suction dredging would appear to be less than significant and not deleterious to fish.** There is a need for additional study of CE and other items. (emphisis added)

(27.) Author(s): Harvey, B.C., Lisle, T.E., Vallier, T., and Fredley, D.C., September 29, 1995

Title: Effects of Suction Dredging on Streams: A Review and Evaluation Strategy

Source: Pursuant to a Charter by USFS, April 18, 1995

Purpose: to review conclusions of existing publications about effects and provide recommendations for future management processes.

Method(s): Review of existing publications

Conclusion(s): More study needs to be done, and management of dredging needs to be approached from a watershed (cumulative effects) level.

ADDITIONAL REFERENCES NOT YET ADDED

Author(s): Anonymous (1996)

Title: Effects of recreational Suction Dredge Operations on Fish and Fish Habitat: A literature Review in Association with a Petition of the Idaho Gold Prospectors Association to the Idaho Land Board.

Source: Konopacky Environmental, Meridian, Idaho, Proj. No. 064-0

Purpose:

Method(s):

Conclusion(s):

Author(s): Gurtz, M.E., and Wallace, J.B., 1984

Title: Substrate-mediated response of stream invertebrates to disturbance

Source: Ecology 65:1556-1569

Purpose:

Method(s):
Conclusion(s):

Author(s): Meehan, W.R., 1971
Title: Effects of gravel cleaning on bottom organisms in three southeast Alaska Streams.
Source: Progressive Fish-Culturist 33:107-111
Purpose:
Method(s):
Conclusion(s):

Author(s): Orcutt et asl (1968)
Title:
Source:
Purpose:
Method(s):
Conclusion(s):

Author(s): Prokopovich, N.P., and Nitzberg, K.A., 1982
Title: Placer mining and Salmon Spawning in American River Basin, California
Source: Bulletin of the Association of Engineering Geologists 19:67-76
Purpose:
Method(s):
Conclusion(s):

Author(s): Sigler, K.V., et l, 1984
Title: Effects of chronic turbidity on density and growth of steelhead and coho salmon.
Source: Trans. M. Fish Soc. 113:142-150
Purpose:
Method(s):
Conclusion(s):

Subject: Re: Comments regarding SEIR and Proposed Regulations for suction dredge
Date: Monday, May 9, 2011 11:16:20 PM PT
From: Steve Kleszyk
To: dfgsuctiondredge@dfg.ca.gov

Mark Her are my comments in a non attached version

Mark Stopher

California Department of Fish and Game

601 Locust Street

Redding, CA 96001 dfgsuctiondredge@dfg.cagov

May 9th, 2011

RE: Comments regarding SEIR and Proposed Regulations for suction dredge mining in California

Dear Sir:

After reading your results and findings of the court ordered EIR I have *grave* concerns over the draft suction dredging regulations - (in no order) the 1994 EIR & current EIR , hose size reductions, Winching, Intake Screen size , Permit restrictions, Frog concerns & additional closures

1994 EIR & current EIR results - Beginning with the very first paragraph of Section 228 of the DFG proposed regulations related to suction dredging, it states in part, ***"…the Department finds that suction dredging…will not be deleterious to fish."*** (emphasis added). Your (Mark Stopher) own comments last week on the radio ……*"the 1994 regulations did a pretty good job"* summarized it best to me. There was no difference in findings between the 1994 EIR and the new one. Your draft regulations are clearly beyond excessive by the prudent man, direction of the court, California and federal law. The draft regulations are clearly an attempt to prohibit an authorized action which the California Coastal Commission vs. Granite Rock clearly determined you cannot. With no difference in findings and your referenced statement "…the Department finds that suction dredging…will not be deleterious to fish reinstate the 1994 regulations in full.

Hose size reductions – When the 1994 regulations are compared to the current draft there is no legal or scientific reason to justify the change. This size nozzle is not suitable for commercial mineral extraction. It is used for sampling. The effect of this restriction is to categorically prohibit commercial suction dredge mining in California as it renders commercial extraction non-viable. Commercial miners would be unable to move enough material to cover the costs of permits and inputs into the enterprise. This is an unreasonable regulation of industry. The regulation was never intended to destroy an industry and again invokes the precedent set in Commission vs. Granite Rock. Please see my additional comments. Remove this section and return the hose sizes to that *prior* to the 1994 restrictions.

Winching – This is an attempt to have double jeopardy in the application DFG section 1600 to dredgers. Section 1600 clearly defines the needs as to when it shall apply and was in place prior to the new draft. According to this draft section, I can move a rock with a winch where section 1600 would not invoke further action if no dredging is involved. But if I am dredging and move the same rock with the same winch, 1600 applies and the additional requirements place upon

section 1600 must enforce on miners? If I am dredging and move the same without a winch 1600 does not apply? The safety of the miners is at risk. This is a seriously flawed portion of the draft, clear violations of civil & constitutional rights and must be removed.

Intake Screen size - There was no cause for harm cited, no environmental determination for this section, no engineering was applied to this section and this section will prohibit suction dredging based on mechanics and physics. It is unreasonable and unwarranted. This will clearly violate the outline of the already mentioned California Coastal Commission vs. Granite Rock and must be removed.

Permit restrictions – This is clear take of property and violates both state & federal rights on a civil & constitutional level. In the court action that required the new EIR and this draft, both an assistant attorney general and the lead legal counsel for the DFG both stated that they feel the state does not even have the legal authority to be in suction dredge permit business. The state cannot arbitrarily restrict a federal statute or a miner's right to perfect his claim in such a way. This section must be removed.

Frogs and additional waterway closures – The DFG has already determined that stocking of nonnative fish species was causing harm to frogs and similar wildlife The harm is so great; DFG has taken the action of drastically altering stocking programs of the non-native species. Further, San Francisco State University biologists have determined a deadly fungus that infects frogs, toads, salamanders and newts in California's High Sierra is a *major cause* (emphasis added) of the population decline. There was no harm shown and there was no cause shown, that dredging caused *any* impact to these species and yet numerous water ways were closed, altered or seasons changed to dredging. This section must be removed and all waterways be opened as per the 1994 regulations.

Your draft regulations are clearly beyond excessive by the prudent man, direction of the court, California and federal law on a civil and constitutional level. They pose numerous illegal take actions by the state, and are a blatant attempt to prohibited and authorized action through regulation. The draft regulations should be deleted and the 1994 regulations should be reinstated immediately. Further, DFG should wave any fees for miners that were denied rights and use of property for the next three years of dredging.

I further encourage you to heed those comments already submitted to you by Mark and Pat Keene of Keene Engineering, Claudia Wise, and Joseph Greene retired U.S. EPA Scientists and invited members of the CDFG SEIR Public Advisory Committee, Marcia H. Armstrong, Supervisor District 5, Siskiyou County, CA and Dave McCracken of the New 49ers.

In fact I feel so strongly of Mr. McCracken's comments that I have received permission to use them as my own and have included them here as my own additional comments.

Steve Kleszyk, Miner and claim owner

475 Sheridan Circle

Livermore, CA

Additional Comments:

This SEIR has Adopted Too Narrow of a View Concerning Perceived Environmental Impacts, and has not Balanced those to the Actual Economic & Social Impacts

We find it disturbing that this SEIR has gone to such extensive lengths to address the potential negative impacts of suction dredging upon California's historical resources (which you consider "significant and unavoidable") in some part because suction dredging has the potential to disturb sites which may be present as a result of historical gold mining operations, or could perhaps disturb a small boat which may have been left behind at the bottom of some "confidential" waterway by some unnamed ancient tribe. You have considered the potential negative disturbances upon others which the sound of our dredge motors might impose upon others. You have considered the feelings which other river-users might have when suction dredgers might occupy some of the limited parking along river roads. You even included a substantial discussion about the aesthetic viewpoints which might be affected when a passerby sees a suction dredge along the river.

But what is entirely missing from your SEIR is a discussion about the sociological impact that your proposed regulations are going to have upon suction dredgers, American property owners and other Americans as the California Department of Fish & Game grinds forward with the intent to disenfranchise them/us of the opportunity to make a living (liberty) and continue to have some control over their/our own private property.

The SEIR defined its objective as follows:

6.2.1 Program Objectives

The Program was developed to achieve the following objectives:

Comply with the December 2006 Court Order;

Promulgate amendments to CDFG's previous regulations as necessary to effectively implement Fish and Game Code sections 5653 and 5653.9 and other applicable legal authorities to ensure that suction dredge mining will not be deleterious to fish;

Develop a Program that is implementable within the existing fee structure

established by statute for the California Department of Fish and Game's suction dredge permitting program, as well as the existing fee structure established by the CDFG pursuant to Fish and Game Code section 1600 et seq.;

Fulfill the CDFG's mission of managing California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public; and

Ensure that the development of the regulations consider economic costs, practical considerations for implementation, and technological capabilities existing at the time of implementation.

Fulfill the CDFG's obligation to conserve, protect, and manage fish, wildlife, native plants, and habitats necessary for biologically sustainable populations of those species and as a trustee agency for fish and wildlife resources pursuant to Fish and Game Code section 1802.

Please recognize that there is no objective stated within the SEIR to also balance real concerns for environmental protection with the rights of property owners and existing business opportunities (especially small business) which exist within the areas that would be affected by the proposed regulatory changes.

Having read the entire SEIR, along with the appropriate Code Sections, we are convinced that DFG is attempting to complete the Administrative Process with too narrow of a view. Your approach appears to be to remove any and all risk to fish, no matter how insubstantial or theoretical, regardless of the costs which the affected small businesses and property owners will have to pay.

The SEIR claims that the "…purpose of promulgating the draft proposed regulations is to ensure that suction dredge mining consistent with the Proposed Program is not "deleterious to fish" (Fish & G. Code § 5653). (2.1.2 Program Objectives)

But F&G Section 5653's mandate must also be interpreted in light of all the other mandates the California Legislature has placed upon State agencies. For example, under the endangered species act you are to develop measures that protect species "while at the same time maintaining the project purpose [here suction dredging] to the maximum

extent possible" (Fish and Game Code § 2053; emphasis added). As a general matter, mitigation "measures or alternatives required shall be roughly proportional in extent to any impact on those [listed] species caused . . .". (Id. § 2052.1). This legislation refutes the notion that you can restrict dredging operations because of mere "potential" for adverse impacts on fish. To be lawful, any restrictions must make tangible improvements in the community or species-level survival of fish. The SEIR does not present a record to support the restrictions you that you are proposing.

We ask you to recognize that the legislature has also acknowledged the importance of maintaining and encouraging a viable minerals industry:

Public Resources Code 2650: (a) It is the continuing policy of the State of California, in the interest of the needs of society for the wise use of mineral resources and for other sound conservation practices, to foster and encourage private enterprise in all of the following activities:

(1) The development within the state of economically sound and beneficial mineral industries and metal and mineral product reclamation industries.

(2) The orderly and economic exploration, development, and utilization of the state's mineral resources and reclamation of metal and mineral products

emphasis added).

Public Resources Code 2711: (a) The Legislature hereby finds and declares that the extraction of minerals is essential to the continued economic well-being of the state and to the needs of the society, and that the reclamation of mined lands is necessary to prevent or minimize adverse effects on the environment and to protect the public health and safety (emphasis added).

These Code Sections mandate respect for mining as an activity that cannot lawfully be singled out for significant restrictions. If mere "potential" for adverse interactions were the criterion for regulation, you should be forbidding all swimming, rafting, kayaking and

fishing in the river -- and even camping near the river, all of which pose as much "potential" to injure fish as mining—and certainly more so in the case of fishing.

In going through the SEIR, it appears that DFG decided from the beginning to overlook the important negative economic and social benefits which your proposed regulations will certainly have upon the gold mining community. One reason we say this is that while DFG has loaded the SEIR with scientific justification in an attempt to support its proposed regulatory changes, there little-to-no explanation about how the changes (from the 1994 regulations) are going to seriously harm the small businesses and property owners that will be negatively impacted.

Public Resources Code 21001: The Legislature further finds and declares that it is the policy of the state to:

(e) Create and maintain conditions under which man and nature can exist in productive harmony to fulfill the social and economic requirements of present and future generations (emphasis added).

(g) Require governmental agencies at all levels to consider qualitative factors as well as economic and technical factors and long-term benefits and costs, in addition to short-term benefits and costs and to consider alternatives to proposed actions affecting the environment.

Public Resources Code 21002: The Legislature finds and declares that it is the policy of the state that public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects, and that the procedures required by this division are intended to assist public agencies in systematically identifying both the significant effects of proposed projects and the feasible alternatives or feasible mitigation measures which will avoid or substantially lessen such significant effects. The Legislature further finds and declares that in the event specific economic, social, or other conditions make infeasible such project alternatives or such mitigation measures, individual projects may be approved in spite of one or more

significant effects thereof (emphasis added).

We suggest that DFG is deliberately attempting to dismiss the real impacts the proposed regulations will have upon the social and economic wellbeing of the most-affected stakeholders (gold dredgers and property owners) because of the arbitrary baseline which DFG has adopted. Even though the SEIR has acknowledged multiple times that suction dredging has been active within California since the 1960's, DFG decided to compare impacts from the proposed regulations to the existing situation whereby the Alameda Superior Court has imposed a no dredging moratorium until DFG completes this CEQA process. Yet, the purpose of the CEQA process from the beginning was to determine if existing (1994) dredge regulations were creating a deleterious impact upon fish.

DFG submitted Declarations within the Alameda litigation stating that you had doubts that existing regulations were providing enough protection for fish. Therefore, you began this process with it in mind that you were going to impose more restrictive regulations over suction dredgers. Therefore, we are assuming that DFG is making an economic comparison to "no dredging" under the existing moratorium so you can avoid the required balancing act of also taking into consideration how the proposed regulations will burden the thousands of dredger miners and the thousands of property owners who have invested into the existing (1994) regulatory framework. Here is the way you positioned the SEIR:

Impact MIN-1: Availability of, or Access to, Placer Gold Deposits

(Beneficial): …Implementation of CDFG's Program would lift an existing ban on suction dredging and would increase the potential access to placer gold deposits using this mining method (emphasis added).

By permitting the use of suction dredges, the Program would provide another means for recovery of gold from placer deposits. Adoption of the Proposed Program would result in a beneficial impact by allowing an additional method for extracting mineral resources (i.e., increasing the availability of such resources). The Proposed Program may also include measures to permanently or seasonally restrict suction dredging activities in certain areas of

the State. However, these restrictions on suction dredging activities would not preclude other methods of mineral extraction. Therefore, the Proposed Program would not result in a loss of availability from the existing baseline conditions (i.e., prohibition of suction dredging) and would only change the allowable methods of mineral recovery. Therefore, the Proposed Program would have a beneficial impact on the availability and access to placer gold deposits (emphasis added).

These statements are misleading, because they are not making a comparison to all of the business activity which has invested itself to the existing (1994) regulations. Your SEIR should make it more clear that the proposed regulations would eliminate suction dredging across the state in most places where existing regulations allow it to occur. In addition, your SEIR should make it more clear that in the places where dredging would be allowed under the proposed regulations, effective mining capacity would be reduced to one quarter because suction nozzles would be reduced to 4-inches from 6-inches1. In addition, California's most productive rivers would be reduced to 1/8th of existing capacity because allowable nozzles would be reduced from 8-inches to 4-inches.

While DFG states that dredgers may be allowed under the proposed regulations to increase capacity by entering into a Section 1600Agreement, nothing is said about how lengthy and expensive the process is, ultimately which would make it impossible for many or most dredgers to gain approval during the same mining season that the dredger is pursuing the mining project.

1 The standard rule of thumb in suction dredging is that in experienced hands, a 5-inch dredge will process twice the volume over a 4-inch dredge and efficiently excavate a hole one foot deeper into the streambed; that a 6-inch dredge will process twice the volume over a 5-inch dredge and efficiently excavate a hole one foot deeper into the streambed; that a 6-inch dredge will process twice the volume over a 5-inch dredge and efficiently excavate a hole two feet deeper into the streambed; and that an 8-inch dredge will

process twice

the volume over a 6-inch dredge and efficiently excavate a hole two feet deeper into the streambed. This

formula has to do with the area-opening of the suction nozzle (rather than the diameter) and the percentage

of larger-sized rocks within an average streambed that can be sucked up the nozzle rather than be packed

by hand out of the excavation. The formula is the result of countless excavations which I have made over

the many, many years. It is not something I just made up. You will find it in the books and articles which I

and others have published long before this CEQA process was started.

DFG's has also understated the economic opportunities which were possessed by suction

dredgers under the existing (1994) regulations in the way the dredger survey results have

been interpreted:

Chapter 4.8: Of the in-state permit holders, approximately 82% of those

surveyed identified themselves as "recreational" miners, while approximately

74% of out-of-state permit holders identified themselves as such;

This statement is a mischaracterization, perhaps because DFG really does not understand

the mining process. The Survey identifies "Recreational Dredgers" as follows:

"Recreational Dredger (Not significant source of income)"

Just because someone does not realize a significant source of income from dredge mining

does not mean that they are not serious about the amount of gold they are recovering.

There is a learning curve; so it would be unreasonable for a dredge miner to have high

expectations of gold recovery until some experience is obtained. Locating a valuable

discovery normally requires a period of prospecting (sampling) during which time not

very much gold is being recovered. Finding a valuable discovery normally requires some

time. Therefore it takes longer for part time prospectors.

Even a person who believes he or she is "only dredge mining for fun" will become

deadly serious about recovering the gold (because it is extremely valuable) once a

valuable deposit has been located.

It is incorrect for DFG to characterize dredging as just another form of recreation on the grounds that it can also be an enjoyable activity in the outdoors. The thing that makes suction dredging different than other outdoor activities is that a very valuable substance is being pursued, gold; which when found, immediately turns the activity into a small business program. I have devoted countless hours with many, many suction dredgers; and I can tell you with absolute certainty that every dredger becomes very serious about gold recovery once a valuable deposit is located. The SEIR does not provide enough emphasis that, by its nature, dredge mining becomes a small business concern once a valuable gold deposit is discovered.

Out of all the people surveyed, the average dredger used a 4-inch dredge and recovered around 3.4 ounces of gold, working about 5.25 hours per day for approximately 31 days of work. These are average numbers. Approximately 25% said they recover gold as a source of income. It is reasonable to assume more gold was recovered by more-serious operators who were using larger-sized dredges than 4-inches. But if we just take the average amount of gold that dredgers were recovering during 2008 under the existing (1994) regulations, at today's value of $1,475 per ounce, the gold adds up to $5,300. Divide that amount by the 31 days which the average dredger had been working, and you have $171 per day. This comes to more than $32.62 per hour, which is a good wage! This is especially true in view of California's existing unemployment figures. You might rework the numbers a bit and come up with a different amount. But it will still come out to real money and important business!

Furthermore, there is no acknowledgement in the SEIR that all of this gold is a source of true wealth coming into California. This is not paper money that is coming off the government's printing presses, or credit created by the fractional banking schemes used by banks or the perception of value that is created by the financial markets as capital ebbs and flows to different kinds of investments. Gold is real wealth that will still exist long after today's markets and currencies are a thing of the past. Every additional ounce of gold brought into the market through dredge mining makes California just that much more valuable. According to your survey, suction dredgers recovered 12,410 ounces of

gold in California during 2008; or more importantly, 173,750 ounces of gold during the 14-year period which the 1994 regulations have served us -- and your SEIR has not presented a single example where any fish was harmed!

It is reasonable to assume that dredge miners who depend upon the gold they recover as a source of income are taking on the activity as a small business enterprise. If 25% of dredgers during 2008 were pursuing the activity for financial gain as your survey suggests, that amounts to 900 small businesses across the state that were operating under existing regulations, all or most who would be negatively-impacted by the proposed regulations. There is not enough emphasis in the SEIR about this.

There is also nothing within the SEIR's economic discussions which project future gold prices based upon the existing growth curve; not even a mention! Financial experts uniformly expect the value of gold to go up. Some suggest the price is nearly certain to reach $2,000 per ounce even before our updated suction dredging regulations will take affect in 2012. That would place the average value in gold recovered by dredgers under the 1994 regulations at more than $200 per day; more than $36 per hour! This creates a very substantial small business opportunity in California for the thousands of suction dredge miners that will be directly and negatively impacted by your proposed regulations. This cannot be ignored or overlooked!

The SEIR must consider the value of gold at the time the EIR is finalized.

There is also the matter of how the proposed regulations will undermine California's competitiveness with other states. California's existing (1994) regulations are about the same as Alaska's suction dredge regulations. However, California has a distinct dry season which Alaska does not enjoy. The summer season is also longer in California, providing California dredgers a competitive edge over Alaska under the 1994 regulations. However, the proposed regulations would eliminate dredging in most places across California, reduce nozzle sizes to 1/8th the effective capacities of dredges being allowed in Alaska, and shorten dredging seasons so drastically that Alaska will actually have a longer dredging season than California!

While Oregon provides a statewide permit (the permit only costs $25 per year even for nonresidents) which allows dredge mining (with no limit on the number of permits issued) in most parts of the state, their Department of Environmental Quality (DEQ) also allows dredgers to apply for a special dredging permit to operate larger sized dredges. Since DFG's proposed regulations would impose a limit on the number of permits and close suction dredging across most of California, if enacted, they would also provide Oregon with a competitive advantage. None of this is addressed within the SEIR, as it is supposed to be:

Government Code 11346.3: (a) State agencies proposing to adopt, amend, or repeal any administrative regulation shall assess the potential for adverse economic impact on California business enterprises and individuals, avoiding the imposition of unnecessary or unreasonable regulations or reporting, recordkeeping, or compliance requirements. For purposes of this subdivision, assessing the potential for adverse economic impact shall require agencies, when proposing to adopt, amend, or repeal a regulation, to adhere to the following requirements, to the extent that these requirements do not conflict with other state or federal laws:

(2) The state agency, prior to submitting a proposal to adopt, amend, or repeal a regulation to the office, shall consider the proposal's impact on business, with consideration of industries affected including the ability of California businesses to compete with businesses in other states. For purposes of evaluating the impact on the ability of California businesses to compete with businesses in other states, an agency shall consider, but not be limited to, information supplied by interested parties (emphasis added).

The SEIR also does nothing to assess the social and economic impact the proposed regulations will have upon all of the people who have moved their residences to gold country in California so they can be closer to suction dredging opportunities which have been allowed under the 1994 regulations, but disallowed under the proposed regulations. There are dozens of families belonging to The New 49'ers who have completely pulled

up their roots and moved to Happy Camp or other places within closer reach of our mining properties. We are certain that this is true along all of the productive gold dredging areas of the state. Many have bought property. I am aware some have taken early retirement or quit their jobs so they could relocate closer to the productive dredge mining areas. What about the social impact upon them under the proposed regulations? Another very important negative economic and social factor which DFG has overlooked in the SEIR are the millions upon millions of dollars in lost property value which Americans would lose as a direct result of the proposed regulations. This is about the many thousands of federal mining claims and parcels of private property which exist along the gold bearing streams and rivers within the state. Thousands of miles of property along these waterways would be completely closed to suction dredging under your proposed regulations. Those areas which would remain open to dredge mining under the proposed regulations would be reduced to a quarter or a mere eighth of the productive capacity which exists under the 1994 regulations (reduction of allowable dredge sizes from 6 or 8-inches down to 4-inches). This would dramatically undermine existing property values! The EIR waves off this reality as follows:

2 6.3.1: In relation to mineral resources, the No Program Alternative would not result in any discernable change from the Proposed Program. Though this alternative would no longer permit the use of a particular device to conduct gold mining, it does not entirely prohibit gold or other mineral extraction. This is similar to the Proposed Program in that methods other than suction dredging would still be allowed in the streams subject to seasonal or permanent closures under the proposed regulations (emphasis added).

Impact MIN-2: Compliance with Applicable Federal and State Mining Regulations (No Impact): Implementation of the Proposed Program would not affect the ability of placer miners using other mining techniques to comply with the applicable federal and state mining regulations because the Proposed Program would only apply to suction dredging miners (emphasis added).

DFG is ignoring information which experienced suction dredgers provided during the PAC meetings when they explained that suction dredging is the only viable method of recovering valuable gold deposits which rest at the bottom of California's active waterways. It would be near-to-impossible, under the state and federal environmental protection reality of the day, for any reasonable person to believe we could obtain the required permits to use heavy earth-moving equipment to extract gold from active waterways in California; especially within the waterways which DFG is proposing to close to suction dredging!

High-grade gold deposits at the bottom of most waterways are buried under too much streambed material to excavate with hand tools. Anyone who has ever tried to excavate with hand tools underwater has already discovered how slow and difficult it is. "Slow and difficult" relates to a non-viable mining program!

The EIR does not place an appropriate amount of emphasis on the reality that the proposed regulations would eliminate the only effective method of gold extraction upon thousands of miles of California's waterways, therefore reducing the value of property which Americans own there, in some cases, eliminating the value altogether. Millions upon millions of dollars have been invested in mining properties which derive most of their value because suction dredges have been allowed to operate there under the 1994 regulatory framework.

While the SEIR goes to great lengths to justify the reasons why DFG wants to impose more restrictive regulation upon suction dredge miners, it has made zero effort to study how many thousands of existing properties along California's waterways would lose some or all of their value. We have not seen that DFG has many any attempt to contact or notify property owners who will be negatively impacted by the proposed regulations. This suggests that DFG is not really making a serious effort to balance the real costs of the proposed regulations to the American people, small business and property interests, something you are supposed to do in this Process.

To place some perspective on this, several years ago our Association decided to sell a

number of mining properties (less than 10 mining claims) which were located along the main stem of the Salmon River in Siskiyou County. Several of these properties included some gravel bars along the side where hand-mining could take place; but the true value of the properties, and the reason people wanted to buy them, was because our organization had managed several group dredge-sampling projects along that portion of the Salmon River and had established a steady high-grade line of gold under an average of 7-feet of streambed. The properties were sold at auction so we could establish their actual value. In all, we realized more than $350,000 for the group of properties, more than $70,000 for the claim which sold at the highest price. The entire reason why Americans bought those mining properties was so they could develop the economically-viable gold deposits which we had established at the bottom of the river under the regulatory scheme (1994) which was in affect at the time. When people pay tens of thousands of dollars for a mining claim, they are mostly doing it for business reasons. The main stem Salmon was allowing 6-inch dredges under those regulations. Your proposed regulations of a 4-inch limit would place those very same high-grade gold deposits effectively out of reach. Some of the mining claims we sold along the Salmon River were located in canyons where bedrock walls dropped directly into the river. Therefore, gold dredging is the only effective method of mineral extraction there. We had also done some sampling along the surface where gravel bars existed on some of the claims. And while gold existed there, we could not find any deposit rich enough to pay wages for gold panning or other types of high-banking activity. The real value was in the original underwater high-grade deposits which had never been mined in the past.

You make statements in the SEIR that even with dredging eliminated or reduced because of the proposed regulations, prospectors would still have the option of pursuing other types of mining activity on the same properties. This viewpoint shows that you really do not understand mining. Viable gold deposits are not evenly disbursed everywhere. They exist where you find them. These deposits are always contained within very-defined boundaries. Dredge miners have to locate and develop the deposits where they exist. Under the federal mining law, an exclusive right (mining claim) can only be established

as a matter of law once a viable gold discovery has been made. By “viable,” this means a small business opportunity exists. If the discovery can only be viably-developed with the use of a 6-inch or 8-inch dredge (under the 1994 regulations), and you impose a 4-inch reduction in the mining capacity (or disallow dredging altogether), you have eliminated the viable discovery which creates the mining claim in the first place as a matter of law. Saying that the person can still pan gold on the property is like apples and oranges. If you prohibit use of the very equipment which makes it economically viable to work the property, you have undermined the legal foundation which allows the person an exclusive right to develop the property. This means you have taken the person’s ownership interest away.

Furthermore, the restricted nozzle size which is proposed in the SEIR would eliminate viable sampling and productive capacity in most of the areas which would remain open to dredging, namely the larger waterways within the state. As just one example, the Klamath River streambed runs an average of 8-to-10 feet thick (sometimes more than 20 feet thick). But the efficient depth-capacity of a 4-inch dredge in experienced hands is only 4 feet. Therefore, DFG is proposing to make nearly all of the areas which remain open along the Klamath River off limits to effective sampling for viable gold deposits! This terrible reality will exist along all of the waterways which you propose to leave open to dredge mining. Therefore, the proposed regulations would reduce or eliminate the property values in the areas remaining open to suction dredging.

The SEIR repeats over and over that dredge miners would have the option to pursue a Section 1600 Agreement to operate larger suction dredges. But there is no guarantee of approval, and there is zero discussion inside the SEIR of how lengthy and difficult that process has become.

I have written very extensively on the subject of using dredges to sample for high-grade gold deposits. And I can tell you with certainty that there is no way that a person in the business of dredge mining can afford to stop and apply for another Section 1600 Agreement every time he or she wants to move to the next sample location. The process of sampling must be more fluid than that; because the prospector is tracing the path of

gold in the waterway, along with the layer which it rests upon, as he or she is able to follow it through more and more sampling. Each sample requires another test hole; sometimes a distance up or down the waterway; sometimes to one side or the other. The process of finding high-grade is already challenging. Adding the requirement of a Section 1600 Agreement each time the dredger wants to test a new location would render the sampling process impossible.

The SEIR fails to acknowledge that the proposed regulations would effectively undermine most suction dredgers' ability to sample for valuable gold deposits within those places in California which would remain open. This would create economic losses in two ways:

(1) Dredgers would recover less gold, consequently undermining the business of small-scale mining across the state.

(2) If dredgers cannot find viable gold deposits along the state's waterways (which could otherwise be found if dredging under the 1994 regulations), then the value of those properties would be undermined. This is a discussion about what others would be willing to pay for the properties.

We are all reminded about the property rights which Americans possess under the federal mining law in USA V SHUMWAY, Ninth Circuit, 22/28/99:

"The miners' custom, that the finder of valuable minerals on government land is entitled to exclusive possession of the land for purposes of mining and to all the minerals he extracts, has been a powerful engine driving exploration and extraction of valuable minerals, and has been the law of the United States since 1866."

"The Supreme Court has established that a mining "claim" is not a claim in the ordinary sense of the word--a mere assertion of a right--but rather is a property interest, which is itself real property in every sense, and not merely an assertion of a right to property (emphasis added)."

"[W]hen the location of a mining claim is perfected under the law, it has the effect

of a grant by the United States of the right of present and exclusive possession.
The claim is property in the fullest sense of that term (emphasis added)."
I encourage DFG to consult with your legal staff concerning CALIFORNIA COASTAL COMM'N v. GRANITE ROCK CO., 480 U.S. 572 (1987). My own read of this important Supreme Court Decision brings me to the conclusion that while a State Agency may have some limited authority to regulate a mining activity on the public lands, there is no authority to prohibit mining, or to impose unreasonable regulations or to override the clear intent of Congress.
DFG does not have the authority to declare that suction dredgers are nothing more than "recreationalists," to be managed just like any other outdoor activity on the public lands (like fishing or hunting). If you have any authority at all to regulate dredge mining on the public lands, it is only within the language of F&G Code Section 5600, namely to work in cooperation with miners to find reasonable ways to prevent a deleterious impact upon fish. DFG's interpretation of "deleterious" in Section 2.2.2 of the SEIR is as follows:
"an effect which is deleterious to Fish, for purposes of section 5653, is one which manifests at the community or population level and persists for longer than one reproductive or migration cycle."
Under GRANITE ROCK, we do not believe you have any authority to impose some kind of state "recreational status" or other regulatory scheme upon dredgers that does not align with the federal management of our program. Therefore, it would appear that all the work which you devoted to addressing how suction dredgers would affect the aesthetics of scenic vistas, noise levels and parking was a complete waste of time. Here is how the U.S. Forest Service defines us:
DEPARTMENT OF AGRICULTURE, Forest Service, 36 CFR Part 228
RIN 0596–AC17; ACTION: Final rule: "Neither the United States mining laws or 36 CFR part 228, subpart A, recognize any distinction between ''recreational'' versus ''commercial'' miners, or provide any exceptions for operations conducted by ''recreational'' miners. The same rules apply to all miners. Thus, to the extent that individuals or members of mining clubs are prospecting for or mining

valuable deposits of locatable minerals, and making use of or occupying NFS surface resources for functions, work or activities which are reasonably incidental to such prospecting and mining, it does not matter whether those operations are described as ‘‘recreational’’ or ‘‘commercial (emphasis added).

The clear intent of Congress concerning how the federal agencies are directed to oversee mining on the public lands was confirmed in the controlling case of USA V SHUMWAY, Ninth Circuit, 22/28/99:

“A mineral claim is a parcel of land containing precious metal in its soil or rock.”

“Mining claims located after the effective date of the 1955 Act are subject, prior to issuance of patent, to a right of the United States to manage surface resources and for the government and whomever it permits to do so to use the surface, so long as they do not endanger or materially interfere with prospecting, mining, or processing (emphasis added).”

“As required by the Forest Service's organic act, the Secretary of Agriculture was delegated the authority to promulgate regulations for the protection of the forests:

“The Secretary of Agriculture shall make provisions for the protection against destruction by fire and depredations upon the public and national forests which may have been set aside . . . ; and he may make such rules and regulations and establish such service as will insure the objects of such reservations, namely, to regulate their occupancy and use and to preserve the forests thereupon from destruction.”

That same organic legislation limited that power, requiring that no such rule or regulation "prohibit any person from entering upon the national forests for all proper and lawful purposes, including that of prospecting, locating and developing the mineral resources thereof." "Such persons must comply with the rules and regulations covering such national forests." Interpreting these statutes in United States v. Weiss, we held that the Secretary may adopt reasonable rules and regulations which do not impermissibly encroach

upon the right to use and enjoyment of . . . claims for mining purposes."
Thus, under Weiss, the Forest Service may regulate use of National Forest lands by holders of unpatented mining claims, like the Shumways, but only to the extent that the regulations are "reasonable" and do not impermissibly encroach on legitimate uses incident to mining and mill site claims (emphasis added)."

"Congress has refused to repeal the Mining Law of 1872 Administrative agencies lack authority effectively to repeal the statute by regulations (emphasis added)."

The California legislature also has mandated that state regulatory agencies should be careful about imposing unreasonable regulations which conflict with federal regulations:

Government Code 11346.2: Every agency subject to this chapter shall prepare, submit to the office with the notice of the proposed action as described in Section 11346.5, and make available to the public upon request, all of the following:

(5) A department, board, or commission within the Environmental Protection Agency, the Resources Agency, or the Office of the State Fire Marshal shall describe its efforts, in connection with a proposed rulemaking action, to avoid unnecessary duplication or conflicts with federal regulations contained in the Code of Federal Regulations addressing the same issues…(emphasis added

There are also requirements for "necessity" and "non-duplication" pursuant to Government Code Sections 11349 and 11349.1 that are implicated here. In the Alameda litigation, we have painstakingly described a comprehensive scheme of federal oversight concerning suction dredge mining on federal lands, which constitute most of the areas addressed in your SEIR. In particular, we explained how federal law has created a statutory right to use the waters within the boundaries of national forests for mining (16 U.S.C. § 481) consistent with comprehensive federal regulations addressing and reviewing the environmental impacts of such mining (the 36 C.F.R. Part 228 regulations). Federal

forest rangers receive individual “Notices of Intent” for suction dredge mining operations and make individualized determinations as to whether such operations may create a “significant impact upon surface resources” (which include the bottom of waterways). See generally Karuk Tribe v. U.S. Forest Service, No. 05-16801 (9th Cir. April 7, 2011). The SEIR and proposed regulations completely fail to take account of this system by attempting to impose additional (unreasonable) burdens under California law.

DFG’s proposed regulations unreasonably prohibit the use of suction dredges across most of the public lands in California along gold bearing waterways where the only viable method of location and development of high-grade gold deposits is with the use of suction dredges. In those remaining areas where the proposed regulations allow suction dredging (larger waterways), a reduced nozzle size will amount to a “prohibition” in most areas because smaller-sized dredges cannot effectively reach the viable gold deposits which exist under deeper streambeds. All of this, without the SEIR presenting any evidence that dredging under the existing (1994) regulations has ever created any deleterious impact upon a single fish, much less the Department’s definition of deleterious within the SEIR:

2.2.2 Definition of “Deleterious to Fish: Generally, CDFG concludes that an effect which is deleterious to Fish, for purposes of section 5653, is one which manifests at the community or population level and persists for longer than one reproductive or migration cycle. The approach is also consistent with the legislative history of section 5653. The history establishes that, in enacting section 5653, the Legislature was focused principally on protecting specific fish species from suction dredging during particularly vulnerable times of those species’ spawning life cycle (emphasis added)

We see no emphasis within the SEIR about the important cultural and economic impacts which small-scale miners have played in the history of California, especially to the smaller, rural communities near to where gold mining has taken place. The entrepreneurial spirit embodied through small-scale mining in California predates

California Statehood! This is not about “recreational mining,” as the SEIR has attempted to define the heart of our industry. It is about the legacy of small-scale entrepreneurs who risk everything and work our guts out in hopes of striking it rich, or at least making a discovery which will provide enough income to keep a prudent person hopeful.

With only an occasional exception, the only reasonable hope of striking it rich or making real money for a small-scale miner today exists with the use of suction dredges. This reality was made abundantly clear to DFG during the PAC meetings. It is the modern suction dredgers who carry forward the 150-year-old legacy of viable small-scale miners in California. For the reasons we have outlined above, the proposed regulations would be nothing short of cultural genocide upon the viable small-scale mining community. All that would remain are those who have no hope of making real money from the activity. Pursuing the American dream through small-scale gold mining with the use of suction dredges would be a thing of the past. Yet, federal policy on the public lands is to encourage viable mineral development, not recreation; so that it remains a “powerful engine driving exploration and extraction of valuable minerals” There is nothing explained within the SEIR that the proposed regulations will substantially “encroach on legitimate uses incident to” viable mining business opportunities which have been available under the 1994 regulations.

Because the proposed regulations attempt to impose such a heavy burden upon our industry, we took special time to carefully review all of the biological considerations which are contained within the SEIR; and we are very surprised, that with the exception of DFG’s concerns over mercury (which we will address elsewhere), your biological concerns are the very same ones that were substantially addressed within the Final EIR that was published in 1994! Your SEIR addresses the very same tired arguments that have already been looked at and dismissed (in relation to DFG’s definition of “deleterious”) in numerous studies, and also within the 1994 EIR.

Completely missing from the SEIR is a single example of any fish ever having been harmed as a result of 14 years of suction dredging activity under the 1994

regulations!

Rather than adopt a balanced approach in considering the real impacts from 14 years of activity, DFG has chosen in this SEIR to compare “possible impacts” (which were compared in 1994 to “ongoing dredging activity”) to a “no existing dredging activity” baseline because of the existing moratorium. Here is the way the SEIR attempts to dance around this:

1.3.1: A state or local lead agency prepares an SEIR when, after having prepared and certified an earlier EIR for the same project, new information, changed circumstances, or project changes are proposed that involve new significant or substantially more severe environmental effects not previously addressed in the earlier EIR (emphasis added).

Finally, it bears noting that this SEIR extends beyond the scope of a typical SEIR, in that it presents a comprehensive evaluation of the full range of potential environmental impacts, including topics which were previously addressed in the 1994 EIR. The 1994 EIR, in general, utilized a fairly broad and qualitative approach in evaluating impacts. To bring additional specificity and clarity to the impact discussion and conclusions, this SEIR revisits many of these topics, even where there is not information to suggest that there may be new significant or substantially more severe environmental effects than were evaluated in the 1994 EIR. In large part, the change in existing environmental conditions at the time of preparation of these planning documents lends to the increased scope of this report compared to a typical SEIR. As explained in more detail below, the Hillman injunction and the passage of SB 670 prohibiting CDFG from issuing new suction dredge permits necessitate a change in baseline conditions from which to assess potential effects, as compared to an environmental baseline that includes ongoing suction dredging activities consistent with the existing regulations in Title 14 as analyzed in the 1994 EIR (emphasis added).

1.3.2 Baseline Conditions: Under CEQA, the environmental setting or "baseline" serves as a gauge to assess changes to existing physical conditions that will occur as a result of a proposed project. Per CEQA Guidelines (Cal. Code Regs., tit. 14, §15125), for purposes of an EIR, the environmental setting is normally the existing physical conditions in and around the vicinity of the proposed project as those conditions exist at the time the Notice of Preparation (NOP) is published. As underscored by appellate case law, however, the appropriate environmental baseline for a given project may be different in certain circumstances in order to provide meaningful review and disclosure of the environmental impacts that will actually occur with the proposed project (emphasis added).

In the present case, CDFG has determined that a conservative approach to identifying the environmental baseline is appropriate. As described above, instream suction dredge mining is currently prohibited in California pursuant to a state law enacted shortly before the publication of the NOP for this SEIR. (Fish & G. Code, 5653.1, added by Stats. 2009, ch. 62, § 1 (SB 670 (Wiggins).) The same law and a related court order also prohibit CDFG from issuing new suction dredge permits. CDFG has determined that the appropriate environmental baseline for purposes of CEQA and the analysis set forth below is one that assumes no suction dredging in California, because that was (and remains) the state of the regulatory and physical environment at the time the NOP was published. The SEIR provides a "fresh look" at the impacts of suction dredge mining on the environment generally (emphasis added).

4.0.2 Significance of Environmental Impacts: According to CEQA, an EIR should define the threshold of significance and explain the criteria used to determine whether an impact is above or below that threshold. Significance criteria are identified for each environmental category to determine whether implementation of a project would result in a significant environmental impact when evaluated against the environmental setting/baseline

conditions (emphasis added).

Please allow us to review: During the ongoing litigation in Alameda Superior Court, DFG has made several formal Declarations that it possesses “new information” which suggests there may be a deleterious impact upon fish as a result of dredging activity under the 1994 regulations. Therefore, the Court issued a moratorium upon suction dredging and Ordered DFG to review the impacts. And rather than come forward with any new biological information that would support its concerns, you have seized upon the opportunity of the “no dredging” baseline to completely reevaluate the biological impacts which were previously considered during 1994, which were then measured against ongoing dredging activity!

Adoption of a “no dredging” baseline is extremely arbitrary. The CEQA baseline is a set of physical conditions in the affected area; which in the context of an SEIR, as opposed to an initial EIR, plainly includes such conditions that exist as a result of the ongoing “project” of issuing permits (Fish and Game Code § 5653.1(a)). A temporary moratorium enacted because of your failure to update the CEQA analysis in a timely fashion is precisely the sort of “temporary lull or spike in operations that happens to occur at the time environmental review . . . begins [and] and should not depress or elevate the baseline”. Communities for a Better Environment v. South Coast Air Quality Management District (2010) 48 Cal.4th 310, 328.

Moreover, your focus on a no-mining baseline, if adopted, would have to be consistent as to all the effects. It is well known, for example, that salmon redd counts increased substantially along the Salmon River after significant dredging activity loosened compacted river beds and made them more attractive spawning habitat. A true no-mining baseline would have to assume the absence of such spawning habitat and summer refugia holes created by mining, and a return to generally compacted and poor conditions in many of the affected areas. In reality, the benefits of mining persist for some time, and so the proper baseline is one that is associated with the ongoing mining activity.

Conversely, the SEIR says in the Introduction of the EXECUTIVE SUMMARY: “This SEIR and related review under CEQA analyzes the new significant and substantially

more severe environmental impacts that may be occurring under the 1994 permitting program that were not previously addressed by CDFG in the 1994 EIR." Only people working for a government agency could believe that you can have it both ways! The only reason the impacts have become "significant and substantially more severe" is because you are now measuring them against an unreasonable and arbitrary baseline! In other words, the only important new factor is the baseline which you are measuring against!

ARBITRARY AND CAPRICIOUS: Absence of a rational connection between the facts found and the choice made. Natural Resources. v. U.S., 966 F.2d 1292, 97, (9th Cir.'92). A clear error of judgment; an action not based upon consideration of relevant factors and so is arbitrary, capricious, an abuse of discretion or therwise not in accordance with law or if it was taken without observance of procedure required by law. 5 USC. 706(2)(A) (1988).

DFG's decision to proceed on this tact is fundamentally dishonest, extremely arbitrary and very unreasonable. Here is the way you are mandated by the legislature to perform the CEQA Process:

CEQA Guidelines 15002. GENERAL CONCEPTS: (g) A significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project. (See: Section 15382.) Further, when an EIR identifies a significant effect, the government agency approving the project must make findings on whether the adverse environmental effects have been substantially reduced or if not, why not. (See: Section 15091.) (Emphasis added)

CEQA requires that decisions be informed and balanced. It must not be subverted into an instrument for the oppression and delay of social, economic, or recreational development or advancement. (Laurel Heights Improvement Assoc. v. Regents of U.C. (1993) 6 Cal.4th 1112 and Citizens of Goleta Valley v. Board of Supervisors (1990) 52 Cal.3d 553) (Emphasis added)

While the impacts from suction dredging have not changed since the 1994 EIR was completed, this SEIR has largely focused upon the fact that more species have been added to the list which require special protection. And from that, DFG has apparently decided that these species deserve special protection from suction dredgers across the entire state of California through the proposed regulations, even though there has been zero evidence presented in the SEIR that any harm has ever occurred to any of these species as a result of the existing (1994) regulations. All this, while there are no meaningful restrictions being imposed upon hikers, swimmers, boaters, rafters, birdwatchers, camping enthusiasts, hunters or other nature lovers or actual recreationists that do not enjoy a mandate from Congress with a right to be present on the public lands!

While the SEIR does not present any real evidence of harm from the 1994 regulations, it makes an unreasonable proposal to prohibit suction dredging anywhere that suitable habitat exits for these special species:

2.2.3 Development of Regulations: For certain species, CDFG determined that any level of dredging activity in suitable or occupied habitat would have the potential to result in a deleterious effect to the species. For these species, occupied or suitable habitat is proposed to be closed to dredging (i.e., Class A).

Please read the Code references which I have quoted above and below. Our conclusion is that DFG does not have the authority to prohibit mining on the public lands without at least being able to provide a specific demonstration of substantial harm. The statute does not direct you to decline to issue permits based upon the "potential to result in a deleterious effect." More specifically, you can find an absence of deleterious effect even if there is "a potential deleterious effect," and you should do so.

As a general matter, the legislature has made it clear that although EIRs can appropriately consider potential effects, which should be disclosed and considered, regulatory prohibitions require actual effects. Dredge mining in occupied habitat under the 1994 regulations do not have any actual deleterious impact.

It is especially unreasonable for you to prohibit dredging based upon "potential" effects when healthy fish populations persisted through decades of extremely invasive hydraulic

mining with orders of magnitude more impact upon the environment then modern suction dredge mining.

You have suggested, in part, that regulation of potential impacts may be based upon a "precautionary approach". This approach is unreasonable in the context of an activity which has impacts that are both potentially positive and potentially negative. As we demonstrated in the Alameda litigation, suction dredge activity provides some of the only available summer habitat in many areas; suction dredging improves the quality of spawning beds, and operates to feed juvenile fish. These concrete positive effects cannot be imagined away by the potential that juvenile fish may react adversely to the mere presence of operators (especially given evidence that they cluster about the dredge output looking for food), or that the body heat of dredgers might somehow interfere with "cold water refugia."

Indeed, we would argue that the "precautionary principle," as a general principle, is itself unreasonable, because it presumes, contrary to fact, that any change is bad. The very purpose of preparing an EIR is to substitute balanced consideration of actual impacts for subjective presumptions in favor of or against particular activities.

Finally, the "precautionary approach is unreasonable to enforce upon Americans who have a statutory right to develop viable gold deposits, especially while using the only effective method available along the bottom of California's waterways, in this case, suction dredging. Rather, here is what the California legislature has to say about balancing environmental protection with existing social and economic needs:

CEQA GUIDELINES 15021: DUTY TO MINIMIZE ENVIRONMENTAL DAMAGE AND BALANCE COMPETING PUBLIC OBJECTIVES: (d) CEQA recognizes that in determining whether and how a project should be approved, a public agency has an obligation to balance a variety of public objectives, including economic, environmental, and social factors and in particular the goal of providing a decent home and satisfying living environment for every Californian (Emphasis added).

CEQA GUIDELINES 15043: AUTHORITY TO APPROVE PROJECTS DESPITE

SIGNIFICANT EFFECTS: A public agency may approve a project even though the project would cause a significant effect on the environment if the agency makes a fully informed and publicly disclosed decision that:

(a) There is no feasible way to lessen or avoid the significant effect (see Section 15091); and (b) Specifically identified expected benefits from the project outweigh the policy of reducing or avoiding significant environmental impacts of the project (Emphasis added).

CEQA GUIDELINES 15093: STATEMENT OF OVERRIDING CONSIDERATIONS: (a) CEQA requires the decision-making agency to balance, as applicable, the economic, legal, social, technological, or other benefits, including region-wide or statewide environmental benefits, of a proposed project against its unavoidable environmental risks when determining whether to approve the project. If the specific economic, legal, social, technological, or other benefits, including region-wide or statewide environmental benefits, of a proposed project outweigh the unavoidable adverse environmental effects, the adverse environmental effects may be considered “acceptable” (Emphasis added).

Conclusion

The SEIR is attempting to balance the economic and social impacts from the proposed regulations by comparing their value to a “no dredging” scenario which is the result of the existing moratorium. In addition to this being an exercise in bad faith, this is all a waste of time; because DFG does not have the authority to decide the value of mining which takes place on the public lands. Congress has already established the value by clearly informing federal management agencies that mining is the most valuable use of public lands once a valuable discovery has been made – and even while a prospector is actively pursuing a mineral discovery. It is well established that suction dredging is by far the most effective method today of locating and developing gold deposits along the bottom of a waterway, and the only practical way to do so. Therefore, the SEIR

should be balancing the impacts of proposed regulations to well-established federal values, rather than arbitrary social and economic values in a deliberate by DFG to marginalize suction dredgers.

It also appears, that rather than come forward with substantial evidence that dredging activity under existing (1994) regulations is “deleterious” to fish (under DFG’s definition), the SEIR has unreasonably changed the baseline that was used in 1994 to a “no dredging” scenario. This, even though the SEIR admits that the average number of suction dredge permits has been 3,650 per year since the 1994 regulations were adopted. The existing moratorium is a direct result of DFG’s Declarations that it had evidence in its possession which suggested a deleterious impact from ongoing suction dredging activity. Still, the SEIR does not contain evidence of a single “take” of any fish, much less that of a fish that has been granted special protection. There especially is no evidence of a deleterious impact upon an entire species!

Therefore, the Department’s “precautionary approach” which exists as the foundation of the proposed regulations is not supported by a properly-done CEQA Process. These regulations would prohibit suction dredging altogether across most of the public lands in California, and reduce dredge capacity so much in the remaining open areas that it would amount to a general prohibition of mining as a business. The proposed regulations would create very substantial losses to economic and longstanding social values in California while producing no demonstrable benefit to the public.

Mercury is not a problem!

Here is what the SEIR has to say about mercury:

Impact CUM-7: Discharge from Suction Dredging (Significant and Unavoidable): As detailed in Chapter 4.2 Water 1 Quality and Toxicology, the discharge and transport of total Hg (THg) loads from suction dredging of areas containing sediments highly elevated in Hg and elemental Hg is substantial relative to background watershed loadings. Additionally, the flouring of elemental Hg during the suction dredging process would result in an increased Hg surface area and increased potential for downstream transport of Hg to areas favorable

to methylation (i.e., downstream reservoirs and wetlands). Therefore, suction dredging has the potential to contribute considerably to: (1) watershed Hg loading to downstream reaches within the same water body and to downstream water bodies, (2) MeHg formation in the downstream reaches/water bodies, and (3) bioaccumulation in aquatic organisms in these downstream reaches/water bodies.

This impact summary appears to assume an adverse impact from "bioaccumulation;" but the relevant question is whether any adverse effects occur to the aquatic organisms (e.g., are "deleterious to fish"), or humans who consume fish. As set forth below, there is essentially no evidence of any adverse effect from such bioaccumulation and, more importantly, no credible evidence that suction dredging will have any appreciable impact on watershed Hg loading—other than a long-term benefit

As to the latter point, the SEIR relies mostly upon the conclusions of Charles Alpers of the USGS as a result of some work that he recently did near the confluence of Humbug Creek and the South Fork of the Yuba River in California. This was actually a BLMfunded project with the stated purpose of discovering if standard suction dredges can be used to effectively-recover mercury from submerged mercury hot spots. Apparently, thousands of pounds of mercury had been lost from the sluice boxes of one of California's largest historic hydraulic mines last century. Most of the lost mercury is assumed to have been washed down Humbug Creek into the South Yuba River along with the tailings from the mine.

As suction dredgers reported to BLM that they were finding pools of mercury in the South Yuba River below the confluence of Humbug Creek, after some further investigation, BLM and the California Water Resources Control Board, along with other entities, designated the area as a hazardous waste, submerged mercury hot spot. Further suction dredging in that area of the river was prohibited until BLM could determine how effective mercury recovery was going to be. This was the purpose of the study which generated the report from Charles Alpers of the USGS.

I personally have substantial experience in heavy metal recovery with the use of suction

dredges. Therefore, I was invited to participate in this study Several other experienced dredgers were also involved. We supplied the excavation tools, and we performed all of the dredging and digging for the Alpers project. Therefore, I have an intimate knowledge of what took place; and I know exactly why the conclusions made by Charles Alpers cannot reasonably be relied upon in the SEIR. It is my intention to draft a moredetailed rebuttal of the Alpers conclusions in a separate set of comments. But for the moment, I will present some very important facts.

The purpose of the study was to determine how effectively an 8-inch dredge with a standard recovery system would capture mercury. The study was to take place over a 2-year period. The first year (2007) involved a trial run using a 3-inch dredge. The main purpose of the trial run was so the USGS scientists could establish the best way to capture sediment and water samples off the back-end of the 8-inch dredge recovery system during the following year.

Dredging was performed using the 3-inch dredge during 2007. However, USGS did not establish any measurable increase in mercury in the captured sediments or water samples discharged from the dredge recovery system.

It did not occur to Charles Alpers and his team to measure the volume of excavated material so that these and future results could be quantified to the actual capacity of a suction dredge.

The following year, The California Water Resources Control Board informed BLM that they were prohibited from using any suction dredge within the South Yuba River. Since the 8–inch dredge could not be used, I suggested to BLM that I could provide a prototype, closed circuit suction devise (not a dredge under the definition of F&G Code 5653) that potentially could remove 100% of the mercury from a submerged mercury hot spot without any discharge back into the active waterway. Since we were not allowed to continue the study using a dredge, I switched gears into coming up with an alternative method of cleaning out the mercury from submerged hot spots.

Note: I made the mistake of assuming the ultimate purpose was to discover an effective

way of removing mercury from California's waterways. That is probably too much to expect out of government today.

When we resumed the study during 2008, Charles Alpers relied upon me to choose the two places along the South Yuba River where we would excavate material. This was because Mr. Alpers was relying upon my considerable expertise to excavate samples where elevated levels of mercury (heavy metals) were most likely to be present in the gravel. I chose one location out on a gravel bar in the middle of the South Yuba River. This was directly out from the confluence of Humbug Creek. I chose this location mainly because it was an ideal place to operate my closed circuit prototype.

I chose the second location where there was some exposed bedrock immediately downstream from the confluence of Humbug Creek. While we were not able to set up my prototype in that particular location, the site was likely to turn up the highest levels of mercury in the entire area.

No other dredge was used during this study except the 3-incher during 2007.

After digging a hole on the gravel bar, we put my closed circuit prototype to work. Mr. Alpers and his team made it clear this part of the program was not part of their study; that it was being allowed only for R & D purposes. We used the prototype for about an hour. Nobody timed the work, and there was no accurate measurement taken of the material which we excavated. The device utilized a suction nozzle to excavate material and water from the hot spot directly into a large plastic water tank. Water from inside the tank was recirculated by a motorized pump to provide suction at the nozzle. This created a closed circuit system whereby contaminated material and water could be sucked into the tank with zero discharge into the active waterway. There was no recovery system other than the water tank itself. Importantly, there was no dredge recovery system present. There was also no way to measure how many times the very same water in the tank was recirculated to excavate the contaminated material; perhaps hundreds or thousands of times. It would just be a guess. The purpose of this design was to capture 100% of the contaminated water and material within the closed circuit.

Improper Conclusion: In fact, the water from my closed system test appeared to be so

contaminated, USGS staff ordered special stainless steel containers flown in so they could send the water out by helicopter and dispose of it properly! It was mainly from these water samples which Charles Alpers later formed his conclusion that suction dredges may discharge mercury into the active waterway. But the water from my tank had been continuously used over and over again to excavate and capture 100% of the mercury from highly-contaminated material. Therefore, it is unreasonable to take water from a closed circuit system like this and make any kind of scientific estimate what might come off the back of a dredge system using a recovery system which only uses water one time (in a completely different way) to excavate material. This is atrocious science!

Improper Conclusion: Then Charles Alpers concluded that the levels of mercury captured from our second excavation could be used as a baseline for how much mercury might exist throughout all of California's waterways. Charles Alpers makes some estimations of how much mercury suction dredgers could potentially re-suspend elsewhere in California, based upon the amount of mercury that we excavated off bedrock, just below the source of mercury, in one of California's worst mercury hot spots? How scientific is that?

Improper Conclusion: Furthermore, Alpers related the potential statewide impacts to the estimated production yardage figures which Keene Industries (dredge manufacturer) publishes in their promotional material. Even though the USGS team stood by and watched my team excavate using a 3-inch dredge, they did not take the opportunity during the study to measure the volume. Therefore, Charles Alpers reached out to projected estimates from a promotional brochure? There are so many variables in play while dredging (make up of the streambed, speed of the river water, depth of the excavation, type of power jet, experience of the operator, etc), that there is no way Charles Alpers could use unproven information from a promotional brochure to make reasonable statewide projections in a scientific conclusion! But he did it anyway.

Improper Conclusion: Mr. Alpers suggests in his report that most mercury contamination at the bottom of California's waterways is locked in place by armored streambeds and should be left in place until some better method of recovery is developed.

However, any experienced dredge miner will tell you that annual flood events, especially the larger ones, naturally tear up armored streambeds and move the material further downstream. The fact that we find man-made objects underneath the armoring is testimony that streambeds are highly mobile:

4.1.2 California Hydrology and Climate: Typically, rain-on-snow events are of a higher magnitude and occur most frequently during the winter months, whereas the peak snowmelt-driven events are of a lower magnitude and occur in spring. This hydrologic setting creates a bimodal distribution of flood events i.e., there is a population of floods associated with snowmelt events, and a distinct population of floods generated from rain-on-snow events that occur, on average, once every 10 years.

Charles Alpers is very wrong in his belief that mercury is trapped forever beneath armored streambeds. How do you think the mercury and streambeds got there in the first place if they were not moved there by a storm event?

Charles Alpers' Conclusions are just one more example of a government employee who has allowed his personal political agenda get in the way of real science. We will be making a formal complaint about this to the USGS. Meanwhile, we insist that this SEIR should not rely upon the Alpers' Conclusions.

The SEIR is conspicuously silent on the peer-reviewed study data provided to DFG by the dredge mining community in the PAC meetings about how natural selenium within California's waterways prevents mercury from causing adverse impacts even if bioaccumulation does occur. Specifically, bioaccumulation of mercury has no adverse impact whatsoever on fish or those who consume them when the accumulation of such mercury consists of mercury bonded to selenium. This is because that bond isolates the mercury from further biological activity.

The leading study suggesting adverse effects on humans from mercury bioaccumulation was based on Faroe Islanders who consumed the mercury in whale flesh (not fish flesh) which contains lower levels of selenium.

While there is plenty of peer-reviewed study material which demonstrates that there is a continuous migration of mercury flowing down some of California's waterways, there is zero evidence suggesting that the levels have any relationship to suction dredge activity.

The SEIR also does not give enough weight to the Humphries Report (California Water Resources Control Board). Mr. Humphries used an older-model 4-inch suction dredge to recover 98% of the mercury from a confirmed mercury hot spot in California. The SEIR does not provide adequate acknowledgement that a 98% recovery rate is a positive impact; because suction dredging is the only activity within existence that removes any mercury from California's waterways.

Rather, the SEIR seizes upon Mr. Humphries' unproven assumption that the 2% of lost mercury was floured (broken down into particles too small for the dredge recovery system to catch) by the dredge. But Mr. Humphries has admitted that he performed no tests of the streambed material before it was sucked up to see if floured mercury preexisted there! His report also suggests that floured mercury preexisted in the streambed in areas that had not been suction dredged. Having substantial experience in this given area, I can tell you with certainty that it requires violence over an extended period of time to break mercury down to millions of microscopic particles. The 9-second ride through a suction dredge is not enough.

Therefore, the SEIR's conclusions that dredge flour some portion of the mercury, which then travels downstream to threaten the food chain is not based upon good science.

The SEIR does not acknowledge, based upon the survey results, that suction dredgers remove over 7,000 ounces of mercury (or more) every year from California's waterways. That amounts to 98,000 ounces during the 14 years we operated under the 1994 regulations!

Since California State agencies are doing nothing to remove mercury from California's active waterways, it is grossly irresponsible for your SEIR to point the finger at suction dredgers who are the only ones that are removing the mercury, at no cost to the taxpayers!

Adoption of the SEIR position would be fundamentally unreasonable in a context where the mercury is inevitably migrating downstream to areas where you believe it to be potentially harmful. There is no coherent analysis in the SEIR to suggest that, contrary to common sense, it is better to leave all the mercury moving downriver than to take action which removes at least 98% of it from the ecosystem!

Practical Suggestions

Governmennt Code 11340.1.(a): It is the intent of the Legislature that agencies shall actively seek to reduce the unnecessary regulatory burden on private individuals and entities by substituting performance standards for prescriptive standards wherever performance standards can be reasonably expected to be as effective and less burdensome, and that this substitution shall be considered during the course of the agency rulemaking process.

CEQA Guidelines 15204: FOCUS OF REVIEW: (a) In reviewing draft EIRs, persons and public agencies should focus on the sufficiency of the document in identifying and analyzing the possible impacts on the environment and ways in which the significant effects of the project might be avoided or mitigated. Comments are most helpful when they suggest additional specific alternatives or mitigation measures that would provide better ways to avoid or mitigate the significant environmental effects.

In view of the comments we have made above, we submit the following practical suggestions in an effort to assist the Department to modify its SEIR and proposed regulations so that they adequately mitigate real environmental concerns while placing less burden upon the small businesses and property owners that are associated with our industry.

High-banking is not suction dredging: We agree with the following policy statement that you have acknowledged in several places within the SEIR:

6.2 Alternatives Considered and Dismissed: In general, these provisions of the Fish and Game Code provide that CDFG's permitting authority is limited to in-stream use of vacuum or suction dredge equipment within any river, stream,

or lake in California. As such, CDFG's regulatory authority under this Program does not extend to other methods of placer mining or other activities that may be associated with suction dredging which occur in upland areas.

The following is a list of activities that are not considered suction dredging subject to CDFG's permitting authority under Fish and Game Code section 5653, subdivision (b)…

Use of a high banker or sluice box above the ordinary high water line and above the current water level, where aggregate is vacuumed into the highbanker or sluice box from a gravel deposit outside the current water level of a river, lake or stream but which may be wetted by a water pump. This method is often referred to as booming;

Processing of materials collected using a suction dredge, in upland areas outside of the current water level of a river, stream or lake;

Use of suction dredge equipment (e.g. pontoons, water pump or sluice box) on a river, stream or lake where the vacuum hose and nozzle have been removed;

Sluicing or power sluicing for gold when no vacuum hose or nozzle is used to remove aggregate from the river, stream or lake; and

Use of vacuums (e.g. shop-vacs) and hand tools above the current water level.

Required identification in the permit application: The proposed regulations should allow for a foreign passport or driver's license be used to provide identification for visitors from other countries so they can apply for nonresident suction dredge permits. Otherwise, California will be discouraging the many visitors which we already receive that like to do their gold prospecting here.

DFG should not limit the number of suction dredging permits: We do not see reasonable justification within the SEIR for the Department to limit the number of

suction dredging permits in the final regulations. This is particularly because there is no evidence presented that 14 years of dredging activity under the 1994 regulations ever harmed a single fish, much less threatened the viability of an entire species. We also do not believe that a state agency has authority to impose a generalized prohibition to suction dredge mining on the public lands. As noted above, mining within national forest lands is already subject to individualized ranger scrutiny and there is no basis whatsoever for limiting the number of permits for operations within national forest boundaries. Non-arbitrary limitations, based upon local conditions, may arise through the federal regulatory process and/or on site inspections by DFG staff.

Your proposed "precautionary measure" of limiting the number of permits would amount to a prohibition upon any person desiring to prospect for or develop viable gold deposits with the use of a suction dredge after the limit is reached, without providing a reasonable environmental justification to the person. What if he or she wants to operate the dredge in some part of the state where there would not be a deleterious impact? A limit on permits would prohibit the person from using a suction dredge without a viable reason.

Allowing additional dredge permits after site inspection: Having said that,

in the event that the Department decides that you must place a limit on the number of permits issued under a statewide blanket permitting program; once the limit is met, rather than prohibit additional dredge-mining, the Department should issue additional permits as long as no deleterious impact (by DFG's definition) can be determined though a site inspection. This would include consideration of permit applications to dredge with larger-sized dredges that are not allowed in a statewide permit, or in areas (or time periods) that are otherwise closed to dredging.

Said another way, in the event that DFG decides that there must be (reasonable) limits set in a blanket statewide permit program that will allow for most suction dredgers, we do not believe DFG has the authority to declare a wholesale prohibition to dredge mining in the other vast areas which exist on the public lands that would not be covered by the blanket permit. That would be an unreasonable closure. DFG has a site inspection

mechanism which allows you to consider more individualized impacts in areas, and during time periods, when and where dredging would not be allowed in a statewide permit.

There needs to be a place on the permit where a site inspection can be signed off: There should not be some bureaucratic delay involved with signing off on a site inspection when the DFG official can identify no problem (deleterious impact). During my own past site inspections, the local DFG officers immediately signed off on my application and gave me the okay to proceed.

If there is some uncertainty, there must be a time limit in the regulations whereby the application should be allowed or disapproved. The regulations should include what due process is to be allowed the dredge miner if he or she decides to appeal a local denial.

Prior existing rights on permit acquisition: There must be an allowance for prior existing rights. This is mining, not recreational fishing or hunting; and it is in many cases conducted as a matter of right under federal statutes, on federally-protected mining properties. Since work was already active to eliminate (and therefore discourage) dredging during the 2009 season, prior existing rights should at least extend to the 2008 season. Some in our organization believe prior existing rights should extend back five seasons. Otherwise, dredgers who have already invested in property, equipment and even mining claims could potentially lose their prior existing right to work their mine or other mining opportunity (mining club they paid to join so they would have access to mining property).

In this case, DFG would send out renewal notices and allow some kind of due process before a prior existing permit would be returned to the pool to be made available to someone else. We suggest, once prior existing rights are taking care of, it might be more equitable to make the remaining permits available in a drawing, rather than first come, first served.

Statewide permits, if limited, should be transferable: If there is going to be a limit placed on the number of permits allowed under a statewide blanket program, the permits should be transferable. This would allow a dredge miner to develop a mining

property and then transfer it to someone else who could also acquire the right to suction dredge on the property. Otherwise, miners will make the substantial investment into developing a viable mine and then not be able to transfer ownership to someone new who will be able to dredge it, therefore losing some or most of the value.

The dredging permit could be signed over like the title on a vehicle. This would allow new generations of prospectors to purchase an existing permit from someone else in the event of a cap on permits.

DFG should not further-limit the size of dredges under the statewide permitting program: The only justification we can see in the SEIR for reducing dredge sizes in the proposed regulations is your "precautionary approach." As we have explained above, there is no basis for using such an approach at all, much less in this context. It is patently illegal under the CEQA guidelines, which state, among other things, that "there must be an essential nexus (i.e. connection) between the mitigation measure and a legitimate governmental interest" and "the mitigation measure must be 'roughly proportional' to the impacts of the project". 14 CCR 15126.4(a)(4). Obviously, "mitigation measures are not required for effects which are not found to be significant" (id. § 15126(a)(3)), and the SEIR presents no evidence that dredge sizes allowed under the 1994 regulations created a deleterious impact upon fish.

It is important to understand that you are proposing to undermine the effective capacity of gold mines all across California. As outlined in comments above, reducing capacity will effectively undermine the economic viability of many properties, and future economic activity all across the state.

It would be one thing if you could point to some evidence showing that dredge size limits under 1994 regulations have caused real problems. But you have not done that. The problem with your approach is that there is never any end to it. When I began dredging in California, it was easy to obtain a permit which would allow me to operate a 12-inch dredge along the Klamath River. Then the limit was reduced to an 8-inch dredge. Now you are proposing to reduce the limit to a 4-inch dredge. Yet, as many times as the

department performed site inspections on my 12-inch operation, they never expressed any concerns about harmful impacts! No concerns have been expressed about harmful impacts from the many 8-inch dredges that have operated along the Klamath River over the past 30 years. No concerns have been expressed about the 5 and 6-inch dredges operating in the smaller tributaries, either! So without providing any specific details of why existing capacities are harmful, you are proposing to reduce them 8-fold in many places. Why?

Using this same approach, you are likely to reduce us to mining with teaspoons in the next set of proposed regulations! You must try and understand that not everyone receives a check in the mail from the government. Some of us actually have to create more value than we consume. Since those of us who produce the wealth (which supports those of you in government service) must be allowed to get on with it, you should stop trying to slow us down or kill us off when there is no benefit to the public that you serve. Please try to look through your narrow view of protecting the world (from us), and stop trying to impose unreasonable restrictions upon us.

We suggest that DFG does not have the authority to step onto the public lands and impose a permit restriction upon active mines which would effectively reduce our productive capacity without also coming up with specific reasons why existing capacities are creating a deleterious impact upon fish. Therefore, we strongly encourage the Department to leave nozzle restriction sizes as they exist in the 1994 regulations.

Important note: To avoid unreasonable and unnecessary conflicts between dredgers and DFG field staff, the regulations must allow a wear tolerance factor on nozzle restrictor rings. The reason for this is that the standard material which is available to manufacture these rings can be found in 4-inch, 5-inch, and 6-inch inside diameters. If the statewide limit is a 6-inch ring (1994 regulations), a 6-inch ring is what will be used. Some reasonable allowance must be written into the regulations so that the dredgers and wardens are all on a level playing field. The ring begins wearing with the first rocks that are sucked up. At what point does it need to be replaced? We suggest 3/8 of an inch (diameter) is reasonable.

Allowing larger-sized nozzles after site inspection: If a dredger wants to operate a dredge having a larger nozzle than is allowed under a statewide permitting scheme, the Department should allow the activity as long as no deleterious impact (by DFG's definition) can be determined though a site inspection. We do not believe DFG has authority to make a wholesale prohibition upon the use of some particular type of mining equipment (suction dredge of any size) being used on the public lands. Dredge miners should be afforded due process, and should be allowed to proceed as long as no deleterious impact is determined by an on site inspection

DFG should not further-limit the places where dredging is allowed: We suggest that DFG does not have the authority to step onto the public lands and impose a prohibition upon suction dredging across vast areas. This is very discriminatory, since any kind of mining or other activity may submit an application to proceed, and would be afforded reasonable due process in the very same areas where the proposed regulations would prohibit suction dredgers.

At the very least, in order to prohibit a suction dredge from being operated in any given location, DFG must be able to demonstrate a deleterious impact upon fish.

Therefore, we strongly encourage the Department to leave areas open to suction dredging as they exist within the 1994 regulations. Gold miners should be afforded due process, and should be allowed to proceed in areas which are not allowed under any statewide permit, as long as a site inspection cannot turn up evidence of a deleterious impact.

Reduction of our existing dredging seasons is unreasonable: Once again, we do not see that the SEIR contains evidence of a deleterious impact upon fish to impose a reduction of existing dredging seasons. This proposal is supported only by your "precautionary approach." Just as one of many examples, I have been dredging along the Klamath River since 1983. Existing dredge regulations, and the regulations we were held to prior to 1994, have always allowed year-around dredging on this river. The colder off-season months and wet season already naturally-limit the amount of dredging activity between October and June. In all the time I have been involved with this river, there has never been a single example that dredging has ever harmed a single fish during

the months which the proposed regulations want to close the river to suction dredging. Your desire to close the river to this productive economic activity (suction dredging) for 9 months out of the year is arbitrary and unreasonable!

Indian, Thompson and Elk Creeks (Siskiyou County) are another example. During 25 years of overseeing our extensive dredging properties on these creeks in cooperation with local U.S. Forest Service (USFS), DFG and Karuk fish biologists, there has never been a single instance brought to our attention of any harm to any fish or their habitat. So why do you want to completely eliminate productive economic activity by Americans in those areas?

Furthermore, the SEIR does not acknowledging that we have already worked out an agreement with USFS and Karuk fish biologists to keep dredges away from the refugias and limit the number of dredges to 3 per mile on the creeks and 10 per mile along the river. Your proposed regulations are attempting to reach out onto the public lands and prohibit the use of suction dredges altogether, or for substantial parts of the year, on these very same waterways without any resulting positive benefit to the people of California

We strongly suggest, except for those areas where you can demonstrate that a deleterious impact has been created under the existing regulations, that you leave our dredge seasons as they have been since 1994.

The proposed 3-foot rule is unreasonable: We view this as just another overreach of DFG upon the public lands based upon your “precautionary approach.” The SEIR has not presented any real evidence that dredging within three feet of the streambank has ever harmed a single fish.

There are also practical difficulties with this proposal. Why prevent someone from dredging within three feet if the side of the river is made up of bedrock? This prohibition would also prevent beginners, non-swimmers or children from starting closer to the shore where water is shallower and/or safer.

There are many places where viable gold deposits exist out in swift water that would not be accessible unless a dredger can begin an excavation closer to the shore to get beneath

the strong current. If the proposed regulations would also prevent the dredge from floating or dropping tailings within three feet, it will be nearly impossible to tie off dredges along the shore either when they are operating or sitting idle. Prohibiting dredging within three feet of the edge of the river will eliminate a significant portion of the operational value (perhaps even all of it) on some dredging properties. And to what gain?

Rather than impose an unreasonable 3-foot prohibition, we suggest that DFG and the mining community would be better served with some expanded language describing what the "bank" is (in relation to dredge mining) that we are not allowed to dredge into or undermine within the existing regulations. With rising and lowering water flows (sometimes daily) in some waterways, there is a lot of confusion about this with dredgers and wardens alike. For example, is there a "bank" in relationship to a gravel bar out in the waterway that is partially out of the water? What about a bar alongside the waterway that is submerged during the spring, but emerges more and more out of the water as the dry season evolves?

Suction dredge regulations should not impose the requirement of

Section 1600 Agreements: We do not believe DFG has the authority to impose a Section 1600 Agreement requirement upon a gold dredger unless the surface disturbance rises to the level which triggers Section 1600 of the Fish & Game Code.

F&G Code 1602: (a) An entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake… (emphasis added).

Section 5600 already allows a site inspection mechanism for the Department to determine if a dredging program is deleterious to fish. Therefore, also imposing a Section 1600 requirement upon dredgers who wish to operate a larger nozzle than is allowed under a statewide permit, when there is little or no chance the dredging program will create a substantial impact upon the bed or bank of the waterway, is arbitrary and discriminatory

against suction dredgers. Nobody else in California is required to pursue a Section 1600 permit until their activity rises to the level of requiring one.

We have never heard of a case where local DFG officials expressed concern about a potential Section 1600 violation when the dredger was operating within the 1994 regulations.

We all know how long these Section 1600 Agreements can take to work out. They also cost real money! Why impose that upon a dredge miner whose activity has not created a substantial impact upon surface resources? This is bad policy. There is nothing in Section 5600 which allows DFG to place a Section 1600 Agreement requirement upon someone merely because the person applies to the Department to operate outside of a statewide dredge permitting process. Forcing dredgers to pursue a 1600 Agreement is terribly wasteful of creative resources and will stifle investment into productive economic activity.

Government Code 11813: The Legislature finds and declares the following:

(a) Waste and inefficiency in state government undermines the confidence of Californians in government and reduces the state government's ability to adequately address vital public needs.

(b) State government, in many instances, is a morass of bureaucratic red tape and regulations that ultimately stifle economic revitalization and further alienate the people the agencies were created to serve (Emphasis added).

This also applies to the use of power winches. Gold miners can use a power winch anywhere on the public lands without the requirement of pursuing a 1600 Agreement, unless our program creates a substantial impact upon surface resources that are associated with a waterway. But the proposed regulations would prohibit the use of the same winch if a dredge is involved unless we also pursue an Agreement – even if there is not a substantial impact. Why would you do this?

This was already explained to you during the PAC meetings: In some dredge holes, a power winch provides the only safe and efficient means of progressing either when a rock

is too heavy to move by hand, or when it cannot be rolled over other rocks that are in the way. We are discussing how heavy something is to move. Each person is different, but everyone has a limit. Some people are disabled. Some heavy rocks can exist up off the bedrock, and must be removed in order to avoid a very serious safety issue. All of this normally takes place down below the surface of the streambed where the result (of moving the rock 4-to-10 feet) will not have any impact upon the waterway above. Furthermore, from looking at the surface of a streambed, there is no way for a dredge miner to determine in advance if boulders exist down below that will be impossible to move out of the way without some mechanical assistance. With a prohibition on winches, or the requirement to go through yet another time-consuming regulatory process, many dredgers will be forced to abandon dredge projects that otherwise would be productive. The prohibition on the use of power winches in your proposed regulations would result in stopping progress on some dredge programs, and also force operators to take unnecessary risks.

Please note that nearly all rocks of any size can be moved down beneath the surface of a streambed in dredging which will not cause any important impact upon the water flows or the surface of the bed. You guys are overreaching when you believe you must regulate the movement of every rock in the river! How can you believe that Americans can possibly be productive if we have to ask the government for permission on so many unimportant things? Do you really want to tie up the Department's limited resources managing the rocks that need to be moved by dredge miners?

We do not believe DFG has authority to reach onto the public lands and impose a prohibition upon power winches anywhere, at least until the Department can demonstrate that a substantial impact is happening. The "precautionary approach" will not work here, either!

Imposition of the 3/32-inch intake requirement on pumps is unreasonable: Do you really want your wardens out there measuring screen sizes on our pump intakes, when there is no deleterious impact on fish in the first place? In 30

years of dredging, having likely been present on more dredging operations across California than anyone else alive, I have never witnessed or heard of a single occurrence where these intakes did not adequately prevent fish from being sucked into the pump, or even trapped against the screen.

The 1994 regulations already prohibit operation at times when fish are too small to swim away from pump intakes as they are already being manufactured.

The two dredge manufactures who sell the most units in California are Pro Line and Keene Industries. Pro-Line manufactures a pump intake with 3/16th inch holes. Keene manufactures intakes using 15/64th inch holes. Therefore, the proposed regulations would place nearly every dredge in California out of compliance, and require dredge manufacturers to completely retool or resource their material, all for zero gain to the public benefit. The SEIR does not take account of the obvious adverse impacts arising from placing an entire category of mining capital stock out of regulatory compliance.

We suggest, if you want to make sure that fish are protected from dredge pump intakes, that you adopt a hole size that is bigger than larger of the two holes that are being used on most dredges in California.

Allowance of locations on permit applications must be more broad: Your proposed regulations, as presently written, require dredge miners to be very specific about where we intend to mine. This would be substantially burdensome to dredge miners wishing to sample multiple properties which belong to mining associations like ours. Our organization makes more than 60 miles of the Klamath River available to our members. Some of our properties extend three miles or longer along the river.

To save limited time, most members obtain their suction dredge permits before they arrive (especially if there is going to be a cap on the number of permits issued), but they do not know where they will decide to dredge on the river until after they come and take a look at the many options.

We already have an agreement with USFS to prevent more than 10 dredges per mile on the river or 3 per mile on the creeks. So any concern about over concentration is already being managed. Therefore, the requirement that dredgers notify the Department of the

exact place they intend to work is not reasonable.

Since the existing regulations already set the times and places where dredging is allowed, we do not see any practical reason to force dredge miners to inform DFG exactly where they are dredging – and then hold them to the location unless the permit is amended. This was never done in the past. Where is the deleterious impact?

In the event that DFG decides that locations are needed on the application, we strongly suggest you broaden the requirement to identification of the waterways which the person intends to work. This would at least allow dredge miners some flexibility to move around in search of gold without having to make an extended and expensive trip to the closest Department license sales office (which could be more than 100 miles away) each time they want to move around the next bend in the river.

The proposed dredge marking system is not workable: Suction dredges are not boats. The pontoons typically are of molded Marlex floatation which will not allow paint, tape or glue to adhere. If you screw something into the Marlex, then you may incur leaking or perhaps structural problems. If you place a sign on the dredge, it is either in the way or is likely to fall into the river and float away. By “in the way,” we mean blocking the dredger’s ability to remove plug-ups or manage the motor (especially fueling).

Since the average size of dredge during 2008 was less than 4-inches, and there are many dredges in existence larger than 4-inches, there must also be many dredges smaller in size than 4-inches. We challenge the Department to come up with any practical way of attaching a sign meeting your proposal to a 2-inch, 3-inch or one of the mini-4-inch dredges; it is totally impractical!

We also question how this proposed imposition has anything to do with the language of Section 5653, or has anything to do with preventing a deleterious impact upon fish? Do you really want your wardens out there measuring the size of numbers on suction dredges?

In the event that DFG decides it must have an identification number on the dredge, we strongly suggest you eliminate the 3-inch number requirement and allow the numbers to

be marked on both sides of the dredge; either on the pontoons or on the sluice box, but only if it is possible to do so. This would allow for smaller numbers in the case of smaller dredges.

Fuel should be allowed within 100 feet of the waterway if kept within a water-tight container or a boat: California already has plenty of laws on the books that prevent us from spilling gasoline into the water. Now you want miners and wardens out measuring the distances between our fuel cans and the waterway? When does the overregulation stop?

Here is another place where we believe DFG is reaching out far beyond your authority to impose a prohibition on the public lands; specifically to prohibit the placement of a can of fuel within 100 feet of the waterway only if there is a suction dredge involved.

No other activities within California are held to this proposed 100 foot regulation! Millions of boaters all over California are allowed to keep fuel safely in their boats.

The truth is that the more you have a dredge miner tromping up and down the embankment (in wet-suit and bulky boots), the more you will have him disturbing all of the other values in the riparian zone that you believe are so important to protect elsewhere in the SEIR, and the more you increase the chances that the person will fall down and spill the fuel!

There are plenty of effective ways to prevent fuel from leaking into the waterway without making a dredge-miner walk 100 feet up the embankment. At the very least, fuel can be placed inside of a boat, or inside a sealed catch tub of some kind up on the embankment to prevent leakage. These catch tubs are already routinely part of a dredge program to assist with cleanup of concentrates.

We suggest, rather than attempt to impose a regulation that ultimately will have your wardens out in the field pacing the distance to fuel cans (even when they are placed in a safe place), that you make some helpful suggestions in your Better Practices handout.

Disturbance of mussel beds: This is an unreasonable proposal that is not consistent with preventing a deleterious impact to a species.

Some rivers are so inundated with muscles, that this imposition would amount to a suction dredge prohibition in a large part of the waterway.

Are you proposing that every dredge miner must now do a survey before dredging to make certain that there is no place within 30 feet downriver where more than 40 muscles per square yard exist? How unrealistic is this? Are you also going to have your own wardens out underwater counting mussels?

What about a dredge miner who makes a valuable discovery in the river, and is in the process of developing it when he comes up into a mussel bed containing 42 per square yard? What then? Is the State of California going impose a criminal citation for sucking up muscles? Or is the State of California prepared to buy his gold mine in order to save the muscles for the public benefit? Or is the State of California going to require an expensive and long-delayed study and perhaps require licensed experts to replant the muscles somewhere else? Where does all this nonsense stop?

What is to prevent you guys from issuing a regulation against killing ants if there are more than 40 per square yard? What's next?

We strongly advise DFG to withdraw from the notion that you should be prohibiting dredge mining to protect any species (from extinction as a result of the dredging) which is not afforded special protection. Because you are taking away the rights of Americans to be productive. There is a cost for this. You are also going to experience this when the State no longer has any money to meet your pension obligations

Rather than impose a criminal penalty for sucking up or dropping tailings near mussels, we suggest you discuss them in your Better Practices handout.

Returning the site to the pre-mining grade to the greatest extent possible: It is clear that whoever thought this up had zero experience in suction dredging!

Please allow us provide some insight: Sampling is the process of making multiple sample holes in an attempt to locate a high-grade gold deposit (business program). Sampling is a process, not a single hole. Sometimes a dredge miner makes a discovery, but wants to continue sampling to determine the length and width of the deposit, or to see

if he deposit might provide better results that he can develop first. Your proposal would require him to fill each hole, even if he is not finished there.

Nearly always, once a discovery is made and defined, an experienced dredge miner drops further downstream doing more short tests in an attempt to find the lower-end of the gold deposit. Then he begins the development project there so tailings will not be dropped on top of the deposit and moved again.

Sample holes are not filled in, because the prospector may need to go back and take another look! Your proposal on this seeks to manage the way a mining operation is done. Even the federal agencies have no authority to manage a mining program! But you would have your wardens out there writing criminal citations to a serious dredger that is attempting to trace down a mineral deposit with several open excavations? This proposal proves that DFG does not understand the mining process that you are trying to regulate, and that you have not seriously considered the input from the mining community, especially during the PAC meetings.

Here is the reality: It is entirely impractical for you to believe we can somehow take our dredge tailings and refill the holes. There are water currents involved which prevent the material from being shoveled and carried 30 feet upstream, or even dredged upstream. Furthermore, according to the SEIR's extensive information in Chapter 4; no matter what we do, the light gravel (tailings) will remain unstable until the next storm event places them behind a natural obstacle in the waterway.

Ample evidence shows that salmon are less likely to place their redds in a heaped tailing pile than they are on a pre-mining grade which is unstable. So your proposal will actually create more harm than good! While it occasionally happens, there are very few cases on the record where salmon have spawned in a heaped tailing pile, because they seem to have an instinct that the pile is unstable. So wouldn't it be better to leave it alone and allow the next storm event to settle things where they belong?

On this subject, the SEIR does not contain enough acknowledgment about the proven positive impacts that result from suction dredging. It is well established that these tailings eventually wash downstream to create ideal spawning habitat where it may not

have existed before. In addition, it is well established that the holes we leave behind create cool water refuges where salmon and other fish hold up during the warm summer months. The piled cobbles create protected habitat where fingerlings are able to hide from predators. And you would have us destroy these improvements right at the time when the fish need them the most? Why is that?

It is well established that the river will overrule any reclamation efforts which dredgers attempt and return the waterway exactly the way it is supposed to be during the next flood event. It is perplexing why the Department would have us bury the holes which are helping fish in the meanwhile.

Furthermore, since it would be impossible to move tailings and rocks upstream in a swift current, where would you have us source the material to fill in our holes? The regulations already prevent us from importing material off the bank. The only other source would be from upstream in the waterway. But then we would be disturbing other habitat (and mussels) from another part of the river that the SEIR has expressed so much concern about.

We strongly suggest that you eliminate this whole idea from your regulatory proposal about managing the way that dredge miners prospect and mine. Because you are not being realistic. This would be a subject better suited to your Best Practices handout.

Dredge mining between one half hour after sunrise to sunset: You would attempt to prohibit mining on the public lands after sunset? Your authority is limited to preventing a deleterious impact upon fish!

We suggest you drop this from proposed regulations and leave it to local authorities where it belongs.

Thank you very much for giving careful consideration to our comments and suggestions!

Sincerely,

Dave McCracken, President

New 49’er Prospecting Association

--- On **Mon, 5/9/11, Steve Kleszyk <*ratled@sbcglobal.net*>** wrote:

From: Steve Kleszyk <ratled@sbcglobal.net>
Subject: Comments regarding SEIR and Proposed Regulations for suction dredge
To: dfgsuctiondredge@dfg.ca.gov
Date: Monday, May 9, 2011, 11:07 PM

Mark here are my comments regarding SEIR and Proposed Regulations for suction dredge. I will try and fax them this evening also.

Respectively
Steve Kleszyk
475 Sheridan Circle
Livermore, CA

Mark Stopher
California Department of Fish and Game
Suction Dredge Program Draft SEIR Comments
601 Locust Street
Redding, CA 96001

Please take notice that I am the owner of the Black Krim claim, located on Elk Creek in Siskiyou County (Bureau of Land Management CAMC #292073). I have reviewed your proposed regulations for suction dredging, which appear to forbid any and all suction dredge mining on my claim.

I am writing to commend you and show my support for these proposed regulations. Not only do I practice mining on my claim without the use of suction dredging practices, I also reside on private property adjacent to my claim and see the negative effects on the fish and water caused by dredge mining on claims upcreek from my home and claim location. Salmon populations are clearly in decline and I and my fellow claimants feel strongly that this cornerstone species of our ecosystem deserves all the help we can give them in maintaining an existence here in the Klamath watershed.

Thank you very much for taking the time to review my comments. I am fully in support of the ban on suction dredge mining on all tributaries and the mainstem of the Klamath River. Best of luck on your work in getting approval for these regulations.

Sincerely,

Rachel Krasner

May 9, 2011

Sent Electronically and to be Placed in Comments Box at 5/10/11 DFG Meeting

Attention: Mark Stopher
Environmental Program Manager
California Department of Fish and Game
601 Locust Street
Redding, CA 96001
mstopher@dfg.ca.gov

From: Craig A. Lindsay
President, North Fork Dredgers Association
14 Lourdes Court
Sacramento, CA 95831
916-813-0104
craig.lindsay@comcast.net

Subject: Incorrect Application of Computer Generated CWHR Species Distribution Maps Used to Restrict or Eliminate Dredging on Specific Waters

Dear Mark,

The definition of range or distribution maps from the DFG's website is that "range maps are designed to support the computerized species-habitat relationships database models in the CWHR System" and that they "predict presence of and habitat suitability for 694 terrestrial vertebrates based on geographic distribution, relationships to habitats and stages, seasonal use patterns and presence of habitat elements.
In other words they are predictive models and consequently represent only potential habitat NOT actual species distribution maps showing where any given species is to be found.
The use of the CWHR species distribution maps to eliminate or temporaly and physically restrictict suction dredging is a totally incorrect and inappropriate application of a software-modeling tool not intended for this purpose. This conclusion is based on several key factors:

#1 The granularity (resolution) of the software program is too course (polygon cell size is too large) to precisely identify a specific stream in a given watershed and assign a use classification correctly, especially since it is based on GIS maps at 1:1,000,000 or 1:250,000 scale. Yet in Chapter 2 of the DSEIR due to this whole rivers, streams and their tributaries are assigned use classification A and are consequently closed to dredging. The DSEIR is using a sledge hammer to protect critical habitat that more appropriately needs the attention of a micro-scalple.

#2 The input data used for generation of the CWHR range distributions maps are user selected and subject to the biases of the individual inputing data into the CWHR model. In additon, the majority of the maps are outdated, for example the Yosemite Toad, Black Toad, Cascades Frog and the Arroyo Toad are all from 1998, the Foothill Yellow legged frog is from 1995 and the most current is the "Mountain" Yellow legged Frog *(Rana sierrae)* remapped in 2008. The CWHR System distribution range models used to generate the majority of the distribution maps are not current and do not reflect conditions on the ground in 2011. Extirpation has dramaticaly increased in the last 10+ years due to multiple other

factors, non-native fish predation, grazing, fungal infections, climate change, pesticides, increased UV exposure and habitat distruction, all significantly and negatively affecting extant populations.

"These frogs *(R. sierrae)* have declined dramatically despite the fact that most of the habitat is protected in National Parks and National Forest lands. A study that compares recent surveys (1995-2005) to historical localities (1899-1994; specimens from the Museum of Vertebrate Zoology and the California Academy of Sciences) found that **92.5%** of populations have gone extinct (11 remaining out of 146 sites; Vredenburg et al. 2007)."

"Since 1993, my field crews and I have conducted extensive surveys for foothill yellow-legged frogs in California, visiting 804 sites (in 40 counties) that had suitable habitat within the historical range. We found at least one foothill yellow-legged frog at 213 of these sites (26.5% of sites), representing 28 counties. (Fellers 2005) "

The DSEIR is proposing to eliminate dredging on multiple stream/river courses that have no action species amphibia in them to protect! The mere fact of prohibiting dredging on many of these waterways will not reintroduce new amphibian populations; there are no extant populations to re-colonize from. And it is highly unlikely in today's economic environment that any effort will be made to artificaially reintroduce extirpated populations.

#3 The underlying assumptions and inaccuracies of the CWHR modeling tool are not stated in any of the DSEIR documents. In additon, the input data used for generation of the CWHR range distributions maps are user controlled and subject to the biases of the individual(s) inputing data into the CWHR model. The information from the distribution maps provided in the DSEIR is falsely presented as fact. When in reality it is highly subject to errors.

From the DFG (personal communication, e-mail, 4/29/11):

"the range map is only meant to show the limits of distribution of a species in California. It is coarse and statewide and, by design, errs on the side of overestimating."

From Loo & Vindum (1999):

"In general, the *large-scale* disribution of amphibians and reptiles in California is fairly well known. However, our knowledge of species distribution surprisingly lacks specificity when analyzing the herpetofauna at local levels. …..Most range maps only show the generalized species distributions. Local species distributions closely linked to topography, local climate, edapphic factors and the like cannot be expected to be properly reflected.
Because large-scale biological inventories are financially prohibitive , habitat model are constructed to *predict* species compositions. Howell and Barrett (1998) test predictions of the CWDR System in coastal scrub and annual grassland habitats in California. In both habitats samples,the CWHR predicts more species than the survey work found. For the habitats combined, CWHR predicts the three amphibians and 17 reptiles species. Their sampling detects only 50% of the predicted species (one amphibian and nine reptile species). Recent fieldwork, thus, brings into question the reliability of their model, quite apart from the lack of hard data."

So using the CWHR software, even in the hands of competant research scientists predicts a greater numbrer of species than are actualy resident at the site being mapped. In the above example, only one of three amphibian species was present, 33%. The CHWR System software does not have a great enough predictive value to used to close down whole streams and rivers.

Even if the software had the necessary predictive value required, the serious decline in frog populations have not been taken into account;

If however, the DSEIR was constructed by the contractor or sub-contractors using these distribution maps to close down a maximum amount of streams by inappropriately using amphibian action species this approach becomes clear.
Let use *Rana sierrae*, the Sierra Nevada Yellow Legged Frog as a specific example.

From Knapp (2003):

"R. muscosa (sierrae) in the Sierra Nevada are genetically distinct from frogs in southern California (Macey et al. 2001) and occupy very different habitats (lakes, ponds, and occasionally streams vs. exclusively streams, respectively). This paper focuses solely on *R. muscosa (sierrae)* in the Sierra Nevada, where historically this species was a common inhabitant of lakes and ponds at elevations of 1400–3600 m (Grinnell and Storer 1924, Zweifel 1955). *R. muscosa sierrae)* is highly aquatic, with adults over wintering underwater and rarely found more than a few meters from water during the summer active season (Bradford 1989, Matthews and Pope 1999). In addition, the aquatic larvae require two or more summers to develop through metamorphosis. *R. muscosa (sierrae)* larvae and adults are therefore restricted primarily to distinct habitat patches (lakes and ponds) (Bradford et al. 1993)."

The preferred habitat for *R. sierrae* is not streams but lakes and ponds. In addition, the larvae need two or more summers to mature and prefer ponds or lakes, not streams. So dredging in streams will have no effect on the life cycle of the population in the vast majority of instances.

From the DFG website:

"Rana sierrae, the Sierra Nevada yellow-legged frog (Vredenburg et al. 2007). Elevation range in the Sierra extends from 1370 m (4500 ft) to over 3650 m (11980 ft)"

Nowhere in the DSEIR is the elevation of a waterway elevation mentioned for *R. sierrae.* Also, no mention is made of the streams that are below 4500' in elevation. As an example, Lights Creek, Plumas County is at an elevation of 3500" yet the action species is the SNYLF and is assigned a use classification of A, seemingly an arbitrary and capricious application of this action species to unilaterally shut down dredging in Lights Creek.

Although this species *R. sierrae* is a potential candidate for protection it is NOT listed as threatened at this point in time. Neither the DGF nor its contractors has any authority, legal or otherwise to proceed as if it were threatened. Yet the proposed DSEIR is using *R. sierrae* as a bludgeon to close multiple streams to dredging.

SUMMARY:

#1 The CWHR modeling software is an incorrect tool and inappropriate tool for use in deciding a use classification for any given waterway.

#2 Its imprecision and the inherent overestimation of species negate any value for action species restrictions.

#3 Distribution maps are dated and do not factor in current extirpation data. The proposed DSEIR protects habitat with no known amphibia to protect.

#4 As one example, the arbitrary and capricious application of an action species, *R. sierrae,* as if it were a threatened species, to incorrectly apply “A” use classifications to multiple streams.

Thank you for your attention and corrections to the DSEIR. Until more accurate and precise tools are developed, actual field surveys occur of the mentioned amphibians and better data is provided, all of the following non-listed amphibia need to be removed as action species: these include the Cascades Frog, the Foothill Yellow Legged Frog, the Sierra Nevada Yellow Legged Frog and the Yosemite Toad.

Sincerely,

Craig A. Lindsay
President, North Fork Dredgers Association

cc: Dave Marks, Don Robinson, Ray Budowich, Troy Bochus, Pat Keene, Jerry Hobbs, Dave Readacker, Eric Rasbold, Pioneer Mining, Rick Solinsky, Eric Maksymky

May 9, 2011

Sent Electronically and to be Placed in Comments Box at 5/10/11 DFG Meeting

Attention: Mark Stopher
Environmental Program Manager
California Department of Fish and Game
601 Locust Street
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mstopher@dfg.ca.gov

From: Craig A. Lindsay
President, North Fork Dredgers Association
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Subject: Incorrect and Inappropriate Use of Certain Action Species to Arbitrarily Apply Use Classifications Restrictions

Dear Mark,

There are multiple waters that are incorrectly assigned use classification A in the proposed DSEIR. They are classification is based on incorrect, misrepresented and misapplied action species

Cascades Frog – *Rana cascadae*

From DFG website: "In California, the cascades frog is found in two locations, namely Siskiyou Co. and further south near Lassen Peak. Its elevational range extends from 230 m (750 ft) to 2500 m (8200 ft) (Jennings and Hayes 1994). This species can be found in water and surrounding vegetation in mountain lakes, small streams, and ponds in meadows up to timber line. It is closely restricted to water (Dumas 1966, Stebbins 1985)."

From Appendix L:

Butte - Butte Creek, Mainstem and all tributaries upstream of Bolt Creek, Class A

Plumas - Warner Creek Mainstem and all tributaries, Class A

Tehama – Butte Creek, Mainstem and all tributaries from Tehama- Butte county line, Class A
Carter Creek, Mainstem from Deer Creek
Colby Creek, Mainstem and all tributaries from Tehama- Butte county line, Class A
Willow Creek, Mainstem and all tributaries from Tehama- Butte county line, Class A

Since the *R. cascadae* does not exist in these counties there it is incorrect to assign Classification A to these streams. Therefore this action species needs to be removed from these waters.

Action item: Remove classification A from the above streams.

Yosemite Toad – *Anaxyrus canorus (Bufo canorus)*

From DFG website: “Inhabits wet mountain meadows, willow thickets, and the borders of forests, usually not more than a hundred meters from permanent water. From 4,800 - 12,000 ft. (1,460 - 3,630 m.) elevation.” (SNYLF = Sierra Nevada Yellow Legged Frog, *Rana Sierrae*)

From Appendix L:

Alpine –	Arnot Creek, Mainstem and all tributaries, Class A
	Caples Lake all tributaries (SNYLF)
	Mokelumne River, NF (SNYLF)
	Pleasant Valley Creek (SNYLF)
	Silver Creek (SNYLF)
	Silver Fork American River (SNYLF)
	Stanislaus River, NF (SNYLF)
	Truckee River, Upper (SNYLF)
Amador -	Cole Creek (SNYLF)
	Mokelumne River, NF (SNYLF)
	Silver Fork American River (SNYLF)
	Silver lake, Tributaries (SNYLF)
	Tragedy Creek (SNYLF)
Calaveras-	Mokelumne River, NF (SNYLF)
Fresno -	Multiple waters >4000’ (Various)
Inyo -	Baker Creek (SNYLF)
	Big Pine Creek (SNYLF)
	Birch Creek (SNYLF)
	Bishop Creek (SNYLF)
	Division Creek (SNYLF)
	Goodale creek (SNYLF)
	Horton Creek (SNYLF)
	Independence Creek (SNYLF)
	McGee Creek (SNYLF)
	Oak Creek (SNYLF)
	Pine Creek (SNYLF)
	Rawson Creek (SNYLF)
	Red Mountain Creek (SNYLF)
	Rock Creek (SNYLF)
	Sawmill Creek (SNYLF)
	Shannon Canyon Creek (SNYLF)
	Taboose Creek (SNYLF)
	Thiabaut Creek (SNYLF)
	Tinemoaha Creek (SNYLF)
Madera -	Multiple waters >4000’ (Various)
Mariposa -	Multiple waters >5000’ (SNYLF)
Mono -	Unnamed Creeks (all) (SNYLF)
	Adobe Creek (SNYLF)
	Birch Creek (SNYLF)
	Buckeye Creek (SNYLF)
	Cowcamp Creek (SNYLF)
	Convict Creek (SNYLF)

Crooked Creek (SNYLF)
Dechambeau Creek (SNYLF)
Dry Creek (SNYLF)
Dunderberg Creek (SNYLF)
Hilton Creek (SNYLF)
Junction Creek (SNYLF)
Labrose Creek (SNYLF)
Laurel Creek (SNYLF)
Lee Vining Creek (SNYLF)
Little Hot Creek (SNYLF)
Little Walker River (SNYLF)
Mammoth (SNYLF)
McGee (SNYLF)
McLaughlin (SNYLF)
Mill Creek (SNYLF)
Molybdnite Creek (SNYLF)
O'Harrel Canyon Creek (SNYLF) with Lahotan Cutthroat
Owens River (SNYLF)
Poison Creek (SNYLF)
Robinson Creek (SNYLF)
Rock Creek (SNYLF)
Rush Creek (SNYLF)
Sawmill Creek (SNYLF)
Virginia Creek (SNYLF)
West Walker River- Tributaries (SNYLF)
Wilfred Creek (SNYLF)

Tuolumne - Multiple waters >5500' (SNYLF) with Lahotan Cutthroat (Delaney Creek)

All of the above waters have *A. canorus* applied as an action species to be used in assigning Classification A to these waters. This toad is not a water dweller, from the DFG CWHR webpage:

SPECIFIC HABITAT REQUIREMENTS:

"Feeding: The diet of this toad includes beetles, ants, mosquitoes, dragonfly nymphs, larval lepidopterans, centipedes, and spiders (Grinnell and Storer 1924, Mullally 1953). Tadpoles feed on bottom detritus, or by filtering suspended plant material and planktonic animals.

Cover: During inactive periods, these toads seek cover inside abandoned rodent burrows, or move to adjacent forests (Karlstrom 1973). Individuals occasionally hide under rocks in streambeds. When disturbed, they often hop into nearby water (Mullally 1953, Cunningham 1963).

Reproduction: Breeding and egg laying occur from mid-April to mid-July depending on local conditions. Eggs are deposited in shallow, quiet pools in wet meadows, or in shallow tarns surrounded by forest.

Water: This species normally frequents moist microhabitats. Water for reproductive activities is provided by spring snowmelt.

Pattern: Quiet pools in alpine meadows provide optimal habitat."

In is abundantly apparent from the above habitat requirements that dredging in Sierra Nevada streams will have absolutely no effect on this species as regards to life history and reproduction. It therefore needs to be removed from Appendix L as an action species.

Action item: Remove *A. canorus*, the Yosemite Toad from Appendix L as an action species.

Black Toad – *Anaxyrus* ***exsul (Bufo exsul)***

From DFG website: The black toad is a common, but highly restricted species, occurring only in Deep Springs Valley between the White and Inyo Mountains in Inyo Co. Elevation 1515 m (5000 ft) to 1580 m (5200 ft). The species occurs in or near springs, watercourses, marshes and wet meadows.

Inyo - Antelope Spring Creek, Class A
Birch Creek, Class A

From CaliforniaHerps:

Habitat
Inhabits springs and marshes in an isolated desert basin between the Inyo and White Mountains. Toads are sometimes found in surrounding grasses. The vegetation around these springs is sparse and conditions are very dry with sandy soil.

From the CHWR webpage:

SPECIFIC HABITAT REQUIREMENTS:

Water
Always associated with wet places and appear to require the water provided by permanent springs.

Again, dredging in the waterway will have no effect on the Black Toad since its habitat is near springs not streams.

Action item: Remove classification A from the above streams in Inyo County.

Just focusing on the above three species, the evidence strongly supports the conclusion that there are incorrect or misapplied action species restrictions. Seemingly arbitrarily and capriciously applied to wrongly to limit dredging in multiple Sierra Nevada streams. The selection of certain species suggest that these species were at best, incorrectly or inappropriately selected by the contractor, Horizon Water and Environment or one of its sub-contractors or in the worst case used as a falsely misapplied mechanism to support another agenda.

Sincerely,

Craig A. Lindsay
President, North Fork Dredgers Association

cc: Dave Marks, Don Robinson, Ray Budowich, Troy Bochus, Pat Keene, Jerry Hobbs, Dave Readacker, Eric Rasbold, Pioneer Mining, Rick Solinsky, Eric Maksymky

May 9, 2011

Sent Electronically and to be Placed in Comments Box at 5/10/11 DFG Meeting

Attention: Mark Stopher
Environmental Program Manager
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From: Craig A. Lindsay
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Subject: Change of Use Classification E for *Rana boylii* the Foothill Yellow Legged Frog

Dear Mark,

There is an absolute lack of clarity and/or explanation in the definition of the matrix for use classifications from Chapter 2, page 2-6, Table 2-3.

From lines 10 –14, page 2-6:

"In many cases, the use classifications for action species overlap, which required the development of additional uses classifications which would provide protection for all action species which may occur in a given stream. Table 2-2 provides a matrix that demonstrates the resulting stream restrictions for all scenarios of overlapping uses classifications. New use classifications were developed as necessary to address certain overlaps."

How were the additional use classifications developed? What were the criteria to decide the how to address the purported overlaps? Where is the temporal matrix of the underlying data to support streams with multiple action species so that all species had "protection of critical life stages (e.g., spawning, incubation, early emergence/development)".

From lines 30 – 33, page 2-5 and lines 1 - 9, page 2-6

"The use classes assigned to each of the *Fish* action species were then applied to streams within the species range or known distribution. There is a broad range of data that provide information on species distribution in the state. The quality and accuracy of these data resources vary. In all cases, CDFG has attempted to use the best available data on species distribution. However, because of the broad spatial extent of the Proposed Program, it was not feasible to incorporate all data resources specific to each action species. Thus, the draft proposed amendments to the existing regulations often reflect broad understanding of a species distribution within the state. In many cases, modifications to the species' use

classification or known distributions were applied based on regional knowledge of the species status and life history characteristic. In all cases these modifications were based on the potential for suction dredging activities to be deleterious to *Fish* species. Modifications to the generic use classifications or spatial data used for each species are described in Chapter 4.3, Table 4.3 -1 or Appendix L."

Several comments:

How can the CDFG use a "broad understanding of a species distribution within the state" when it is applying a use classification to a specific waterway?
Again, if the "the quality and accuracy of these data resources vary" how do you justify application of these data to a specific waterway?
And since the "CDFG developed the draft proposed amendments to the existing regulations to ensure that suction dredging would not result in deleterious effects to *Fish*." Lines 10- 11, page 2-5 then from the paragraph above it states, "In all cases these modifications were based on the potential for suction dredging activities to be deleterious to *Fish* species."
So this contradicts itself. Are you basing the use classifications on suction dredging actually being deleterious to *Fish* or just the potential to be deleterious to *Fish*?
This is critical to the justification of the methodology used to assign use classifications to any given waterway. That dredging might or potentially hurt/kill a *Fish* species does not support closing or limiting use of a river or stream.

From lines 18 –21, page 2 –6:

"The use classifications have been applied to all rivers and streams in the state. Note that in some cases, the spatial extent of the use classifications have been modified from the actual boundaries of the species' occupied habitat or range for ease of interpretation and enforcement."

I take extreme exception to the above statement. Where is the legal and or moral authority that allows the CDFG to classify streams so that it makes the duties of interpretation and enforcement easier?

Specific Example:

Let's review the use classifications for *Rana boylii,* the Foothill Yellow Legged Frog. As listed in Appendix L, the action species *R. boylii* has four (4) use classifications , C, D, E and F:

From Table 4-3:

Class	Open Dates
C	Open to dredging from June 1 thru September 30
D	Open to dredging from July 1 thru January 31
E	Open to dredging from September 1 thru January 31
F	Open to dredging from July 1 thru September 30

In order to simply the analysis we will only look at streams that have a use classification of E for the action species *R. boylii*.

A review of the scientific literature should determine if these dates from Table 4-3 make any sense. These dates apparently provide, from Chapter 2, lines 24 –25, page 2-5 "protection of critical life stages (e.g., spawning, incubation, early emergence/development)".

The literature suggests otherwise:

From Amphibia Web Account:

Life History, Abundance, Activity, and Special Behaviors**:** Breeds from the latter part of March to the first of May.

From the USFS:

Mating strategy and breeding patterns of the foothill yellow-legged frog (*Rana boylii*), Wheeler, Clara A.; Welsh Jr., Hartwell H., 2008

Timing of breeding activity: During the six years of study, the onset of breeding activity started as early as 7 April (2002 and 2007) and as late as 8 May (2003)

Eggs hatch in 5 to 30 days, or more (Zweifel 1955).

In the main stem Trinity River, eggs hatch in 27 to 36 days - personal observation. **(**Foothill Yellow Legged Frog *(Rana boylii)* Natural History (USFS) by Don T. Ashton, Amy J. Lind, and Kary E. Schlick., 1997),

So if we assume a long 45-day period from breeding and egg-laying we can calculate a hatch no later than third week in June.

Why then is use classification "E" assigned to streams where the only action species is *R. boylii* and results in a dredging season starting the first of September?

Let look at the list of all use classification "E" streams from Appendix L:

Amador County –

Mokelumne River, North Fork Mainstem and all tributaries from Tiger Creek to Salt Springs Reservoir, except Cole Creek, E, FYLF

Butte County–

Butte Creek Mainstem and all tributaries from Centerville Head Dam upstream to De Sabla Powerhouse, unless otherwise noted, F, FYLF
Butte Creek Mainstem and all tributaries from De Sabla Powerhouse, upstream to Bolt Creek, unless otherwise noted, F, FYLF
Feather River, Middle Fork River, (Tributaries) All tributaries to Middle Fork Feather River upstream of Lake Oroville, unless otherwise noted, E, FYLF
Feather River, North Fork, (Tributaries), All tributaries to North Fork of Feather River upstream of Lake Oroville, unless otherwise noted, E, FYLF
Feather River, South Fork, (Tributaries), All tributaries to South Fork of Feather River upstream of Lake Oroville, unless otherwise noted, E, FYLF

Calaveras County –

Forest Creek Mainstem and all tributaries, E, FYLF
Jesus Maria Creek Mainstem and all tributaries, E, FYLF

Mokelumne River, North Fork Mainstem and all tributaries from Tiger Creek upstream to Salt Springs Reservoir, E, FYLF

El Dorado County –

American River, Middle Fork (Tributaries) All tributaries from North Fork American River upstream to Oxbow
Dam, unless otherwise noted, E, FYLF

American River, South Fork Mainstem and all tributaries from Slab Creek Reservoir upstream to Highway 50 Bridge at Riverton, unless otherwise noted, E, FYLF
Camp Creek Mainstem and all tributaries from North Fork Consumnes River upstream to Dennis Canyon, E, FYLF

Nevada County –

Yuba River, Middle Mainstem and all tributaries from Nevada--Yuba County Line upstream to Milton Reservoir, unless otherwise noted, E, FYLF
Yuba River, South Fork (Tributaries) All tributaries from Yuba River upstream to Lake Spaulding, E, FYLF

Placer County –

American River, Middle Fork (Tributaries) All tributaries upstream of Oxbow Dam, E, FYLF
Rubicon River Mainstem and all tributaries upstream of Oxbow Dam to the Placer-El Dorado County Line, E, FYLF

Plumas County –

Feather River, Middle Fork (Tributaries) All tributaries, unless otherwise noted, E, FYLF
Feather River, North Fork (Tributaries) All tributaries, unless otherwise noted, E, FYLF
Feather River, South Fork (Tributaries) All tributaries, unless otherwise noted, E, FYLF

Sierra County –

Yuba River, Middle Mainstem and all tributaries from Sierra-Yuba County Line upstream to Milton Reservoir, E, FYLF
Yuba River, North Fork and all tributaries from Sierra-Yuba County Line upstream to River, upstream To Ladies Canyon Creek, E, FYLF

Yuba County –

Yuba River, Middle Mainstem from Yuba River upstream to Yuba-Sierra County Line, E, FYLF
Yuba River, North Fork (Tributaries) All Tributaries from New Bullards Bar Reservoir Upstream to Yuba--Sierra County Line, E , FYLF

F use classes:

Butte Creek Mainstem and all tributaries from De Sabla Powerhouse Upstream to Bolt Creek, unless otherwise noted, F, FYLF

From Chapter 4.3, Table 4.3-1, page 24 of 26:

"Class E restrictions are proposed for select watersheds in CDFG Region 2. (DFG's North Central Region 2 serves Alpine, Amador, Butte, Calaveras, Colusa, El Dorado, Glenn, Lake, Nevada, Placer, Plumas, Sacramento, San Joaquin, Sierra, Sutter, Yolo and Yuba counties.) Class E restrictions are proposed for select watersheds in CDFG Region 2. These watersheds are generally tributaries of mainstem streams that have hydrology altered by hydropower operations. In these watersheds tributaries are important refugia for the species, and therefore Class E restrictions are proposed to avoid or minimize impacts to early life stages."

As can be seen by the list of the Class E streams listed above many are above barrier and so do not have their tributaries "hydrology altered by hydropower operations".
Also, if use classification E is, "proposed to avoid or minimize impacts to early life stages." The proposed application is false since by no later than the third week in June the eggs have hatched into tadpoles.

Again, use classifications have been apparently been arbitrarily and capriciously applied to limit dredging using an action species that is incorrectly assigned to certain waterways. In addition, this use classification only makes sense, if and only if *R. boylii* exists in these tributaries, which in many cases does not make sense since it is extirpated.

SUMMARY:

#1 The use classification matrix appears confusing and does not demonstrate internal consistency.
#2 The use classification matrix uses a broad based approach to incorrectly limit specific streams.
#3 The quality and accuracy of the species distributions are suspect.
#4 Most importantly, stated in the document is that the use classification are made on the POTENTIAL deleterious effect on *Fish*.
#5 Streams are not to be classified so that it makes the duties of interpretation and enforcement easier.
#8 The application of use classification E is inconsistent and appears arbitrary and capricious.

Action Item; Change proposed use classification E dates from September 1 thru January 31 to July 1 thru January 31.

Sincerely,

Craig A. Lindsay
President, North Fork Dredgers Association

cc: Dave Marks, Don Robinson, Ray Budowich, Troy Bochus, Pat Keene, Jerry Hobbs, Dave Readacker, Eric Rasbold, Pioneer Mining, Rick Solinsky, Eric Maksymky

James Madden
Mark Stopher
DFG DSEIR regulations

You already know the problem with the frogs, but you still blame dredging for their demise. After listening to the very detailed and factual presentation at the public meeting in Sacramento on March 29 it would appear that your scientists are failing to conduct proper scientific studies. One cannot say that because a certain grass or species of aquatic plant might be one that a redlegged frog would eat or nest in that there are frogs in that area. The proof of this is in the Federal and state websites that prove that there were only a few of these frogs actually documented.

Next your own department is a major contributor to any and all reduction in population of these aquatic creatures. By stocking the high sierra lakes and streams with non native trout which naturally are going to consume the eggs and tadpoles you have created a mess that mining is being blamed for.

When we are dredging we are very close to the material that is entering the nozzle and we would see any eggs in the stream. Almost all of the Frogs eggs I have encountered have been deposited on the undersides of aquatic plants in slow moving water. Dredgers are not interested in working these near bank areas.

Futhermore a recent study came out which I will add to this letter about a fungus that is killing the amphibians. It is widely reported that herons will pick up frogs eggs on their feet and transport them miles from the original location. The fungus is also spread in bird feces.

Gentlemen your are barking up the wrong tree.

A deadly fungus that infects frogs, toads, salamanders and newts in California's High Sierra is a major cause of a population decline that is now hitting amphibians throughout the world, a team of San Francisco State University biologists has found.

The fungus even caused an epidemic of the disease in Central America when it swept southward from Mexico into Guatemala and Costa Rica more than 40 years ago, the scientists discovered by finding the fungus in the skins of animals that had been pickled in formalin for decades, and in live ones collected there recently.

It is now apparent from international surveys of animal life that something of a mass extinction is striking amphibians everywhere: About 40 percent of all species are in decline, the surveys report, while nearly 500 species are listed as "critically endangered."

Reasons for this crisis in biodiversity are still unclear, and in California's iconic mountain range all sorts of sources have been blamed: expanding towns and villages that wipe out

amphibian habitats; chemical clouds that drift upward from valley farm fields; voracious trout in mountain lakes that gobble up tadpoles as soon as they hatch; and global climate change that is already driving some mountain species to higher, colder altitudes.

All are probably involved in the population decline, at least in part, scientists believe.

Amphibians attacked

But it's the nasty poisonous fungus, known as chytrid, that is the dominant cause of death in so many amphibian species, according to the S.F. State scientists.

Led by Tina Cheng, a biology graduate student, and Professor Vance T. Vredenburg, her adviser, the group's report on the problem is published in today's issue of the Proceedings of the National Academy of Sciences.

Cheng collected frogs and salamanders during a recent field trip in Mexico, and - most important for their research, Vredenburg said - she was also able to study specimens collected in Central America over the years since 1971 by UC Berkeley herpetologist David B. Wake. They have all been preserved and stored at Berkeley's Museum of Vertebrate Zoology.

Wake is noted for his many years studying the fate of amphibians - particularly of California's salamanders - and in an e-mail he said of Cheng and Vredenburg's survey, "The simple fact is that the situation is dire."

To pin down the role of the fungus in the amphibian population crash, Cheng applied a laboratory technique that is normally used to analyze DNA in living tissue. Known as PCR, for polymerase chain reaction, she adapted it and detected clear evidence of the chytrid fungus DNA in the skins of the old museum specimens, even though the chemical preservative formalin had long been thought to destroy DNA.

Disease spread tracked

The specimens had all been collected and dated by Wake during his many years of collecting amphibians through Central America, so Cheng was able to trace the spread of the fungus infestation from Mexico southward to those other countries.

In all, Cheng said in an interview, she has tested more than 1,000 specimens for evidence of the fungus, whose full biological name is Batrachochytrium dendrobatidis, otherwise known as Bd.

"We're documenting the spread of this disease," she said, "and what's so alarming is that Bd attacks so many species that some are now close to becoming extinct."

Cheng and Vredenburg's colleagues include Wake and Sean M. Robito, a postdoctoral fellow from UC Berkeley now at the Instituto de Biologia in Mexico.

E-mail David Perlman at dperlman@sfchronicle.com.

This article appeared on page **C - 1** of the San Francisco Chronicle

Read more: http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2011/05/02/BACO1J90CP.DTL#ixzz1LvFrwzzn

James Madden
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DFG DSEIR
Mark Stopher

Humbug creek study

One of the things I found blatantly wrong with the humbug study with the 300 gallon tank was they directed the dredgers to actively suck up clay.

If you lined up 1000 miners whether they be dredgers or not, each and every one of them would tell you that clay is a gold thief. WE DO NOT work clay, clay will not break down properly in our recovery systems. It usually stays in clumps and balls and it is very effective in collecting gold particles which will stick to the surface of the clay. The clay exits the recovery system and is deposited back into the stream. Charleys scenario where the water was recirculated over and over would actually cause the clay to break up forming the silt. As the rocks and water washed into the tank the entire tank was an active medium like a washing machine beating the rocks and hard particles against everything in the tank. This action breaks the clay down in to fine particles which would remain suspended. Once everything was shut down and all tank motion stopped the clay will remain suspended.

Charlie does not have enough knowledge about this subject to write even a third grade paper on dredging. A scientist must know his or her instruments and have a good working knowledge of what they are studying. Even scientists who do not know a lot about the subject matter will communicate with their peers or find an expert in the field. They also will perform multiple experiments to verify the results and learn as they go.

Charles Alpers was most likely promoted into management because he lacked the necessary skills to perform the job as a research scientist. I had a biologist review his humbug creek study and she said that it was poorly written inadequately researched and preformed.

Charlie Alpers being a federal employee is pretty secure in his employment. Had Mr Alpers been employed in the corporate world where everything must pass through peer review, Charlies paper would have been severely thrashed. Mr Alpers would not be employed very long if he continued using slipshod science.

James Madden
2362 Rosewood dr
San Bruno, Ca.
94066

DEAR SIR,

PLEASE CONSIDER MY COMMENTS REGARDING THE SEIR AND PROPOSED REGULATIONS FOR SUCTION DREDGE MINING IN CALIFORNIA.

THERE IS NO SENSEBLE BALANCE TO THE WHOLE THING. ONE GILL NET KILLS MORE SALMON THAN ALL DREDGES PUT TOGETHER, BECAUSE A DREDGE DOES NOT HARM OR TARGET SALMON. HOW MANY GILL NETS ARE USED ON THE KLAMATH RIVER SYSTEM ALONE? WHAT ABOUT THE DIP NETS? HOW MANY FISHING LICENCES ARE SOLD IN CA. IN ANY GIVEN YEAR? THE 1994 REGULATIONS KEEPS US OUT WHILE EGGS AND SMOLT ARE PRESENT.

IN 10+ YEARS OF DREDGING I HAVE RECOVERED MAYBE AN OUNCE OF MERCURY AND POUNDS OF LEAD. NO BALANCE!

LIMITING TO 4,000 DREDGE PERMITS? HOW WAS THAT NUMBER COME UP WITH? TWO MILLION+ FISHING LICENCES, SO A DREDGER WOULD HAVE TO KILL OR HARM 500 FISH A YEAR? IT HAS NOT BEEN PROVEN WE KILL OR HARM ANY. NO BALANCE!

THE LIMITING TO SIX LISTED DREDGING SITES IS RIDICULOUS! DOES A FISHING OR HUNTING LICENSE LIMIT PLACES? OR A DRIVERS LICENSE? I HAVE MY OWN MINING CLAIMS AND I HAVE JOINED CLUBS SO I CAN PROSPECT IN DIFFERANT AREAS. IS THIS JUST ALL ABOUT CONTROL? THE LAND OF FREE AND THE HOME OF THE BRAVE? GOD BLESS US VETERANS!

(2)

THE LIMITING OF NOZZLE SIZE: LIMITING TO 4" IS TO RESTRICTIVE, WHAT IS IT BASED ON? LEAVING TO 1994 REGULATIONS WOULD BE OKAY.

THE REDUCTION OF EXISTING SEASONS AND CLOSING OF A NUMBER OF STREAMS IS UNREASONABLE. THE SEASONS WERE ALREADY SHORTENED TO "PROTECT" FISH

THE 3 FOOT RULE IS COMPLETE NONSENSE! THE EXISTING REGULATIONS MAKE IT TO WHERE STREAM ARE ALREADY LOW FLOW. THREE FEET FROM EXISTING WATER LINE WOULD TAKE MOST OF MY CLAIM AWAY FROM ME. WHAT DREDGE 2 FOOT OF A 8 FOOT EXISTING WATERWAY IN AUGUST-SEPTEMBER WHEN STREAMS ARE ALREADY LOW? YOU WANT TO CONTROL US, WHAT ABOUT MOTHER NATURE? OH, SHE DOES MORE DAMAGE IN ONE WINTER STORM THAN A 100 DREDGES COULD DO! ON A SMALLER STREAM THE EXISTING WATER LINE CAN MOVE SEVERAL FEET IN A MATTER OF DAYS.

REQUIRING 3/32" INTAKE HOLES FOR PUMPS IS UNREASONABLE. IT WILL JUST CAUSE PUMP DAMAGE WHEN THE FISH FRY AND SMOLT ARE NOT PRESENT AND SMART ENOUGH TO STAY AWAY.

THIS PROPOSED FUEL STORAGE IS RIDICULOUS! MY PICKUP TRUCK IS PARKED WITHIN A 100 FOOT OF WHERE I AM DREDGING MOST OF THE TIME. DOES THAT MEAN IF I HAD A BOAT OR A JET SKI I COULDN'T HAVE FUEL IN IT OR PARK AT A BOAT LAUNCH SITE? NO BALANCE!!

WHAT DOES HOURS OF OPERATION HAVE TO DO

WITH ANYTHING? ARE WE LIMITING WHEN WE CAN DRIVE DOWN A PUBLIC STREET OR HIGHWAY? I HAVE YET TO SEE A MINER UP AND WORKING THAT EARLY! CONTROL-CONTROL, NO BALANCE!

WHAT DOES ONE HOOPA INDIAN DO WITH 700 SALMON?? WWW.REDDING.COM/NEWS/2009/NOV/08/ARE-GILL-NETS-DECIMATING-KLAMATH-AND-TRINITY. THEY ARE THE FIRST TO COMPLAIN!? I WAS RAISED IN WILLOW CREEK, CA. AND GRADUATED FROM HOOPA IN 1965. SAME THING THEN! JUST SELLING AND WASTING FISH! NO BALANCE!

I COULD GO ON AND ON. BUT DO YOUR JOB AND GET US BACK OUR PROPERTY RIGHTS AND OUR RIGHT TO MINE! THIS NATION IS HEADING INTO A TRAIN WRECK IF THE UNNESSCARY CONTROL IS NOT CONTROLLED!

THANK YOU FOR TAKING

MY COMMENTS AND SUGGESTIONS INTO CONSIDERATION!

STEVE MATSON
855 TROSPER #108-207
TUMWATER WA
98512

Suction Dredge Permitting Program
Draft Subsequent Environmental Impact Report (DSEIR)
Comment Letter

Submitted By:
Name: Ken Mela
Mailing Address: 4101 Desert Fox Dr. Sparks, Nv 89436
Telephone No.: 775-424-3638
Email: goldprosp@yahoo.com

Comments:

I have received the following analysis of the mercury situation from a mutual friend of the author, Eric Maksymyk. I too am concerned over the findings under the DSEIR of the impact being labeled "significant and unavoidable" as opposed to "less than significant".

First of all let me add my credentials to my commentary. I have a BS in Geophysics (1974) and an MS in Hydrogeology (1997) from the University of Nevada, Reno (Mackay School of Mines). I have been, with the exception of eleven years during which I lived in Texas, I have been a recreational gold prospector since 1971. I have read Mr. Maksymyk's comments and agree with his analysis. I find it distressing that the DFG is making decisions that affect the future of this very enjoyable hobby (and livelihood of some) based on two papers of dubious scientific value. As Mr. Maksymyk points out, methods used to acquire data for the Fleck paper do not represent anything about dredging. Humphreys does utilize a dredge and finds that 98% of elemental mercury is recovered by dredging but after finding that is concerned over the lost 2%. This 2% is not introduced by modern mining methods and the 98% recovered by dredging is removed from the ecosystem. If anything, this fact alone should lead DFG to encourage more gold dredging to help clean up the mercury from mining methods employed in the past.

Recommendations:

1) Do not limit the number of dredging permits.
2) Do not limit the nozzle intake size of gold dredges.
3) Enlist the help of dredgers to clean up not only mercury but lead left by fishermen and hunters in our rivers and streams.
4) Establish disposal locations for gold dredgers in locations throughout the gold producing counties thus permanently removing mercury and lead from these water sources.
5) Commission a future study with input from both the environmental and mining communities so an unbiased fair evaluation can be made.

I have copied and pasted Eric Maksymyk's comments below for your reference to my comments.

ANALYSIS OF THE EFFECTS OF MERCURY

The analysis of data presented and referenced in the SEIR indicates that suction dredges have a positive and beneficial contribution to mercury removal at no cost to the Government.

Bias in analysis and selective use of data in the DSEIR results in incorrect conclusions about the impacts of suction dredging.

CDFG has stated they do not have the regulatory authority to limit mercury. While CDFG may not have regulatory authority in regards to the emissions from a dredge, when they are not deleterious to fish – it appears through the proposed program the mercury conclusions are providing the foundation for the crafting of the proposed program and I would like to highlight inconsistencies between the proposed program rules and the data and analysis relative to the limitation of dredge permits and the restriction of nozzle size.

MERCURY – Impact WQ-4 (Significant and Unavoidable)

Based on the data the finding should be "Less than Significant" under the existing program.

Criteria for Significant as defined in the SEIR (page 4.2-24)

(1) Increase levels of any priority pollutant or other regulated water quality parameter in a water body such that the water body **would be expected to exceed state or federal numeric** or narrative water quality criteria or other relevant effect thresholds identified for this assessment by frequency, magnitude, and geographic extent that would result in adverse effects on one or more beneficial uses.

RESULTS – No evidence, no facts and the analysis of the data finds that a suction dredge reduces the levels of priority pollutants while not violating **ANY** federal or state criteria or threshold.

(2) Result in **substantial, long-term** degradation of existing water quality that would cause substantial adverse effects to one or more beneficial uses of a water body.

RESULTS – No evidence in the analysis of long term degradation – the opposite is shown. The long term effect of suction dredging is a reduction in mercury and an increase in water quality.

(3) Increase levels of any bio-accumulative pollutant in a water body by frequency and magnitude such that body burdens in populations of aquatic organisms **would be expected to measurably increase**, thereby substantially increasing the health risks to wildlife (including fish) or humans consuming these organisms.

RESULTS – no evidence based on facts that dredging increases the level in wildlife.

The Humphreys Study – Beneficial Impact of Suction Dredging

A study was conducted from 2005 to 2008 to determine the efficiency of an unmodified gold dredge in removing mercury from the watershed. This study is cited on page 4.2-36 of the SEIR and Humphrey's is cited as assisting in the Fleck studies. Humphrey's came to the conclusion that a standard 4" suction dredge of a less efficient design (known to dredgers as a crash box versus a flare jet) is 98% efficient at capturing mercury. However, the conclusions he then presents and which the SEIR uses, without considering the stunning efficiency of a gold dredge (surpasses any other known method of removing mercury from the watershed) appear biased and are proven through quantitative analysis to be incorrect.

Efficiency graphs based on the Humphreys study [Humphreys 2005].

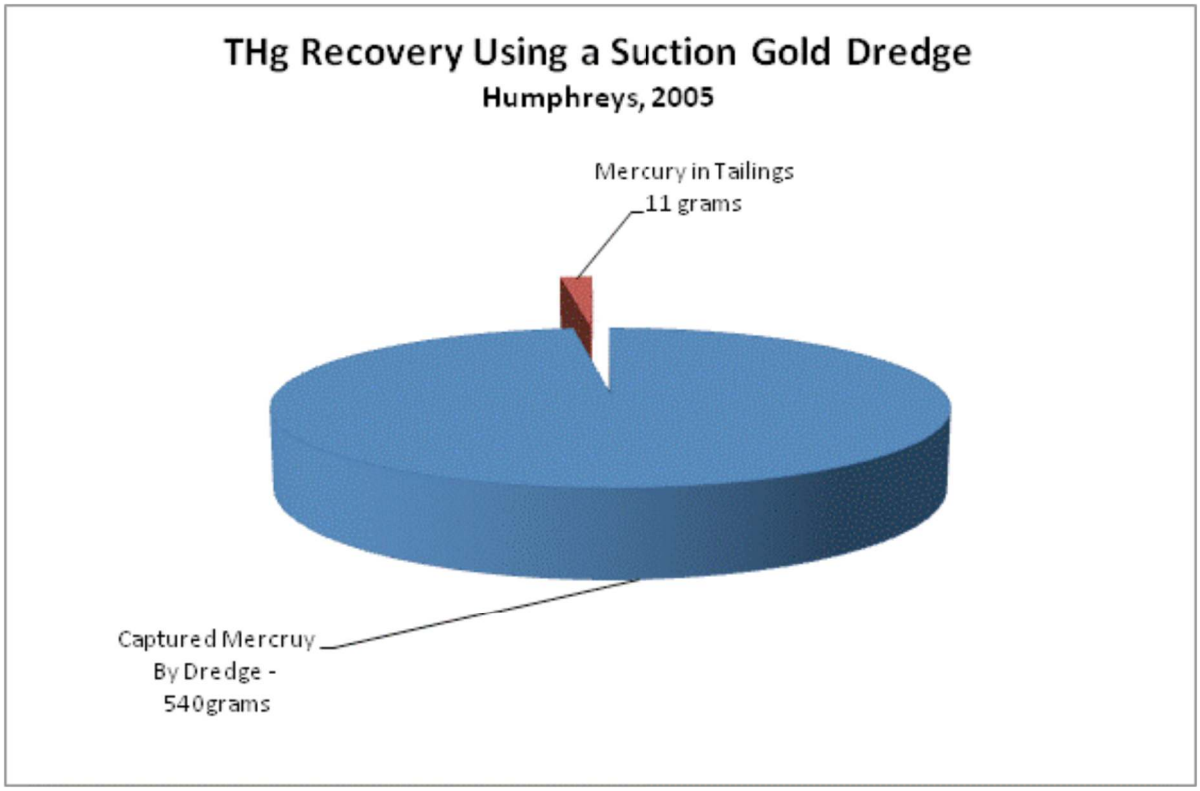

Figure 1. Humphreys Measured Hg

Figure 1 is based on the data provided by Humphreys. In the study he states that 540 grams of mercury were recovered **(removal of a priority pollutant – not increase)** using the suction dredge and measurements taken from source material and tailings material provide the input mercury, the captured mercury and the mercury output into the tailings. This graph and the underlying data present a remarkable picture of the ability of suction dredgers to recover mercury.

However, Humphreys conclusions are just the opposite:

- A suction dredge loses too much mercury
- A suction dredge provides mercury levels in the water that exceed California standards
- A government program is required to remove mercury
- Floured gold is created by the dredge

(1) Suction dredge loses too much mercury – this statement is surprising given the dredge had an efficiency rate of 98%. This rate is higher than any known scientific or commercial process for stream Hg recovery known.

Based on the measurements taken by Humphreys the mercury amounts would be:

DREDGE EFFICIENCY TEST - HUMPHREYS 2005	THg in grams	% of Total
Total Amount of Hg in Source Mate	551.0	100%
Concentrated Hg Recovered from D	540.0	98%
Amount of Hg Found in Tailings	11.0	2%

Table 1. Mercury Totals in Grams from the Humphrey Test

Interestingly the SEIR does not mention the effectiveness of the dredge; rather it focuses on flouring of the gold while not mentioning that a gold dredge recovered 1/2 kg of mercury from the water. The SEIR mentions the Humphreys study but then goes on to hypothesize on the flouring of mercury which is not proven in the study..."Flouring...which **may** affect transformation...". [SEIR p.4.2-36]. However, Humphreys study proved that the mercury was floured prior to dredging and after dredging, but the dredge actually consolidated the mercury.

(2) Suction Dredges Would Violate California Mercury Standards

"Mercury concentrations in the waste and suspended sediment are over an order of magnitude higher than the minimum concentration necessary to classify as a California Hazardous waste (20mg/kg). " [Humphrey's 2005 – Results].

Let's evaluate that statement based on Humphrey's data. Humphrey's dredged 5,900 kg of material so the calculations would be:

Material Moved in Kg	CA Limit in mg/kg	Humphreys Source Material in grams (Total Hg)	Tailings THg in mg	mg/kg rate in THg mg/kg	mg/kg rate required to Exceed Threshold	in source mtl in mg/kg %	Input THg in mg to Exceed Threshold	Output Material in THg mg/kg
6000	120000	570.00	11,400.00	1.90	20.0	11,526	6,704,082	134,082
4000	80000	380.00	7,600.00	1.90	20.0	11,526	4,469,388	89,388
2000	40000	190.00	3,800.00	1.90	20.0	11,526	2,234,694	44,694
1000	20000	95.00	1,900.00	1.90	20.0	11,526	1,117,347	22,347
500	10000	47.50	950.00	1.90	20.0	11,526	558,673	11,173
250	5000	23.75	475.00	1.90	20.0	11,526	279,337	5,587
10	200	0.95	19.00	1.90	20.0	11,526	11,173	223
5	100	0.48	9.50	1.90	20.0	11,526	5,587	112
1	20	0.10	1.90	1.90	20.0	11,526	1,117	22

Table 2. Increases in Input Material THg Required to Violate CA Hazardous Waste

Humphreys reached the opposite conclusion given the above data, "...are over an order of magnitude higher than the minimum concentration necessary...". Clearly Humphrey is basing his threshold limit on only the amount of concentrates and not the 5,900 kg of material moved. Table 2 shows that the emissions from a dredge were not ten times as high as the California standard for hazardous materials, but were in fact 90% below the allowable contaminant per Kg of material entering back into the stream . Additionally, California water standards allow for averaging over a 30 day period – it is not even remotely possible that the standard would be exceeded by a dredge.

Graph displaying the results from the Humphreys test and the amount of material moved relative to the California threshold for hazardous waste.

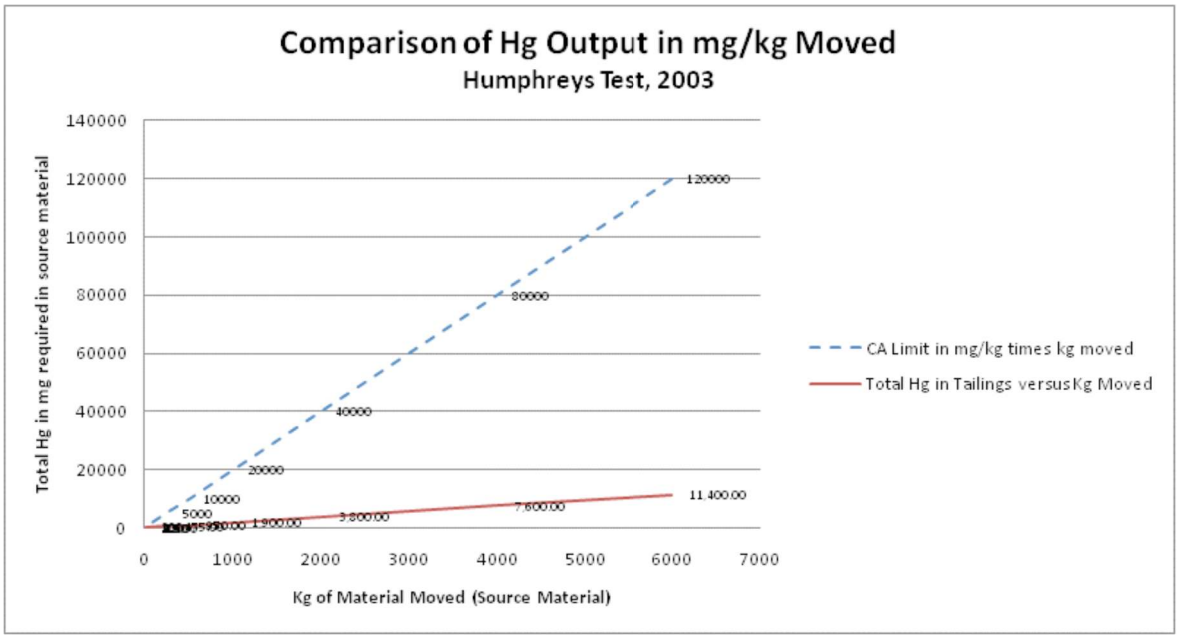

Figure 2. Comparison of Hg in Dredge Tailings to California Haz Waste Standard

(3) A government program is required

"It might be possible to design a shore-based recovery system for the Coloma hotspot and recover mercury annually. Such a system would need to minimize mercury loss. Recovery equipment would need to be held in storage during nonuse and operated by trained staff. Proper permits (e.g., in stream alteration, and, mercury disposal or recycling) would be needed. Such a project is more complex and costly in time, money, and commitment than previously considered projects." [Humphreys 2005 – Conclusions].

Suction dredgers have been recovering mercury with a 98% efficiency rate for over 40 years for free so it is incomprehensible how such a conclusion could be reached. The literature does not cite a single instance of a gold dredger being affected by mercury.

(4) Floured mercury is created by the dredge

While Humphreys mentions this – it is not proven that the mercury was not in a floured form prior to dredging – there was no evaluation of the amount of mercury that was "floured" prior to entering the dredge- however, as shown below it was "observed" that all the mercury was floured prior to dredging.

This key point is lost in the SEIR. The SEIR only accepts the position that it **may** be true while discounting the position that it may be false. Again, this is not consistent with the CEQA requirement to analyze the facts. Presenting only the "possible" while discounting the "probable" shows bias in the SEIR towards a target goal of proving dredging is harmful.

SEIR Statement, page 4.2-36, line 19-21; "...suction dredging has been observed to result in the "flouring" of Hg droplets...Humphreys, 2005; Silva, 1986."

(1) Actual Statement from Humphreys Report – " Visual inspection of size fractions showed that almost ***all the liquid mercury rested in the fraction that passed a 30-mesh sieve (0.6mm)***." Speaking to the sample material that was not dredged but collected on September 15, 2003.

(2) Actual Statement from the Humphrey's Report now speaking to the tailings material (passed through the dredge – " During the test, the USFS team captured sediment lost off the sluice in a catch basin for later analysis. Small mercury droplets and fine, barely discernable droplets (i.e., floured mercury) were characteristic of these samples." Speaking to the material collected after dredging on September 16, 2003.

The post dredging test found exactly the same as the source material – extremely small droplets of mercury that passed through 30 mesh.

One problem with all the reports referenced is the lack of baseline measurements. It is interesting to see just what 30 mesh screen is and the size of a particle that would pass through this screen. Figure 3 provides a picture of 30 mesh screen.

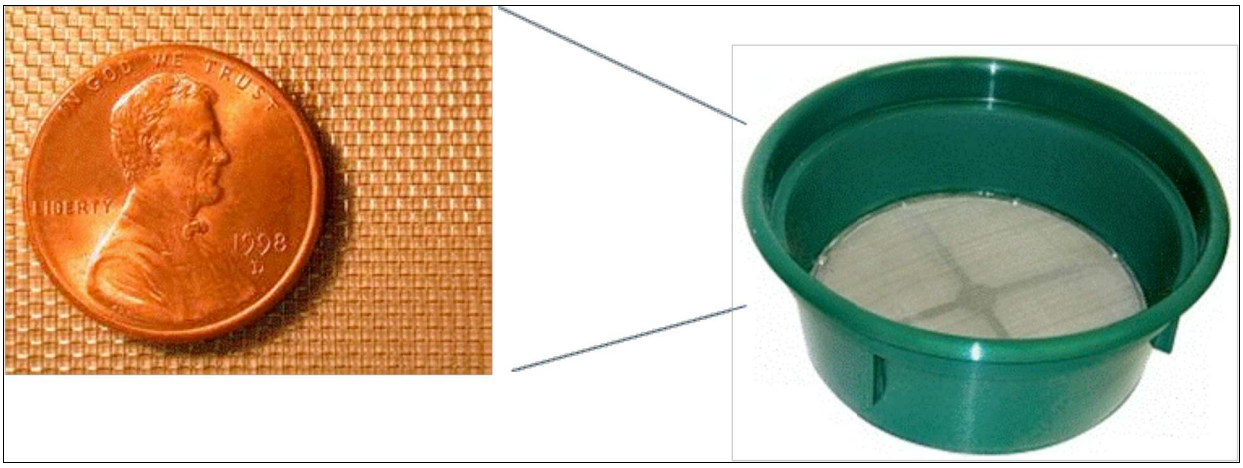

Figure 3. 30 mesh Screen

30 mesh screen results in a particle that would be the eye of Lincoln on the penny. If the input material with mercury was at least 30 mesh then what defines floured gold? What is the scientific standard to determine floured gold? Secondly, if almost all the source mercury passed through the 30 mesh screen and the dredge caught 98% of this material isn't this direct evidence that a dredge is not producing floured gold, but is actually capturing and concentrating it?

It would appear again that an opposite argument can be made that dredges capture floured gold. The mercury released was already floured – the dredge did not cause it. Again, a beneficial aspect to the dredge, but not considered or mentioned in the SEIR.

Where does the SEIR form the basis for "suction dredging has been observed..."? The Humphrey's report **does not say the dredge created the flouring of the gold**. The two statements above prove the gold was in floured form prior to dredging as well as after dredging. The fact the dredge concentrated and removed so much floured gold is the point the SEIR should have reported – but didn't.
But what is floured gold? We seem to focus on it, and the possibility of a dredge creating it, but from the above picture of a 30 mesh screen I can't imagine smaller drops of mercury "discernable by the eye."

The second reference "Silva, 1986" that the SEIR cites is an interesting selection. Here is the actual statement in the Silva report [See Reference 6 – California Department of Conservation, Placer Gold Recovery Techniques, 1986] – ***" agitated mercury has a tendency to form very small droplets, known as "flouring." Floured mercury does not effectively collect gold particles and may escape the recovery system."***

The context in which Silva presents the data refers to industrial recovery techniques and the lead in paragraph to this cite recommends the use of mercury to amalgamate gold (yes in 1986 an official publication of the State of California presented this as a method to increase gold recovery), the paragraph states ***" Mercury can be introduced to free gold***

in a number of ways. It can be placed in the riffles of sluices, dry washers, and similar devices to aid concentration of fine gold." [Silva, 1986].

Is Silva an appropriate cite or expert source on mercury? The entire publication does not make a single reference to portable suction dredges, interesting that it would be used as a cite for the potential flouring of gold from a suction dredge. Should we accept Silva's thoughts on flouring, or should we accept Silva's thoughts on placing mercury into our riffles to capture gold? The SEIR chose the former while discarding the later and ignoring that Silva didn't once mention suction dredges in the publication yet somehow this is cited as an "expert source" as required by CEQA?

SEIR, page 4.2-36 lines 26-27, "Furthermore it is not clear from the study whether Hg droplets were floured prior to being dredged or were floured as a result of dredging." See above comments on the Humphrey report that states nearly all the mercury in the prior to dredging sample passed through a 30 mesh screen and the same for after. It certainly appears to me it was both floured before AND after.

SEIR, page 4.2-36, lines 28-32, ***"Consequently, it is unlikely that suction dredges would recover either floured mercury in sediment dredged, or mercury floured by the suction and turbulence of the dredge."*** This is an extreme leap of logic. This conclusion can't be based on fact. Clearly the **ONLY** report to have studied this determined that **ALL** mercury in the incoming gravel **WAS** floured, the dredge recovered 98% of that. How can the SEIR leap to this conclusion given the evidence? This is completely unsupported by fact and the facts show exactly the opposite. What is the definition of flouring – wouldn't passing through a 30 mesh screen achieve that threshold – can we agree on that?

Neither the Humphreys report nor the Fleck report which the SEIR mercury discussion is based on evaluated the particle dimensions of the existing mercury prior to being dredged to after being dredged. **Flouring is conjecture and should be discarded lacking proof.**

Recirculating Tank Experiment [Fleck page 56]

The recirculating tank experiment conducted by Dr. Alpers is key to the later assumptions and analysis used in developing mercury emissions and THg for TSS in the SEIR. If the data the results were derived from are flawed then all of the resulting analysis must be discarded. An analysis of the Alpers study shows clear flaws in using this data as any kind of an estimation of the amount of particulated mercury that would be emitted from a dredge – these flaws include:

- Using a dredge suction system without a heavy metal capture system (sluice box)
- Recycling suspended mercury through the impeller of the pump (not how a dredge operates)
- Recirculating the contaminated water back onto the bedrock ensuring that both the mercury was fragmented and the source material was equally contaminated (normalized the material)
- Creating highly fragmented particles of mercury

- Using a calm, still water collection device to simulate the natural environment

In this experiment, Fleck et al, Dr. Alpers used concentrated material from the bedrock that was collected using a suction dredge pump and hose – not a dredge. Figure 4 below shows the setup used to collect the sample:

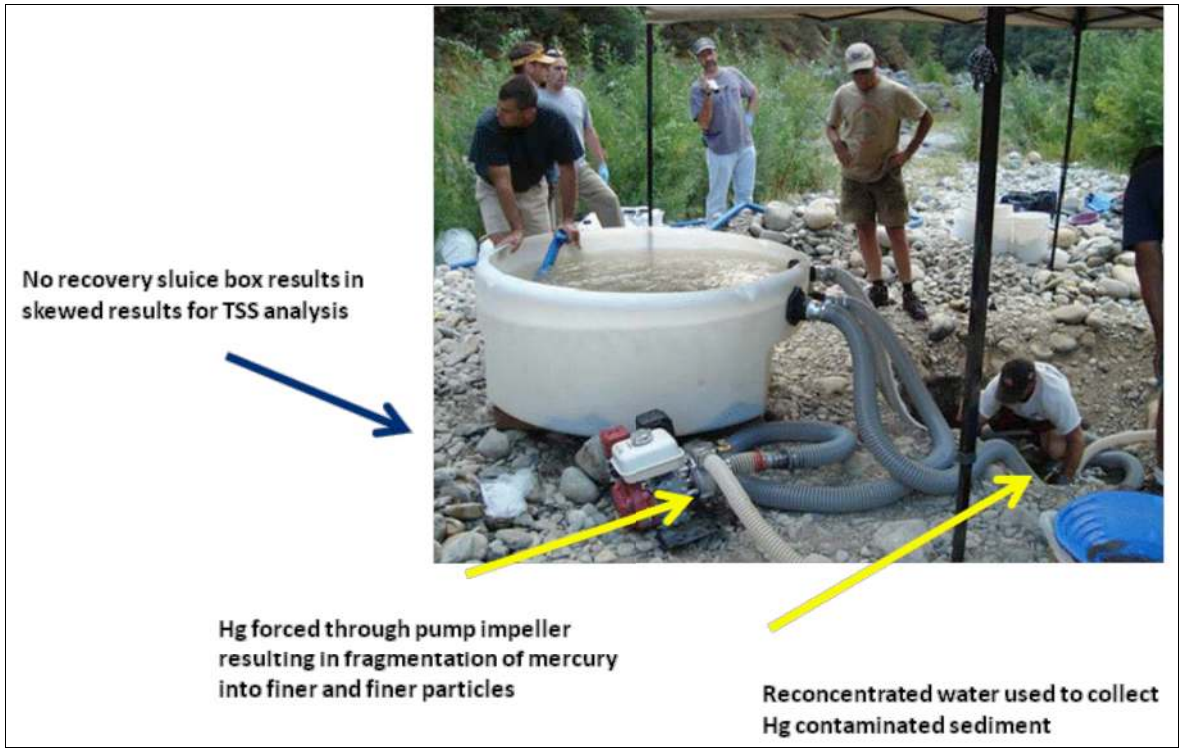

Figure 4. Experiment Setup for Alper's Recirculating Test

Recommendations

(1) The SEIR should cite the efficiency rate of suction dredges as a beneficial aspect of dredging

(2) The analysis in the SEIR in regards to watershed loading must account for the removal rate of mercury using the only study that has provided a rate – Humphreys and the 98% removal rate

(3) The use of Dr. Alpers data should be discarded based on not representing actual suction dredge operation which was the intended purpose. Humphreys found that 98% of mercury was removed and additionally the circulation of mercury through the impeller of the pump does not represent how mercury is recovered and creates fragmentation rates that are not realistic. Any reference or analysis based on the Alpers results should be discarded from the SEIR.

(4) A government program should be established to receive mercury from gold dredgers in convenient locations throughout mining country. The capability should include an on-the spot retorting capability to separate the amalgam. Such a program would be far cheaper than the program contemplated by Humphreys and would provide miners free retorting.

CEQA Pg 226
15384. SUBSTANTIAL EVIDENCE

(a) "Substantial evidence" as used in these guidelines means enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion, even though other conclusions may be reached... ***Argument, speculation, unsubstantiated opinion or narrative, evidence which is clearly erroneous or inaccurate****, or evidence of social or economic impacts which do not contribute to or are not caused by physical impacts on the environment does not constitute substantial evidence."*

It is inappropriate in light of the CEQA requirements to only evaluate the data in scientific reports that is negative while completely ignoring the evidence in the same reports that would lead to an opposite conclusion. An example of this cherry picking of data is provided above in the Alpers analysis. As represented the analysis was intended to depict the mercury emissions from a dredge under operating conditions while not replicating operating conditions in the least. The SEIR uses this analysis as the basis for far reaching conclusions unsubstantiated by fact.

In the Fleck report, the SEIR ignores the results of the actual test of the 3" suction dredge in 2007 under normal conditions dredging a hole in the same vicinity as the hand dug pits 1 and 2. Other than the Humphreys effort this was the only evaluated dredge test in the literature. Two actual dredge tests and the SEIR fails to mention the results – yet it finds sufficient data in other parts of the same reports to reach conclusions about actual dredging – ignoring the actual dredge tests.

Actual Dredge Test Results from 2007 3" Dredge Test [Fleck Study]

"Dredging appeared to have no major effect on pMeHg concentrations in the South Yuba River during the dredge operations. Concentrations of pMeHg in environmental samples were approximately twice those in the field blanks (table 4) ..." [Fleck]

Figure 5 provides the results from the 3" dredge test. These results are stunning, yet the SEIR doesn't mention that measured MeHg was zero in 3 hours of dredging. No Hg(II)r was produced and the fine THg was equal to the field blanks. The total Hg measured in nanongrams was less than 1 part per trillion.

Site	Collection Date	Time relative to start of dredging (hours)	THg_{SS} (ng/g)	pTHg (ng/L)	fTHg (ng/L)	$MeHg_{SS}$ (ng/g)	pMeHg (ng/L)	fMeHg (ng/L)	$Hg(II)_{R-SS}$ (ng/g)	% $MeHg_{SS}$	% $Hg(II)_{R-SS}$	TSS (mg/L)
Field blank	11-Oct-07	-1	<MDL	<MDL	0.67	nd	nd	<MDL	<MDL	nd	nd	0.1
Field blank	12-Oct-07	24	<MDL	<MDL	0.38	nd	nd	<MDL	<MDL	nd	nd	0.0
SYR-MP	11-Oct-07	1.5	421	0.84	nd	nd	nd	0.015	<MDL	nd	nd	3.0
SYR-MP	11-Oct-07	3	440	0.48	0.57	5.2	0.012	0.021	<MDL	1.2	nd	2.1
SYR-MP	12-Oct-07	24	670	0.17	nd	nd	nd	0.041	<MDL	nd	nd	0.5
SYR-EP	11-Oct-07	-1	717	0.43	0.53	14.2	<MDL	<MDL	<MDL	2.0	nd	1.0
SYR-EP	11-Oct-07	1	338	0.54	0.47	8.4	<MDL	0.012	<MDL	2.5	nd	1.5
SYR-EP	11-Oct-07	3	510	0.68	0.53	5.9	<MDL	0.011	<MDL	1.2	nd	1.6
SYR-EP	12-Oct-07	24	410	0.20	1.08	13.3	<MDL	0.008	<MDL	3.2	nd	0.8

Figure 5. Results of 3" Dredge Test by Fleck et al 2007

- Particulate MeHg – not detectable
- MeHg – increased by 14 trillionths of a gram (14.2 ng/g)
- fTHg – decreased prior to dredging to dredging operations (.53 ng/l to .47 ng/l after 1 hour of dredging)
- Hg(II)r – not detectable with a sensitivity of .40 ng/l

The SEIR and the Fleck report both state that the report would cover the effectiveness of using a suction dredge to recover mercury from the streambeds – but they don't. For over 40 years now suction dredgers have been recovering mercury for free so the question of the effectiveness of the dredge is a valid research topic relative to the creation of the regulations.

The results of both actual dredge tests provide highly positive results for the effectiveness of suction dredges and the extremely small amount of mercury released compared to the mercury recovered. Yet the SEIR doesn't consider this in determining "Substantial and Unavoidable." This is absolutely incorrect. To further examine the flaws in the data and

analysis you have to dig deeper into the actual results and the bias inherent in the results that created a wildly inaccurate portrayal of the cumulative effects of dredging.

FLAWS IN ANALYSIS

This section provides my analysis of the data presented by Fleck, reported by the SEIR that results in a finding that very few suction dredgers would create sufficient mercury to equal the entire watershed load. To evaluate this finding required considerable time spent looking at the reported numbers. What I found was clear bias.

First we'll look at the reporting of the results from the 3" dredge test. The reports create an impossible situation as the amount of mercury in the concentrates exceeds the amount of mercury that should have been in the input (heads material). A few of the problems encountered in evaluating the results of the test included no measurements of kg moved, cubic meters moved and the inaccurate measurements of Hg in the sampling. As opposed to Humphreys, the Fleck study took point samples of the material without measuring the material. This makes it extremely difficult to estimate the THg in the material and validate the numbers. The reason this is relevant to the SEIR and the proposed program is again, the SEIR fails to mention the extreme effectiveness of a suction dredge in removing mercury. The flaws in data collection are clearly shown in the graphs in Figure 6 and 7.

The Humphrey's 2003 study of mercury recovery in the American River [Humphrey's 2005] proved the effectiveness of an older style "crash box" dredge in recovering mercury at 98%. Humphrey's measured the total mercury prior to dredging, the mercury in the sluice box and the mercury in the tailings.

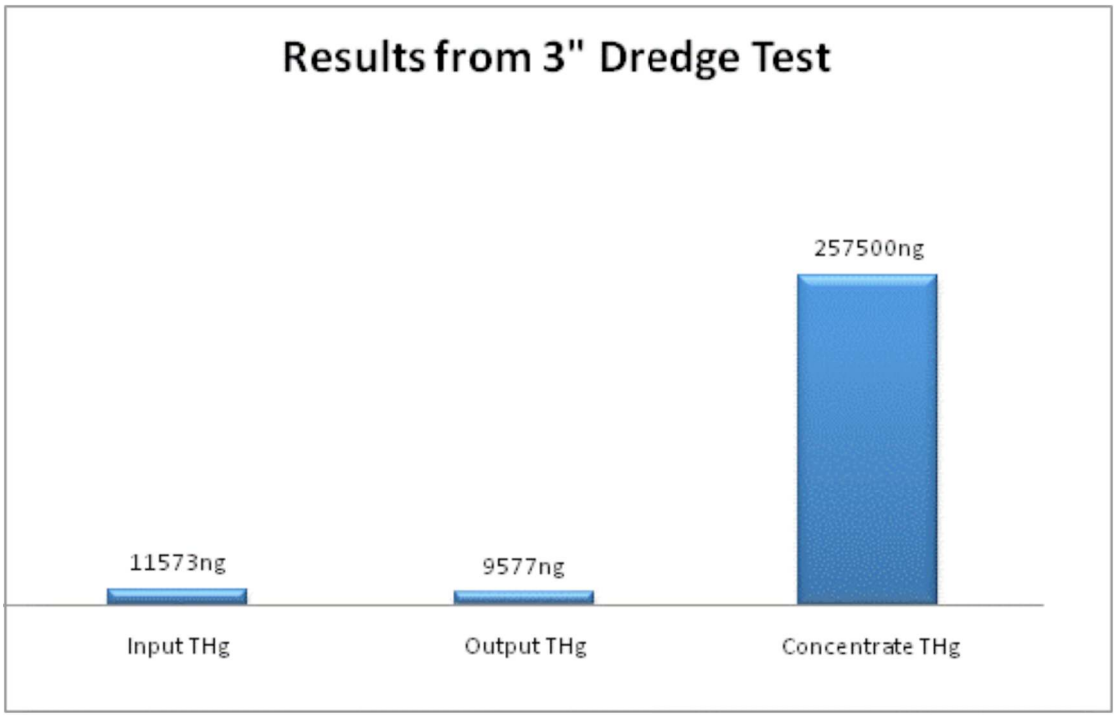

Figure 6. Fleck Reported Results for THg in 3" Dredge Test

This study was known to Fleck and Humphrey's participated in the dredging study on the Yuba – yet the Fleck study did not measure the total mercury prior to dredging or after dredging. The Fleck study merely sampled the incoming and the tailings to take point samples of mercury in ng/g.

Figure 7 provides the results as they must have been at a minimum as shown below.

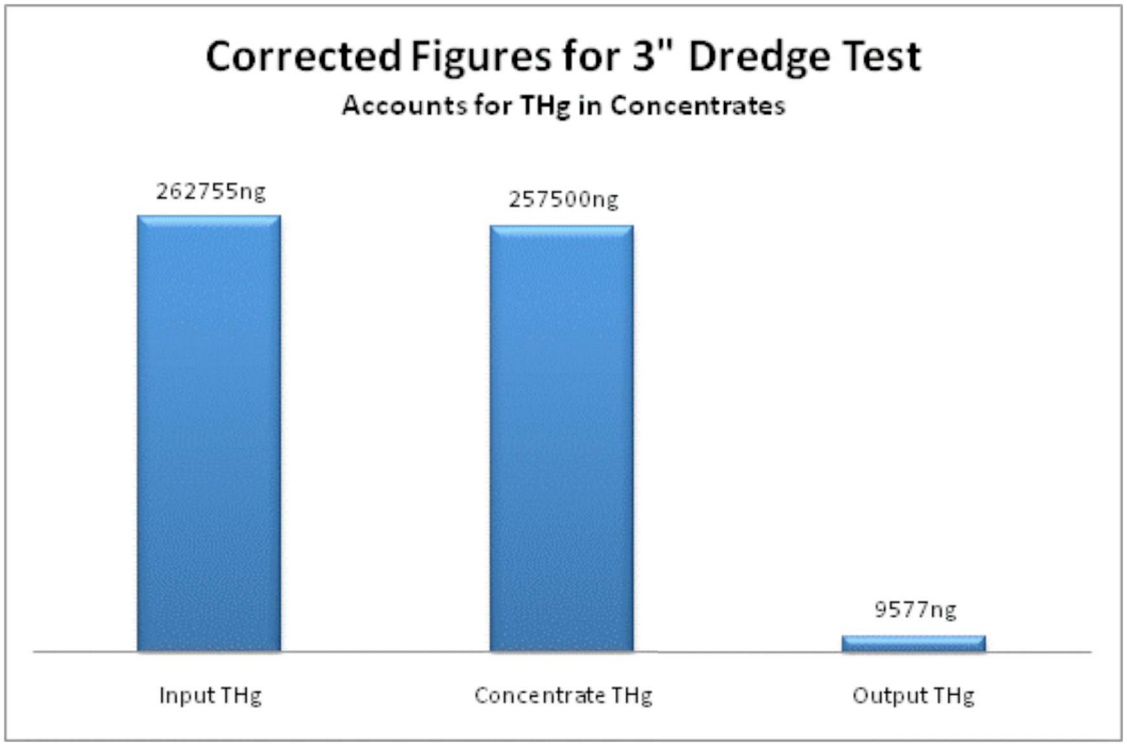

Figure 7. 3" Dredge Test Results as Corrected

It is clearly impossible to capture more mercury in the sluice box than was in the incoming gravel. The study distorts the relationship by stating the measured Hg in the incoming and tailings sample were about the same. That would be impossible given the measured Hg in the concentrates.

Figure 8 below provides the source data upon which the preceding graphs are based. This is relevant to the SEIR and the proposed program in that ***we now have shown that the only two real dredge tests demonstrated the extraordinary ability of a dredge to capture mercury while limiting the emissions from the dredge to less than 10% of the California Hazardous Material Threshold levels.***

Table 5. Mercury concentrations in sediment samples collected during the October 2007 dredge test, South Yuba River. All concentrations are on a dry weight basis.

[hr, hour; THg, total mercury; MeHg, methylmercury; $Hg(II)_R$, reactive mercury (II); %, percent; ng/g, nanogram per gram (or part per billion); <, less than; MDL, method detection limit; mm, millimeter]

Sediment type	Size fraction	Percent of total sediment in size fraction (%)	Time (hr)	THg (ng/g)	MeHg (ng/g)	Percent MeHg (%)	$Hg(II)_R$ (ng/g)	Percent $Hg(II)_R$ (%)
Heads	< 1.0 mm	1.14	0-1	22.9	< MDL	< MDL	1.55	6.75
Heads	< 1.0 mm	12.33	1-2	55.8	< MDL	< MDL	1.18	2.12
Heads	< 1.0 mm	2.17	2-3	13.9	< MDL	< MDL	0.34	2.43
Heads	0.063 to 1.0 mm	1.25	0-1	124	< MDL	< MDL	1.95	1.58
Heads	0.063 to 1.0 mm	12.22	1-2	46.5	< MDL	< MDL	1.01	2.18
Heads	0.063 to 1.0 mm	2.12	2-3	36.6	< MDL	< MDL	0.41	1.12
Tails	< 1.0 mm	32.56	0-1	15.9	< MDL	< MDL	0.79	4.96
Tails	< 1.0 mm	10.76	1-2	18.6	< MDL	< MDL	0.66	3.54
Tails	< 1.0 mm	9.12	2-3	37.1	< MDL	< MDL	0.58	1.55
Tails	0.063 to 1.0 mm	32.75	0-1	83.0	< MDL	< MDL	0.51	0.61
Tails	0.063 to 1.0 mm	10.58	1-2	25.1	< MDL	< MDL	1.35	5.37
Tails	0.063 to 1.0 mm	9.06	2-3	78.2	< MDL	< MDL	0.33	0.42
Concentrate	< 1.0 mm[1]	95.42	0-2	137	0.022	0.016	1.16	0.84
Concentrate	< 1.0 mm[1]	95.35	2-3	211	nd	nd	1.24	0.59
Concentrate	0.063 to 1.0 mm[1]	95.65	0-2	4,570	< MDL	< MDL	0.93	0.02
Concentrate	0.063 to 1.0 mm[1]	95.70	2-3	10,300	nd	nd	1.66	0.02
Concentrate	0.0003 to 0.063 mm[1]	0.23	0-2	14,300	1.1	0.008	83.2	0.58
Concentrate	0.0003 to 0.063 mm[1]	0.36	2-3	3,210	0.92	0.029	28.3	0.88

[1] Concentrate samples pre-sieved through 20-mesh screen.

Figure 8 – Fleck Results of 3" Dredge Test

Given the Fleck data and the gaps in data that make comparison difficult, the levels reported by Fleck had to be normalized to some type of meaningful numbers to provide total Hg in the incoming, concentrates and tailings. The only study available that has done this under field tests and scientific methods was Humphreys. In Table 3 below I provide the calculations used to estimate the total Hg from the Fleck study by using both the estimated material moved based on dredge rates and time spent.

A summary of the Fleck tables above is provided in Table 3 below.

Calculated Total THg from Table 5 in Fleck Report - Accounting for kg moved						
	<1.0mm	.063 to 1.0mm	Hour 1 OBD	Hour 2	Concentrates	
	Hour	Hour	Dredge Rate	CSL	Weight in kg	Total Reported THg
	0-1 max	1-2 max	in kg/hr max	in kg/hr max		measured in ng
Input Material	55.8	124	67	160		**11,573.00**
Output Material	83	25.1	67	160		**9,577.00**
Concentrates		10300			25	**257,500.00**
Using a dredge recovery efficiency rate of 98% [Humphrey's 2005] starting Hg must be at least:						**262,755.10**

Table 3. Comparison of the Dredge Effectiveness Given Fleck's Research Data

To derive this table I used only the results from hours 0-2 as Fleck moved the dredge location for hour 3 and it seems two hours of dredging is a fair amount of time to base the results on.

Fleck did not report the total weight of material moved for the dredge test so I used the unmodified numbers provided to Fleck by Keene engineering to derive a total kg/hr rate for material moved for hours one and two. For hour 1, based on the Keene (manufacturer) estimates would be 67 kg and for hour two (dredging in more compact layers) would by 160 kg/hr. To be fair I used the highest reported THg in ng/g as reported by Fleck and multiplied the reported THg by material moved to determine a total mercury level in nanograms.

As shown above in the data provided by Fleck the total mercury present in the input material would be only 11,573 ng and the output material would have a total of 9,577 ng. However, somehow the sluice box ended up with a total of 257,500 ng of mercury in 25kg of concentrates. This is impossible and throws into doubt the entire sampling technique used by Fleck. A more accurate approach was used by Humphreys in 2003 of weighing the input material and output material. Fleck didn't do this for the 3" dredge test. As shown the input material would HAVE to have had at least 262,755 ng of mercury given a dredge efficiency rate of 98%. It is impossible given Flecks numbers to have acquired that much mercury in the concentrates with such a low input number.

As proved by Fleck the mercury is not being methylated – measured levels were zero (Fleck Table 4, page 40 of Report). The measured Hg(II)r levels in ng/g were lower – across the board than the measured Hg(II)r levels in the incoming gravel (see Figure 1 above). From Fleck's data it is **strongly** indicative that a suction dredge is both highly efficient at removing mercury and is providing no MeHg or Hg(II)r into the environment. It is striking that the SEIR reaches just the opposite conclusion but not surprising as the SEIR used large portions of the Fleck report to derive its conclusions. Notably absent is any mention that a dredge is removing 98% of the mercury from the environment (for free and without a government program) and that testing has shown extraordinarily small levels of Hg(II)r and no levels of MeHg.

The only conclusion you can reach is the SEIR is intentionally avoiding the topic of how much mercury a dredge captures. As shown in Figure 8 above the measured MeHg downstream from the dredge was zero, but again this isn't mentioned in the SEIR.

Recommendations

The mercury study included in the SEIR is too limited and flawed to be used as a basis to prepare regulations. I believe the mercury study should be discarded from the SEIR and simply replaced with a comment that says there is insufficient scientific information to evaluate the effects of mercury from dredging and additionally CDFG does not have the regulatory authority over mercury. Further I believe the evidence should be peer reviewed by both qualified personnel from the dredging community as well as government personnel prior to being released. I ask that CDFG consider the impact of releasing this type of data based on such limited analysis that contains such serious errors and omissions of important data relative to the conclusions.

EXAMPLES OF FLAWS IN THE ANALYSIS

The SEIR uses the Humphreys 2005 paper to provide a mercury discharge rate of 298 ppm but fails to mention the dredge was purposely recovering liquid (elemental) mercury and the purpose of the study was to recover mercury – the operators were literally dredging mercury ***"Team members used special care to find and dredge large liquid mercury droplets as well as mercury-laden sediment from the site." [Humphreys Report, 2005***]. Secondly, the study additionally fails to mention the findings of the Humphrey's report which showed an unmodified 4" gold dredge of a type less efficient than current models recovered 98% of the mercury with the remaining 2% being deposited in the sediments in the tailings meaning 100% of the mercury was accounted for.

Bedrock Contact Layer for Pit #2. As stated the bedrock contact layer in Pit #2 had high concentrations of mercury (Hg(II)r). In the SEIR they state that the fine particles of pit #2 had 2-3 orders of magnitude more mercury mass than pit #1. The SEIR then uses the data provided by Fleck to perform calculations for suspended mercury in regards to watershed loading rates. However, the Fleck study used a closed circuit test, not using a dredge with a sluice box and purposefully introduced the output from the bedrock material into a tank to study the effects of suspended particulates and mercury. It did not attempt to characterize what this effect would be in the real world. The SEIR takes these results (no sluice box and standing water) and uses them to calculate THg loading. The SEIR uses this material even though the Fleck test found no levels of Hg(II)r or MeHg were being output by the dredge with the sluice box.

Additionally the Fleck study found that in using the closed system test the suspended mercury tended to attach itself over time to the finer particles in higher and higher densities – this would indicate that the finer particles themselves would become denser and would precipitate out as they collected mercury from either the dredge or other sources. The Fleck report, being conducted in a closed tank, used a water body

unaffected by movement which would indicate that the collection of mercury on the fine particles would not occur at the same rate during transport in the stream. All of the suspended particle analysis must be thrown out as the method used to create the fine particles included running contaminated water repeatedly through the impeller of a pump (not the way material is processed in a dredge), the material was likely run through the impeller over a thousand times according to witnesses of the test. ***The closed circuit test does not represent the results from an actual dredge test.***

MERCURY REMOBILIZATION

The issue of the release of mercury that would otherwise be "locked" in a sediment layer is used as an argument against suction dredging. The material from Pit 1 and 2 were collected by digging with a shovel and pick – not using a dredge so any measurements we use from these pits we must be cautious – none of the analysis provides a capture rate [See Humphreys 2005].

the following section shows how a completely different conclusion can be reached by simply using the above analysis of time and material to accurately compute mercury remobilization rates. To begin we'll use the typical dredge hole which is presented well in the Fleck report – the typical dredge hole is far wider at the top than the bottom, as Fleck reported it is 4x larger at the top than the bottom.

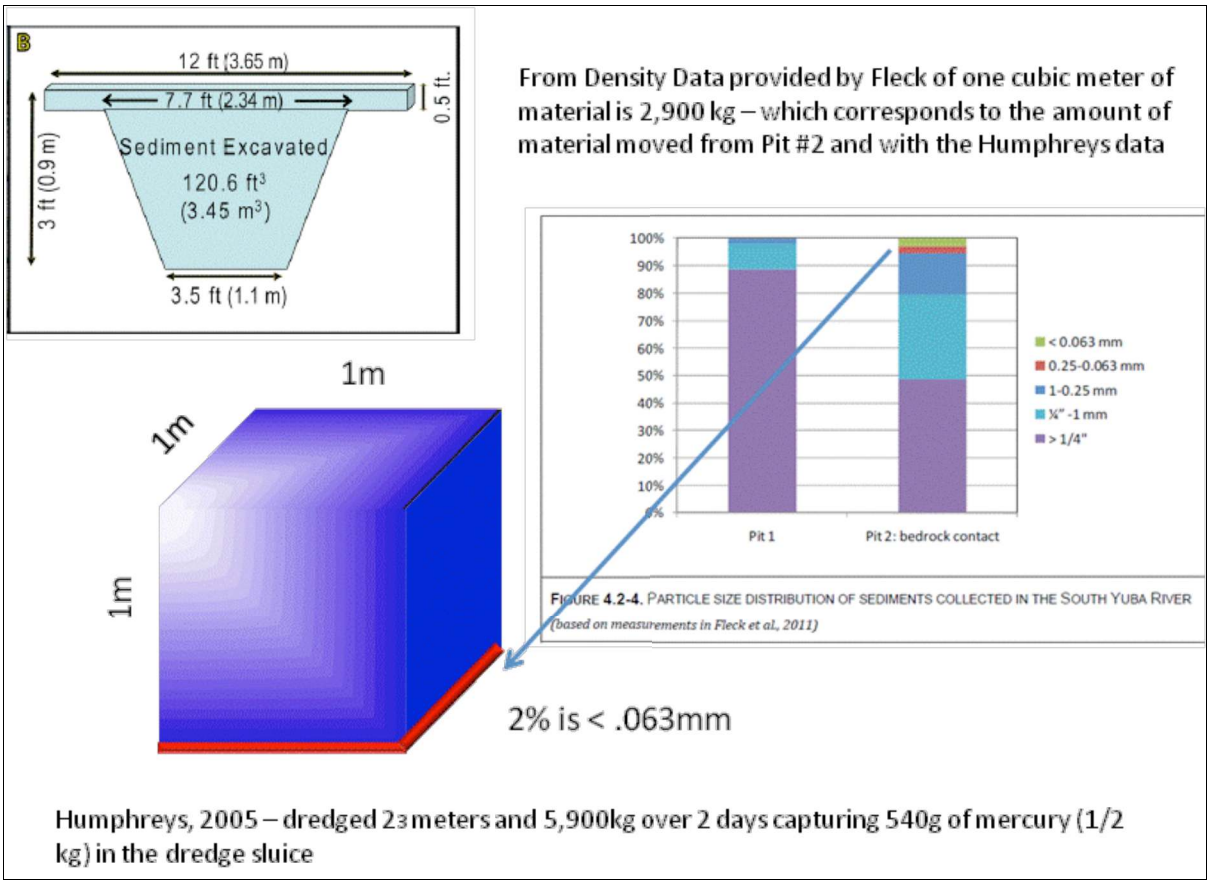

Figure 9. Construction of a Dredge Hole

The variables needed are the amount of fine particulates and the amount of time spent moving that material. As Fleck reports it is a fraction of the time, the SEIR does not account for the fraction of time, but assumes that all material being moved is less than .063mm. To evaluate this we will deconstruct Fleck's test pit #2.

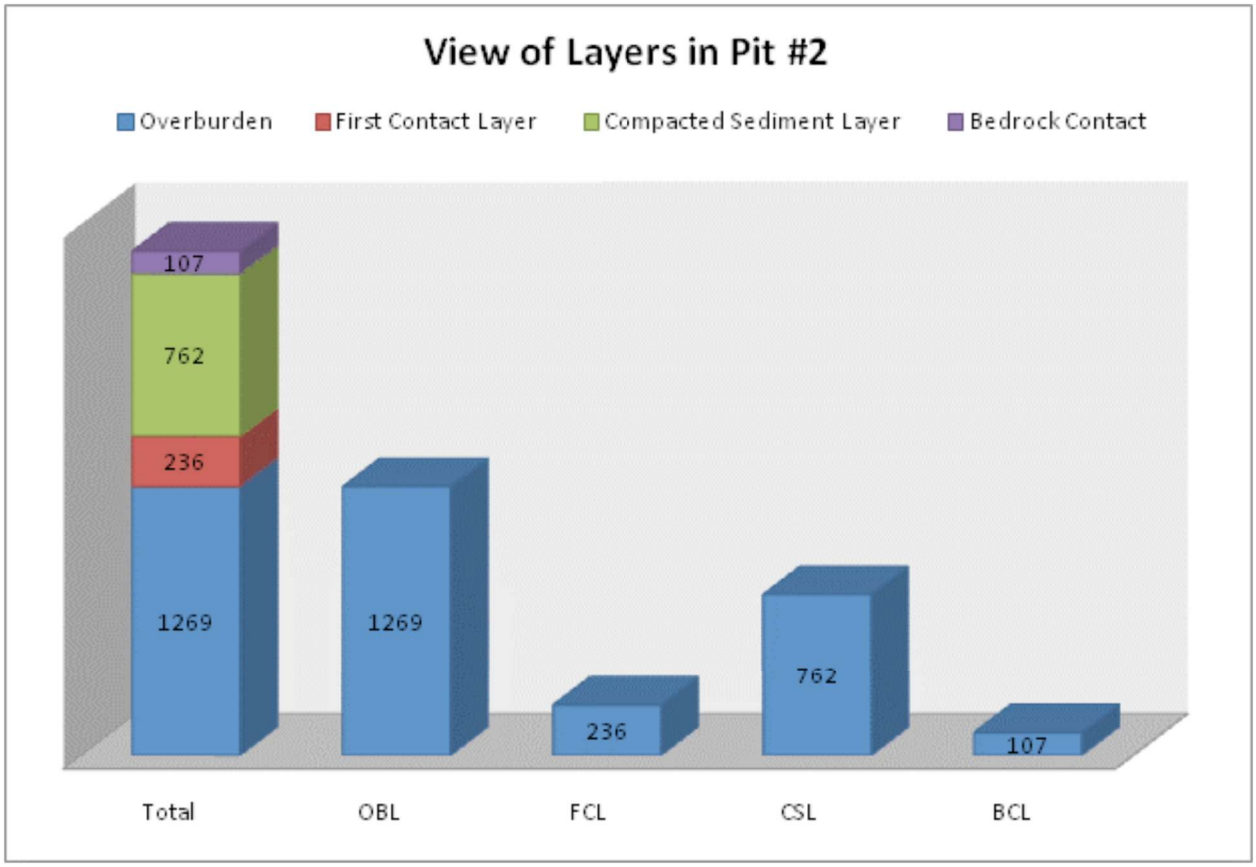

Figure 10. Composition of Test Pit #2

Figure 10 clearly shows what is known to suction dredgers – you have to move a lot of material to get to the bedrock zone. Moving this material takes time and to evaluate the release of mercury by suction dredges we have to estimate the material moved over time – in other words how long would it take to dredge Pit #2 – if it was dredged. Using the data provided by Keene Engineering for expected dredge material rates in different types of materials Table 4 is provided as a measure of time required to dredge each layer. Table 4 provides a summary of time required.

Layers	Amount of Material in Kg	% of Total	Keene Eng Reported Dredge Rates in kg/hr	Hours required to dredge
Overburden Layer (OBL)	1269	53%	112	11.33
First Contact Layer (FCL)	236	10%	128	1.84
Compacted Sediment Layer (CSL)	762	32%	266	2.86
Bedrock Contact Layer (BCL)	107	5%	290	0.37
Total Material From Pit #2	2374	100%		16.41

Table 4. Time Required to Dredge Pit #2 – If it was actually dredged

Graphically this is shown in Figure 11.

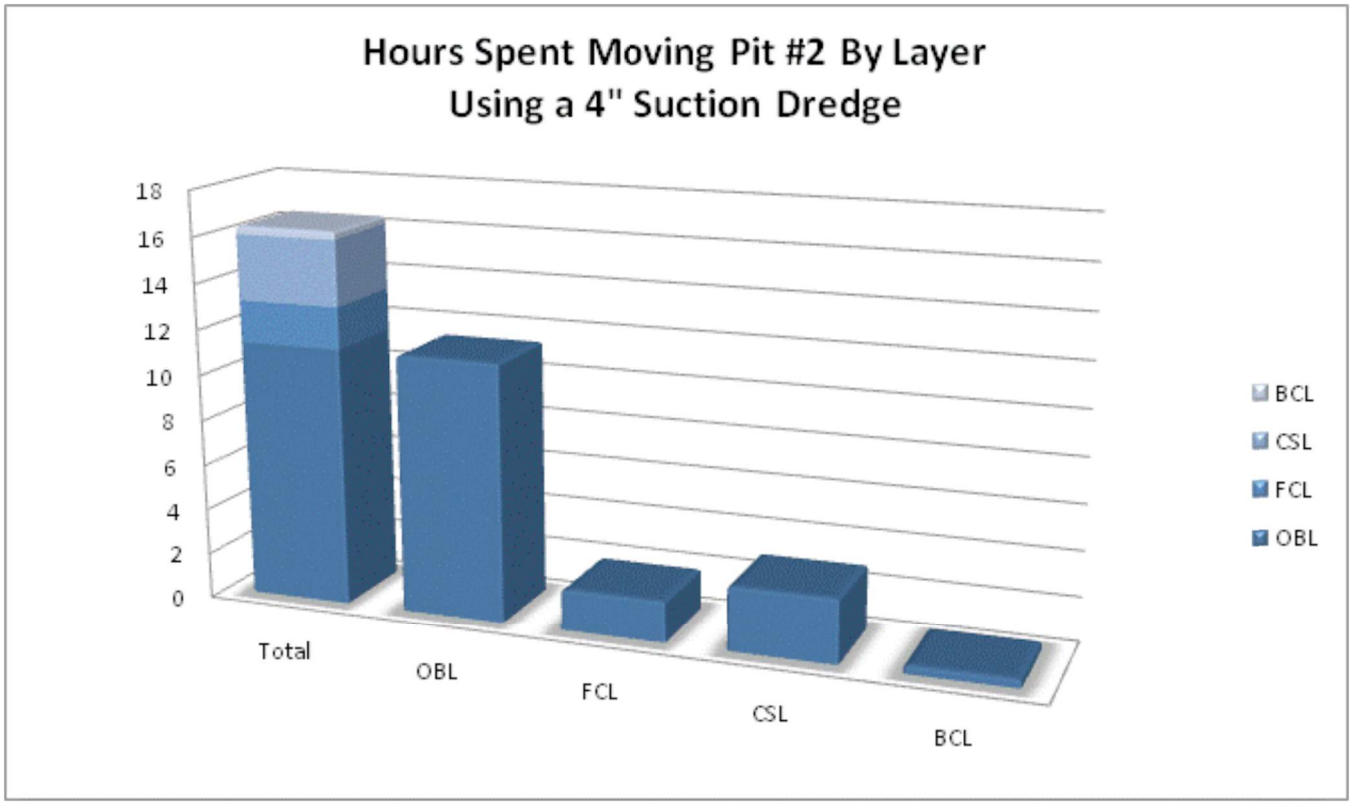

Figure 11. Time Spent Dredging Pit #2

The basis for the follow on discussion in this paper is provided in Figures 10 and 11 – time and material. The DSEIR assumes that all material moved is <.063 but does not account for the total material or time required to reach that layer. As is clearly shown from the data provided from Fleck, and using the Keene provided dredge material

movement rates (unmodified) the time spent moving material on the bedrock would be approximately 20 minutes out of 16 total hours spent dredging. Having spent over 15 years dredging, that number sounds about right.

A second factor that any experienced dredger would confirm is the high percentage of holes that you just quit on before ever reaching the bedrock layer. Dave McCracken reports that the maximum depth reach of a 4" dredge is 4', the maximum of a 5" is 5' and so forth [Dave McCracken written comments to CDFG dated 10 April 2011]. I have found through experience this to be the case. Often you begin a hole without knowledge of the level of overburden on the bedrock (sample pit). I would assume that at least 30% of the holes I begin on – I abandon because they exceed the depth reach of my 4" dredge. In other words the time consumed to reach the pay layer exceeds the potential payoff because as shown above the amount of material is exponential, not linear. In other words I would have to remove a ton of material to reach an ounce of material. This quirk of gold dredging isn't accounted for in the time studies by Fleck and picked up on in the SEIR. Rather the SEIR assumes that all the material moved is <.063mm.

Next we need to deconstruct each layer of the Test Pit #2 to determine how much total mercury was available for extraction from each layer. As the test only sampled the mercury and did not have any means to process all the mercury and remove it and measure it – all measurements are based on point samples from the layers.

Overburden Layer Breakdown

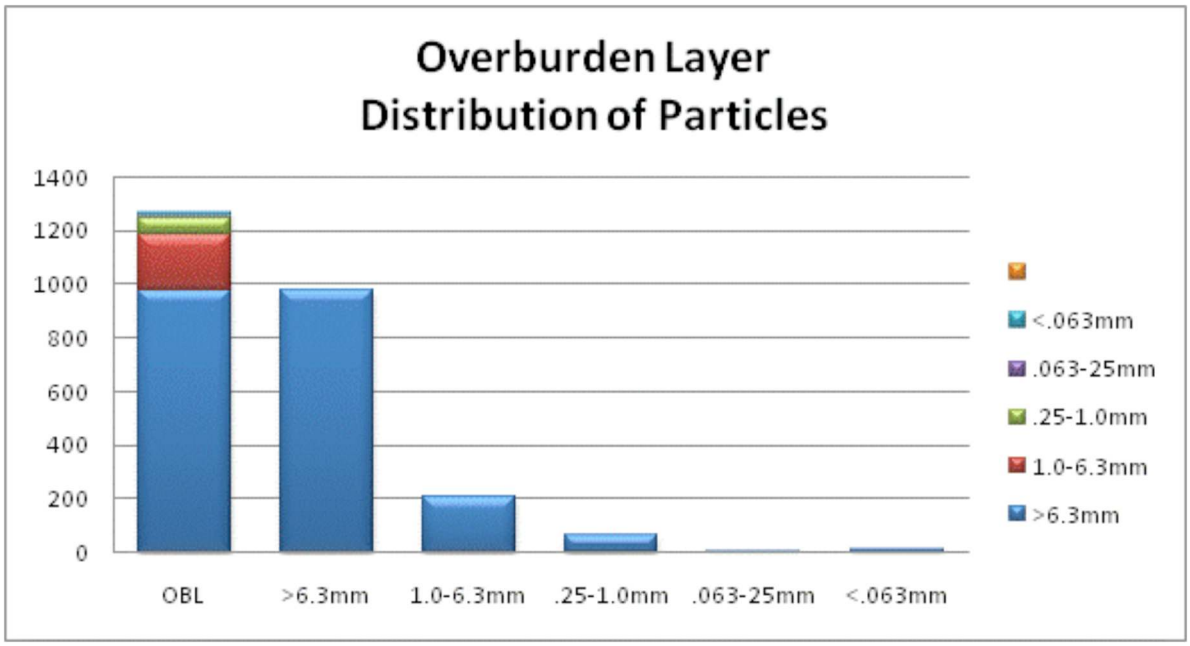

Figure 12. Distribution of Particles By Size in the Overburden

Given the above distribution of particles in the overburden layer, where as shown earlier we have spent almost 11 hours dredging it is worthwhile to ask how much total mercury did we mobilize? Results in THg from the Overburden Layer are:

Overburden Layer - Analysis of THg Produced During Dredging						
	Kg of Mtl	THg in ng/g	THg in mg/kg	THg in mg	Dredge Rate kg/hr	Time in hrs
>6.3mm	977	0	0	0	112.00	8.7
1.0-6.3mm	207.2	0	0	0	128	1.6
.25-1.0mm	65.3	47	0.047	3.0691	266	0.2
.063-25mm	6.5	108	0.108	0.702	290	0.022
<.063mm	13.1	139	0.139	1.8209	290	0.045
Total	1269.1			5.592		10.7

Table 5. Total Mercury From the Overburden Layer Based on Kg Moved

The Overburden layer likely had randomly distributed particles of <.25mm and no further breakout is required as a constant rate of input and output would be assumed. The total mercury in this layer is 5.5 mg with an average mercury level of .004 mg/kg far below the threshold for mercury set by the California Department of Toxic Substance Control.

First Contact Layer Breakdown

The next layer encountered and defined in Pit #2 is the first contact layer which would require a relatively small amount of time to remove compared to the overburden layer.

First Contact Layer - Analysis of THg Produced During Dredging						
	Kg of Mtl	THg in ng/g	THg in mg/kg	THg in mg	Dredge rate kg/hr	CA Time in hrs
>6.3mm	150	0	0	0	112.00	1.3
1.0-6.3mm	70.2	0	0	0	128	0.5
.25-1.0mm	11.9	180	0.18	2.142	266	0.0
.063-25mm	1	635	0.635	0.635	290	0.003
<.063mm	3	1550	1.55	4.65	290	0.010
Total	236.1			7.427		1.9

Table 6. Total Mercury and Time from the First Contact Layer

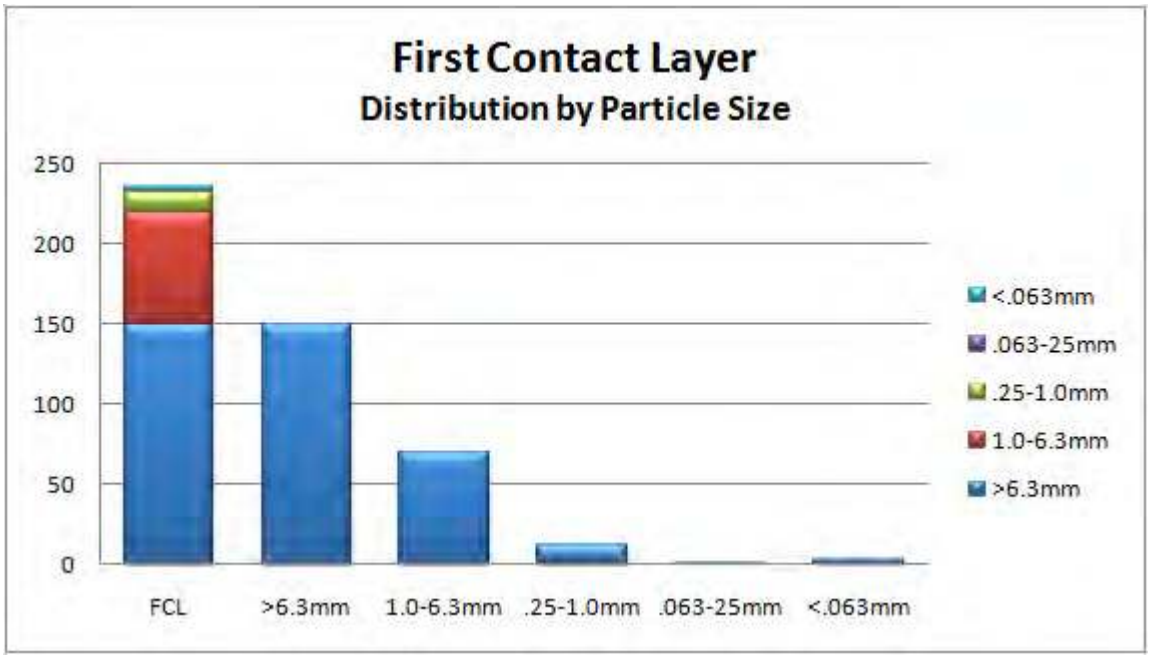

Figure 13. The First Contact Layer Particle Size Distribution

Table 6. THg from the First Contact Layer in mg

We have now dredged for nearly 13 hours and we are still far below the threshold for levels that would exceed the California Hazardous waste criteria. Using the data provided, and the recognition we are dredging in a mercury "hotspot" these results would appear to merit some discussion in the DSEIR.

Compacted Sediment Layer Breakdown

The distribution of particles from the Compacted Sediment Layer is provided in Table 7.

Compacted Sediment Layer - Analysis of THg Produced During Dredging						
	Kg of Mtl	THg in ng/g	THg in mg/kg	THg in mg	Dredge rate kg/hr	Time in hrs
>6.3mm	503	0	0	0	112.00	4.5
1.0-6.3mm	140.7	0	0	0	128	1.1
.25-1.0mm	85.8	455	0.455	39.039	266	0.3
.063-25mm	17	1630	1.63	27.71	290	0.059
<.063mm	15.5	10500	10.5	162.75	290	0.053
Total	762			229.499		6.0

Table 7. Mercury vs. Time for the Compacted Sediment Layer

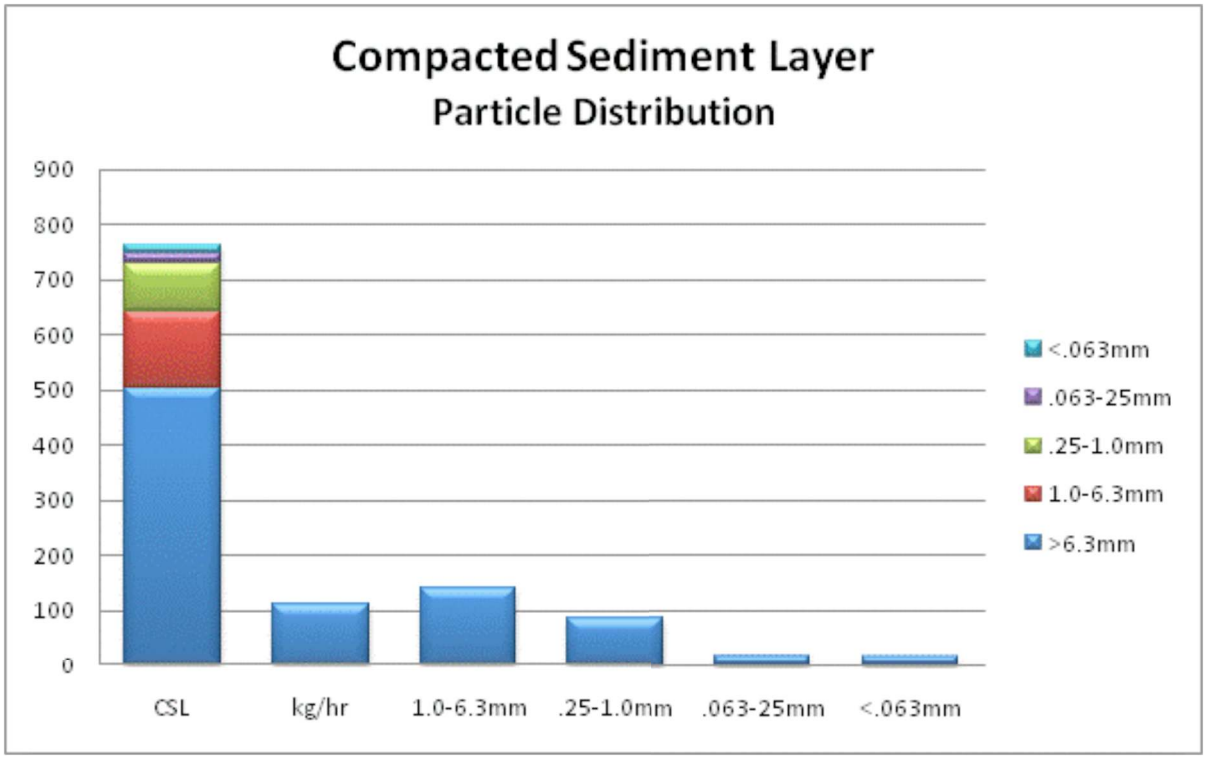

Figure 14. Compacted Sediment Layer Particle Distribution

We're finally in a layer that has a high density of material. But let's evaluate these findings against the threshold for hazardous waste. We have produced 229 mg of mercury (we will leave off the discussion of capture rates for now). The hourly rate for this would be 38mg per hour. How long were we dredging in the enriched sediment? Six minutes out of the total 6 hours of dredging time to move the material. How do we compare to the threshold limit for hazardous waste? Based on kg moved and THg recovered in mg we have a rate of .3mg per kg again far below the threshold of 20mg per kg.

Bedrock Contact Layer Breakdown

Bedrock Contact Layer						
	Kg of Mtl	THg in ng/g	THg in mg/kg	THg in mg	Dredge rate kg/hr	Time in hrs
>6.3mm	52	0	0	0	112.00	0.5
1.0-6.3mm	33	0	0	0	128	0.3
.25-1.0mm	16	515	0.515	8.24	266	0.1
.063-25mm	3	1150	1.15	3.45	290	0.010
<.063mm	3	11100	11.1	33.3	290	0.010
Total	107			44.99		0.8

Table 8. Mercury vs. Time for the Bedrock Contact Layer

After nearly 19 hours of dredging we have finally reached the layer we are targeting – bedrock. In reaching this layer and cleaning it we have mobilized 45 mg of mercury. This equates to .42mg per kg moved – again far below the threshold. How long did we spend in the layers less than .25mm including the fine particulate less than .063mm? About 1 minute.

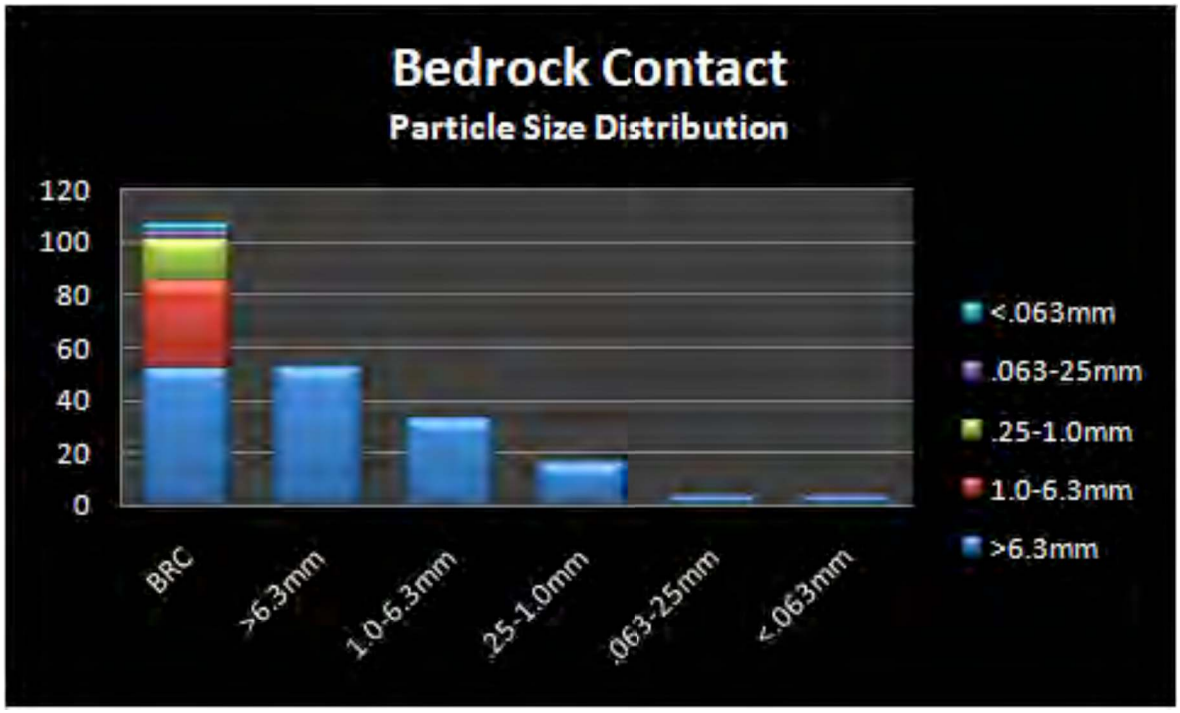

Figure 15. Bedrock Contact Layer Particle Distribution

Surprisingly, despite the SEIRs alarmist writings we find that even in the lowest and densest material we still have only a fraction of the material that is less than .063mm. Of particular interest is this layer would require less than one hour of dredging time to completely recover all the material. The yield of total mercury from this layer is significantly less than the yield from the compacted sediment layer – likely this is due to the difference in material moved: 762 kg vs. 107 kg. If multiplied out the two yields would be relatively the same.

From the layer the SEIR concentrates on in attempting to prove the harmful potential of dredging we see yet again that the total mercury produced from this layer is 45mg with 107kg of material moved and a .42 mg/kg rate compared to the threshold of 20 mg/kg set by the State. These are remarkable numbers considering this study was done in a known mercury hotspot (Malakoff Diggin's Output).

Summary of Discussion

The above discussion was based on the data provided in the Fleck study and repeated in the SEIR. The data provides the foundation for the argument in the SEIR that dredges are remobilizing mercury at high rates and that a relatively limited number of dredgers could mobilize more mercury than the entire watershed natural rate. Based on the above breakout of layers in Pit #2 and the time required to move that material a more accurate estimate of mercury released can be provided.

The total mercury mobilized during our two days of dredging Pit #2 is less than one gram as shown below.

Total Mercury Mobilized in Pit #2		
	>.063mm	<.063mm
Layer	THg in mg	THg in mg
Overburden	3.7711	1.8209
First Contact	2.777	4.65
Compacted Sediment	66.749	162.75
Bedrock Contact	11.69	33.3
Totals	84.9871	202.5209

Table 9. Total Mercury Recovered from Pit #2

Given the above, total mercury produced, of interest is how much of this mercury would be released into the tailings versus being captured by the dredge. Using the efficiency rate provided by Humphreys the following calculations estimate the released mercury into the tailings –The release of mercury in the tailings doesn't necessarily mean this mercury was suspended on particulates which could float downstream.

Estimates for Natural Loading Rate for the South Yuba River in Dry Year										
	Input Gravels THg THg in mg	Dredge recovery rate = 98% in mg	THg lost in tailings in mg	Hours spent dredging	Natural Load S. Yuba in mg	Dredge Hg Production in mg/hr	Cumulative time required to reach level	Cumulative THg by level in mg	Adjusted mg/hr rate for cumulative	Hours rqd to reach natural load
OBL	5.592	5.48016	0.11184	11.33	800,000	0.00987083	11.33	0.11	0.00987083	81,046,903.74
FCL	7.427	7.27846	0.14854	1.84	800,000	0.08056407	13.17	0.26	0.01976453	40,476,556.24
CSL	229.499	224.90902	4.58998	2.86	800,000	1.60227648	16.04	4.59	0.28618032	2,795,440.29
BRC	44.99	44.0902	0.8998	0.37	800,000	2.43871028	16.41	5.75	0.35045424	2,282,751.69
Totals	287.508	281.75784	5.75016	16.41		0.35045424	16.41	5.75	0.35045424	2,282,751.69

Table 10. Time Required to Reach Natural Load of S. Yuba River

The above table is in sharp contracts to the SEIR which provides the following graph as the number of dredge hours required to reach the background load.

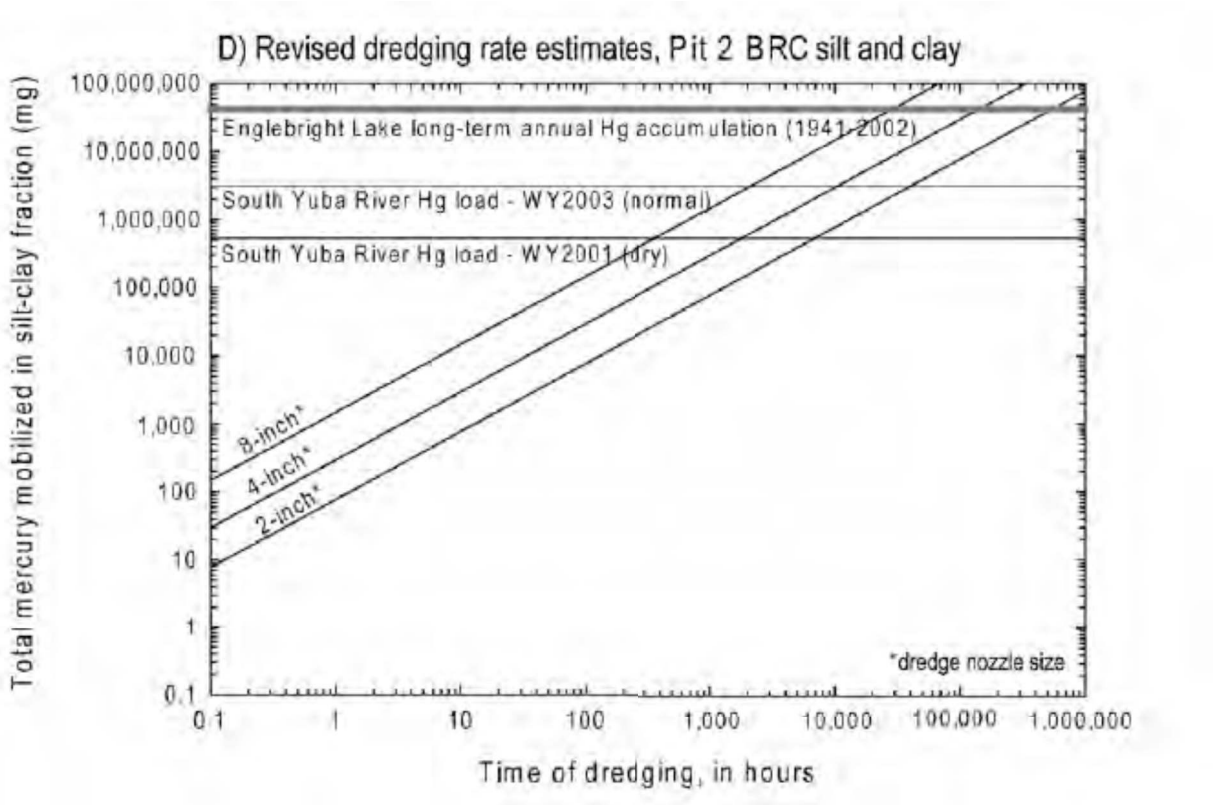

Figure 16. SEIR Analysis of Dredge Hours Required

The SEIR graph (direct extract from Fleck) shows approximately 1,100 hours of dredging would be required to produce the entire natural loading (in mg) of the S. Yuba Rivershed. This is ridiculous. A more accurate calculation, accounting for the fact that 95% of time is spent in accessing the compacted layers yields a total number of dredge hours of 2.8 million. Who's right? First the SEIR does not take into account the cumulative nature of hours spent dredging to reach the concentrated layers, it simply assumes that all output is less than .063mm even though the Fleck report shows that the highest mercury concentrations were in the compacted sediment layer – not the bedrock layer which the SEIR repeatedly claims. It appears the authors of the SEIR did no independent quantitative analysis of the numbers but merely transcribed them from Fleck – and selectively transcribed the numbers that bolstered the position that dredging was harmful while ignoring the analysis required to accurately estimate the effects.

Dredge Discharges as Reported By the SEIR

The complete lack of analysis based on the variables of dredging is notably absent in this discussion. Again it appears the analysis was set up to deliberately show the harm from a dredge. To prove this point I will use the exact same numbers with the analysis shown above relative to dredge rates and material moved to demonstrate how far off the represented numbers are.

SEIR, Figure 4.2-7 is shown below. This figure is important as it begins the discussion of how many dredgers would be required to produce the natural load for the watershed. Only using the figures for the 4" dredge we will use the same numbers to reach an alternate, but fact based conclusion.

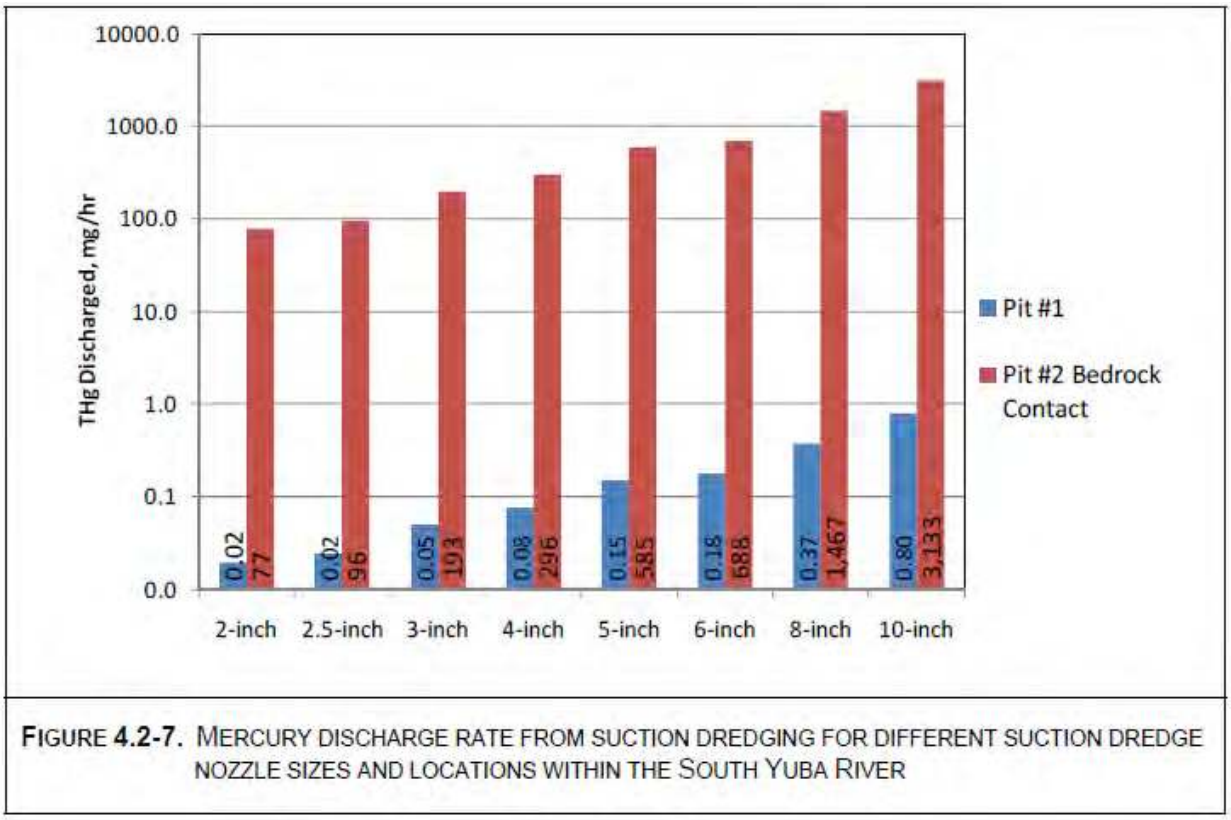

FIGURE 4.2-7. MERCURY DISCHARGE RATE FROM SUCTION DREDGING FOR DIFFERENT SUCTION DREDGE NOZZLE SIZES AND LOCATIONS WITHIN THE SOUTH YUBA RIVER

Figure 17. Chart from SEIR estimating THg Discharge by Dredgers

To analyze the validity of this chart you must determine how it was built. First Table 10c from the Fleck report was used to extract the cubic meters per hour and the sediment in kg/hr that a 4" dredge could move, then the SEIR graphed the THg in mg/hr based on Table 10c. No independent analysis of these results were performed. There is a serious quantitative analysis error here –

Table 10c gives the theoretical maximum amount of mercury that could have been moved assuming that a dredge is operating in only material less than .063mm. This is impossible as proved earlier. It took 16 hours of dredging time to reach the bedrock layer. To refute the chart in Figure 15 as provided in the SEIR you simply need to look at the breakdown of the Bedrock Layer component of Pit #2 and derive time requirements based on the type of material moved. We can easily estimate the total time required to move the component of the layer in the .063mm range:

Bedrock Contact Layer Particle Distribution	BRC	762 Dredge Rate kg/hr	Time Rqd to Dredge mtl	In minutes
>6.3mm	52	112	0.46429	27.86
1.0-6.3mm	33	128	0.25781	15.47
.25-1.0mm	16	266	0.06015	3.61
.063-25mm	3	290	0.01034	0.62
<.063mm	3	290	0.01034	0.62
	107		0.80294	48.18

Table 11. Detailed Breakdown of Time Required to Move Material in the Bedrock Contact Layer

While the chart in the SEIR estimates, using the results from the Bedrock Contact Layer that a single dredger would produce 296 mg of mercury you can see from the above that only 1.2 minutes were spent (after 16 hours of dredging) to move this material. It's an impossible and meaningless calculation provided by the SEIR the equivalent of theoretically asking how long it would take for a dredge to travel to the moon. It can't happen. Under physical constraints of time required to move material to reach the bedrock layer and the amount of material moved it is impossible to ever achieve the rates provided in the SEIR. Using Table 4.2-4 of the SEIR we will carry the argument one step further, as the authors of the SEIR did and examine the human health aspects of this event.

ug/kg reported in Fleck - SEIR					
mg/L TSS mg/L	11106 ug/kg ug/L Pit #2 BC	Time Spent in particles <.063	Released in ug/L	Dredge Efficiency 98%	Particles Released <.063mm
1	0.0111	0.01	0.0001	0.000108839	0.0000022
3	0.0333	0.01	0.0003	0.000326516	0.0000067
5	0.0555	0.01	0.0006	0.000544194	0.0000111
10	0.1111	0.01	0.0011	0.001088388	0.0000222
50	0.5553	0.01	0.0056	0.00544194	0.0001111
100	1.1106	0.01	0.0111	0.01088388	0.0002221
200	2.2212	0.01	0.0222	0.02176776	0.0004442
340	**3.7760**	**0.01**	**0.0410**	**0.0402**	**0.0008196**
Human Health Criterion is .05 ug/L					

Table 12. Evaluation of Table 4.2-4 from SEIR

The first 2 columns of Table 12 exactly match the table used in the SEIR to show the ug/L rate of release from a suction dredge in Pit #2. However, as noted above the SEIR assumes that all the time was moving particles less than .063mm AND assumes that all particles moved become suspended at the TSS suspension rate (false and poor assumption). As exhaustively shown in the previous section the time required to move the material that is less than .063mm is proven to be .01 hours. To derive a realistic

number we have to account for only the fraction of time spent moving that material. To assume the entire dredging time is spent in particles less than .063mm is complete fantasy – a dredgers fantasy for certain. Multiplying the numbers provided in the SEIR by the fraction of time spent moving them provides an entirely different picture of THg mobilized per hour – several orders of magnitude lower and well below the human health criterion.

The SEIR is deceptive in relating Table 4.2-4 to the California Human Health Criterion. The actual criterion is provided below in Figure 18. The SEIR fails to mention that the measurement is a 30 day average. Even if you accept the SEIR data you are still below the health criterion – even if you were dredging solid for 8 hours straight in material less than .063mm you would still average out well below the criterion. This is completely misleading and the selective use of the information does not meet the requirements under CEQA to provide all the facts.

California Toxics Rule (U.S. EPA)	Inland Surface Waters	Human Health (30-day average)	Drinking Water Sources (consumption of water and organisms)	0.05	
			Other Waters (aquatic organism consumption only)	0.051	

Figure 18. California Criteria for Mercury in Waters – Human Health Criterion

Figure 19 provides the total number of dredging hours required to supply the natural load of Hg to the S. Yuba River watershed accounting for the actual number of hours required to produce the load the SEIR claims. the blue dashed line is the existing S. Yuba River load for a dry year. The higher lines are the same numbers used in the SEIR by calculating that all material moved in the time frame is less than .063mm and is from the bedrock layer. The lower calculations account for the cumulative time required to reach this layer and the very short duration spent in this layer – it is a more accurate picture of the impact of dredging.

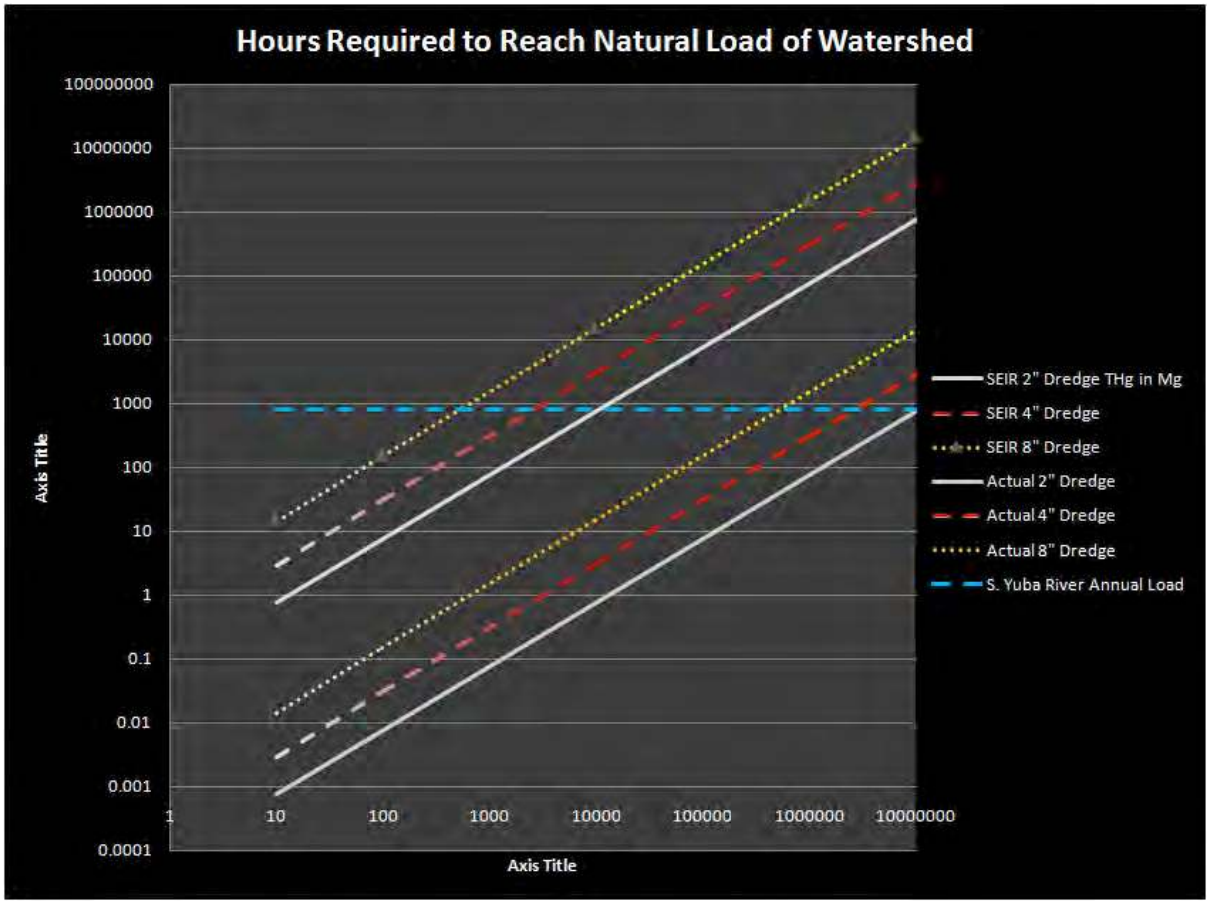

Figure 19 – Computation of Dredging Hours to Supply Natural Load of Hg

The SEIR is wrong by several orders of magnitude and the presentation of the data shows a bias in the outcome as well as a lack of understanding of the cumulative nature of time required to reach the layer under study. It is impossible to achieve the numbers presented in the SEIR. The actual numbers show no realistic number of dredgers could possible contribute the load. Table 13 provides the calculations for the above graph.

Hours Required to Reach Natural Load of the S. Yuba River Watershed Time in hours						
Time Spent Dredging	0	10	100	10,000	1,000,000	10,000,000
SEIR 2" Dredge THg in Mg	0	770	7,700	770,000	77,000,000	770,000,000
SEIR 4" Dredge THg in Mg	0	2,960	29,600	2,960,000	296,000,000	2,960,000,000
SEIR 8" Dredge THg in Mg	0	14,670	146,700	14,670,000	1,467,000,000	14,670,000,000
Actual 2" THg in Mg	0	0.77	7.70	770.00	77,000.00	770,000.00
Actual 4" THg in Mg	0	2.96	29.60	2,960.00	296,000.00	2,960,000.00
Actual 8" THg in Mg	0	14.67	146.70	14,670.00	1,467,000.00	14,670,000.00
S. Yuba River Natural Load THg in Mg	800,000	800,000	800,000	800,000	800,000	800,000

Table 13. Hours Required to Reach Natural Hg Load, S. Yuba River

SUMMARY

The preceding section disputes the conclusions in the SEIR and specifically disputes the finding of "Significant and Unavoidable." As shown from an accurate look at the data there are no feasible number of dredgers that could possible contribute sufficient mercury to exceed the natural load. Secondly, there is no situation in which a suction dredge will exceed the hazardous waste criteria set by the state. It is impossible to achieve the rates the conclusions are based on in the DSEIR and the selective use and exclusion of data discredits both the source experiments and the resulting analysis.

The calculations show that the total time spent within the material less than .063mm is minutes – not hours. There is no real world scenario that could possibly result in a gold dredge exceeding hazard rates.

Finally, the effectiveness of a dredge in capturing mercury- both floured and not floured is not discussed. A 98% capture rate must be applied to all discussions relative to the mercury mobilized by a suction dredge.

FLAWS IN THE ANALYSIS

- To reach the compacted layer requires a cumulative consideration of dredging time, you can't reach that layer without the effort to move the overburden – you must account for the time to reach the layer

- The analysis does not account for any type of dredge efficiency rate which according to Humphreys [government scientist] the rate is 98% capture of mercury

- You can't assume the particles less than .063mm from Pit #2 would have been equal to that collected through a dredge – the sifting process shown in Figure 20 [Fleck] would have resulted in the flouring of mercury that would probably have exceeded any flouring during dredging.

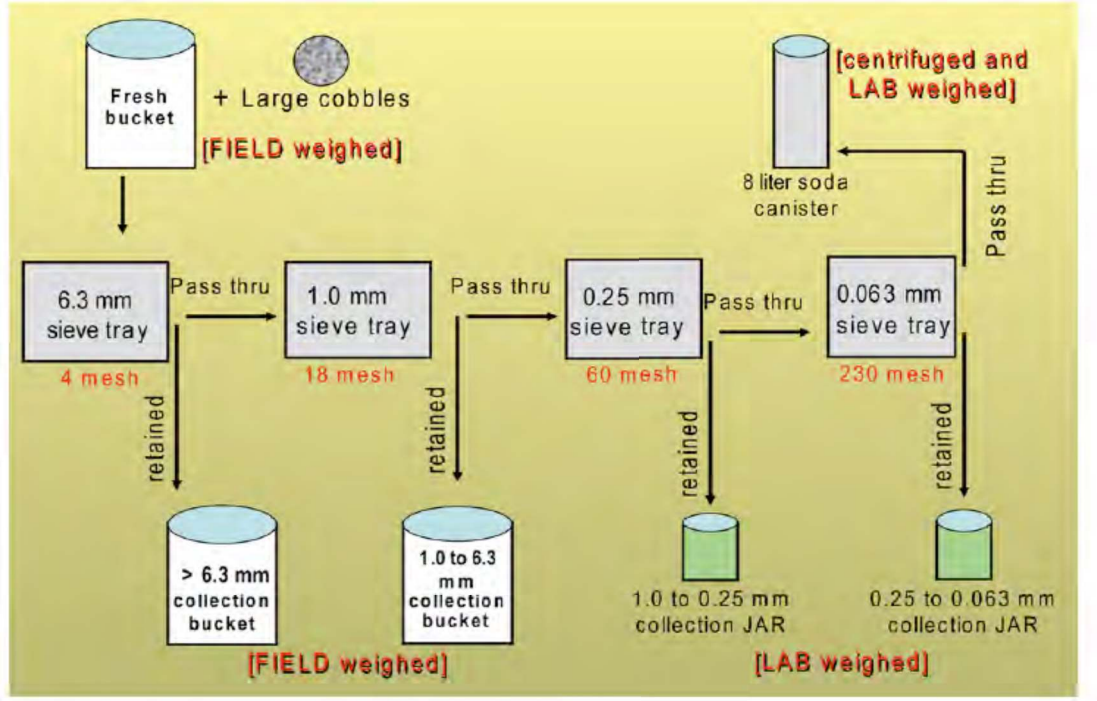

Figure 8. Flowchart showing processing methods for excavated sediment samples.

Figure 20. Sifting Process of Material Used to Classify Particles

CONCLUSIONS

The SEIR provides **1,100** dredging hours to produce the background load in the S. Yuba River the analysis above shows the actual hours required would be **2,280,752** given the source data for the SEIR.

Given that both of the above hours assume that every dredger in the state is mining at the confluence of Humbug Creek and the Yuba River an impossible dredge density, however given that this may be theoretically possible at some level, the comparison of current dredgers to effort required would be:

Dredgers Required to Reach Natural Load of the S. Yuba River					
	# Permits	Avg Days	Avg Hours/Day	Hrs per dredger	Total Hrs dredged in State
Statewide	3650	30	5.25	157.5	574,875
Hours Required to Reach Natural Load of S. Yuba River Watershed					2,282,751.69
Dredgers Required (permits) to reach natural load of S. Yuba River Watershed					14,493.66

Table 14. Dredgers Required to Reach Natural Load of the S. Yuba River Watershed

If we had 14,490 dredgers all dredging at the confluence of Humbug Creek and the S. Yuba River and all in material equal to test pit #2 we could produce the natural load of the Yuba River.

The Humphreys test shows that even the floured mercury is discharged with the sediment – it is not resuspended as the SEIR states and confirmed by Fleck in the dredge test. 100% of the beginning mercury was accounted for at the end of the Humphrey's test, 98% was captured by the dredge and 2% was found in the sediment in the tailings of the dredge. It is extraordinarily unlikely and probably an immeasurable amount that is being converted to MeHg even Fleck was measuring in ng/l.

Methylized Mercury (MeHg) Discussion

The SEIR attempts to provide a linkage between MeHg and suction dredging activities. The data and results do not support the SEIRs conclusions.

The Fleck study [Fleck 2010] page 36 states **"Dredging appeared to have no major effect on pMeHg concentrations in the South Yuba River during the dredge operations...Concentraions of fMeHg were all below the method detection limit (MDL) of .040 ng/L except for one sample..."**

Page 4.2-46 discussion of MeHg. Lines 28-30 "...Recent studies indicate that following resuspension of South Yuba River sediments, both from Pit #1 and Pit #2: BC**, increased methylation was not observed** after deposition into South Yuba River receiving sediments...". This finding would be consistent with my calculations but it is not consistent with their assumptions of increased MeHg loading into both biota and the delta load.

The above example appears to indicate MeHg effects are non-existent from dredging. Additionally, the SEIR allows for no evaporation of the mercury enroute to the Delta, while the California Water Quality Board found that up to 50% of MeHg is lost in transport due to evaporation:

"Preliminary photodegradation study results for the Sacramento River near Rio Vista (Byington et al., 2005) ***suggest that methylmercury loss from photodegradation may account for more than 50% of the unknown loss rate*** *illustrated in Figure 1." [California Environmental Protection Agency, Sacramento – San Joaquin Delta Estuary TMDL for Methylmercury Staff Report Draft , February 2008].*

If the California EPA is correct then the SEIR is wrong. The SEIR assumes 50% of the Hg is reaching Englebright Lake and the remaining 50% is passing over the dam. It would be more accurate to say that of the amount of MeHg released by a dredge (which is not determined, or as shown above is not measureable) then only 50% of that original

figure reaches the lake and then whatever amount passes over the dam another 50% is lost prior to the reaching the delta. Regardless of which approach you use it is clear that a significantly smaller portion of MeHg reaches the delta than the SEIR claims.

Effects of Dredging on Biota and Natural Rates of Hg

Finally we reach the crucial question in regards to the SEIR and the proposed program – is dredging deleterious to fish? We have shown that the mercury mobilization rates from dredges, as measured in the output from the dredge sluice box are orders of magnitude less than the SEIR claims. Actual field measurements of an operating dredge [Fleck and Humphreys] confirm that the release of Hg, Hg(II)r and MeHg are insignificant. So the question becomes the cumulative effect of dredgers.

An accurate measure of this impact is the sampling of biota as conducted during the Fleck study, unfortunately such a study in the field has so many variables it becomes impossible to determine the proximate cause, but it is fairly easy to demonstrate that the river itself contributes far more mercury than all of the dredgers could possibly contribute.

The MeHg study and analysis in the SEIR, while likely accurately measuring the MeHg in tissue of various insects are incorrect in a number of ways.

We'll start with fish.

Page 4.2-47 reports that Rainbow Trout measured Hg levels were .17ppm versus the national average of .11ppm, however the SEIR report is misleading as the averages provided by the US EPA provide wide bands of averages. To select only the lowest amount is deceptive and tends to skew the readers opinion of the issue. Given 40 years of dredging it appears the actual impacts on fish species are quite low. If the effects on re-suspension were as drastic as the report claims we would expect to see much higher levels.

Table 2-1
Range of Average Mercury Concentrations (ppm) for Major Fish Species in the U.S. in 36 States and DC, 1990-1995

Carp	0.061 -0.250	White sucker	0.042 - 0.456
Channel catfish	0.010 - 0.890	Largemouth bass	0.101 - 1.369
Smallmouth bass	0.094 - 0.766	Walleye	0.040 - 1.383
Brown trout	0.037 - 0.418	Northern pike	0.084 - 0.531

Figure 21. US EPA Ranges of Average Mercury Concentrations

The above table is compared to the SEIR provided table:

TABLE 4.2-3. WATER BODIES IN CALIFORNIA WHERE OEHHA CONSUMPTION ADVISORIES HAVE BEEN ISSUED FOR MERCURY IN ASSOCIATION WITH HISTORIC GOLD MINING

Water Body	Species with Highest Mean Tissue Concentration (n >= 6)	Highest Species Mean Tissue Concentration (mg/kg, wet weight)[1]	N [2]	Region
Lower Feather River	Striped Bass	1.27	6	5
Englebright Lake	Bass	0.45	56	5
Camp Far West Reservoir	Largemouth and Spotted Bass	0.85	38	5
Lake Combie	Largemouth Bass	0.9	19	5
Rollins Reservoir	Channel Catfish	0.36	13	5
Lower American River	Largemouth Bass	0.81	48	5
Lake Natoma	Channel Catfish	1.474	11	5
Lake Folsom	Spotted Bass	0.71	16	5
Cosumnes River	Crappie	1.38	11	5
Lower Mokelumne River	Pikeminnow	0.82	11	5
Lower Sacramento River and North Delta	Smallmouth Bass	0.86	13	5
Central and South Delta	Largemouth Bass	0.3	369	5
Trinity River Watershed	Largemouth Bass	0.55	24	1

Figure 22. Table 4.2-3 from the SEIR for Mercury Concentrations

As mg/kg is the same as ppm no conversion is necessary. Comparing only largemouth bass you can see that they are within the ranges for the U.S. including areas where gold mining is not taking place. Table 4.2-3 may be interesting, but it is deceptive to use this table as a premise that gold mining is causing these levels of MeHg. The SEIR references the Fleck analysis of larval MeHg levels during 2007 and 2008. The statement on differences in MeHg levels is based on no differences between the water years except for dredging being banned in 2008. Let's take a closer look at this conclusion and test the validity of a two variable hypothesis where the two variables are suction dredges and flood events – can we only look at these two variables and determine a conclusion? Let's see.

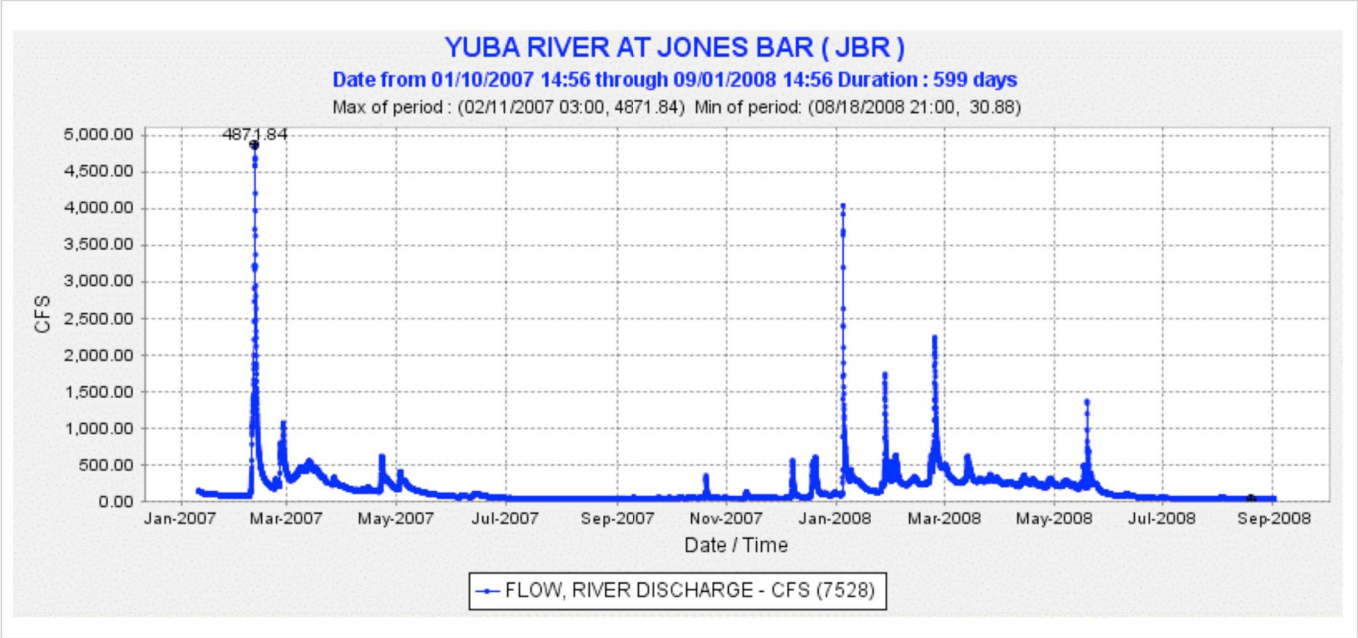

Figure 23. Water Years 2007 and 2008 at Jones Bar Measuring Station

When conducting a study it seems somewhat unscientific to simply say qualitatively that the two water years were the same. The above chart shows the water years were not the same. Water year 2007 had a spring flood event that was 20% higher than the spring flood event in 2008, surprisingly almost the same difference as measured in MeHg.

Differences are summarized in Table 15.

	Average 2007	DEVSQ	Average 2008	DEVSQ	% Difference in MeHg yr to yr
Water Strider	148.6	18017.0	85.7	3919.0	0.42
Dragonfly	61.5	4219.0	30.3	886.0	0.51
Cadissfly	27.6	435.0	20.0	294.0	0.28
Stonefly	68.2	2179.0	48.9	2486.0	0.28
River Flood	4871		4000		0.18

Table 15. Decreases in MeHg from 2007 to 2008

The source data for Table 15 is provided in the Fleck Report. The error in the table is the necessity of averaging the numbers provided in the source data – I had to "average the averages." Fleck does not provide the detailed source data – only the average MeHg for a certain number of collected species. It is difficult to determine, lacking precise data if the differences are meaningful or if they are attributable to sampling locations or time of the year. The square of the deviations presents yet another problem – there is a high variability about the mean of the samples collected. It's truly hard to make sense of this data and I would need to examine the source data to make some type of conclusion. The only meaningful conclusion one can make of the data is there was a much higher variance

in 2007 than was found in 2008 and the differences, statistically, can't discount the effect of the spring flood.

The spring flood events as shown in Figure 18 provide yet another variable. The timing of the floods. While above we looked at differences in MeHg compared to the samples from year to year we can see the timing of the floods – which would discharge mercury are different. In 2007 the flood event occurred in March while in 2008 the event occurred in January. This is significant when you compare it to the timing of hatches in the Sierra Nevada (courtesy of FlyfishingtheSierra.com). Overlaying the spring flood events with the hatches presents yet another variable not considered.

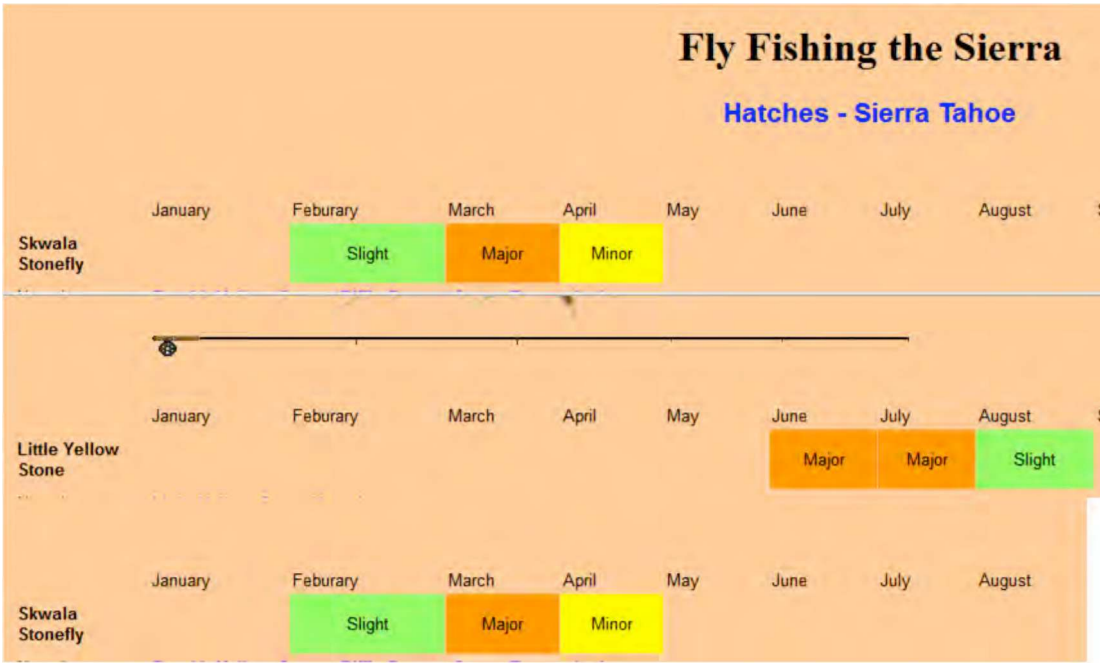

Figure 24. Spring Hatch Events

The timing of floods and the impact of MeHg on larvae needs to consider the timing of the hatches to make sense of the MeHg results. Hatches are a difficult subject as they will be relative to elevation, but the point is the timing of the hatch is important in respect to flood events. Different sub-species will hatch at different times and the age difference of the larvae can show considerable variance. It's just too simple to compare year to year and conclude the only variable that changed was the presence of suction dredges.

Flood Event Contribution to Hg Loading

The impact of flood events is discounted in the SEIR. Luckily during the Fleck study they actually measured the THg release from Humbug Creek and the South Yuba River so we can do something with that.

While the Fleck report labels the event a "storm event" from the chart below I think we can agree it was a flood event, especially in relation to the water data presented for 2007 and 2008.

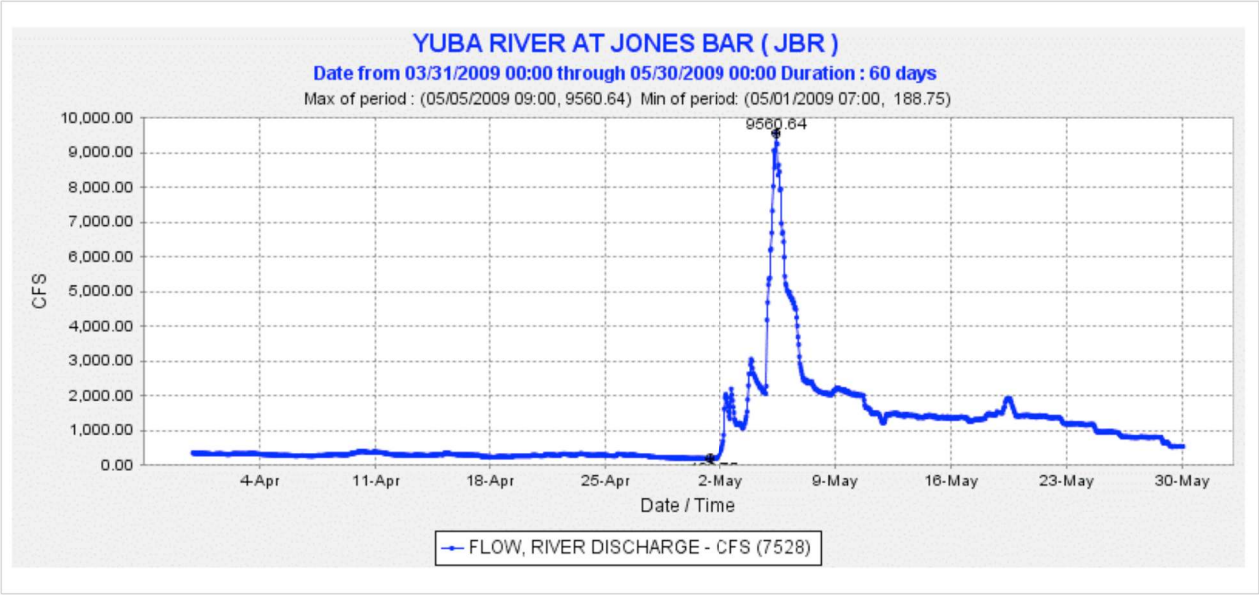

Figure 25. Graph of Flood Event for 5 May 2009

Interestingly 2009 was an active water year, in addition to the chart above the other flood events for that year are shown below.

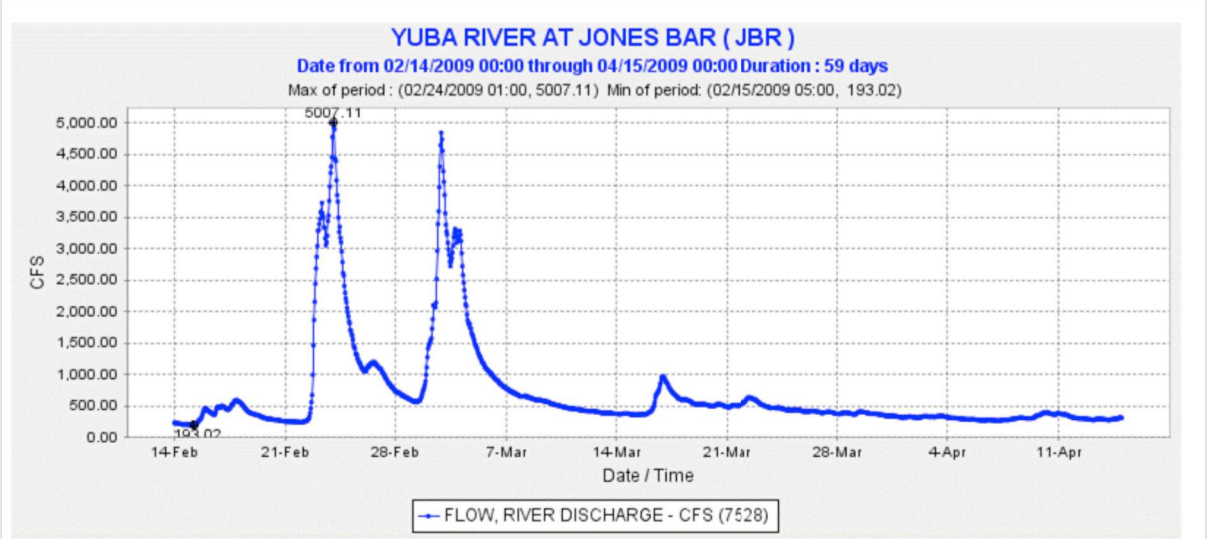

Figure 26. Flood Events for 2009

You have to wonder what the MeHg measurements for 2009 would (will) be if collected. It appears from the timing of the flood events we should see elevated MeHg for 2009.

There are no water measurements for volume of flow for Humbug Creek but the Fleck study collected point samples (unknown how many, time of day, flow rate at the specific

point or flow rate of Humbug Creek). However, given all these variables that weren't collected it's still of value that they collected Hg samples from the river at flood stage.

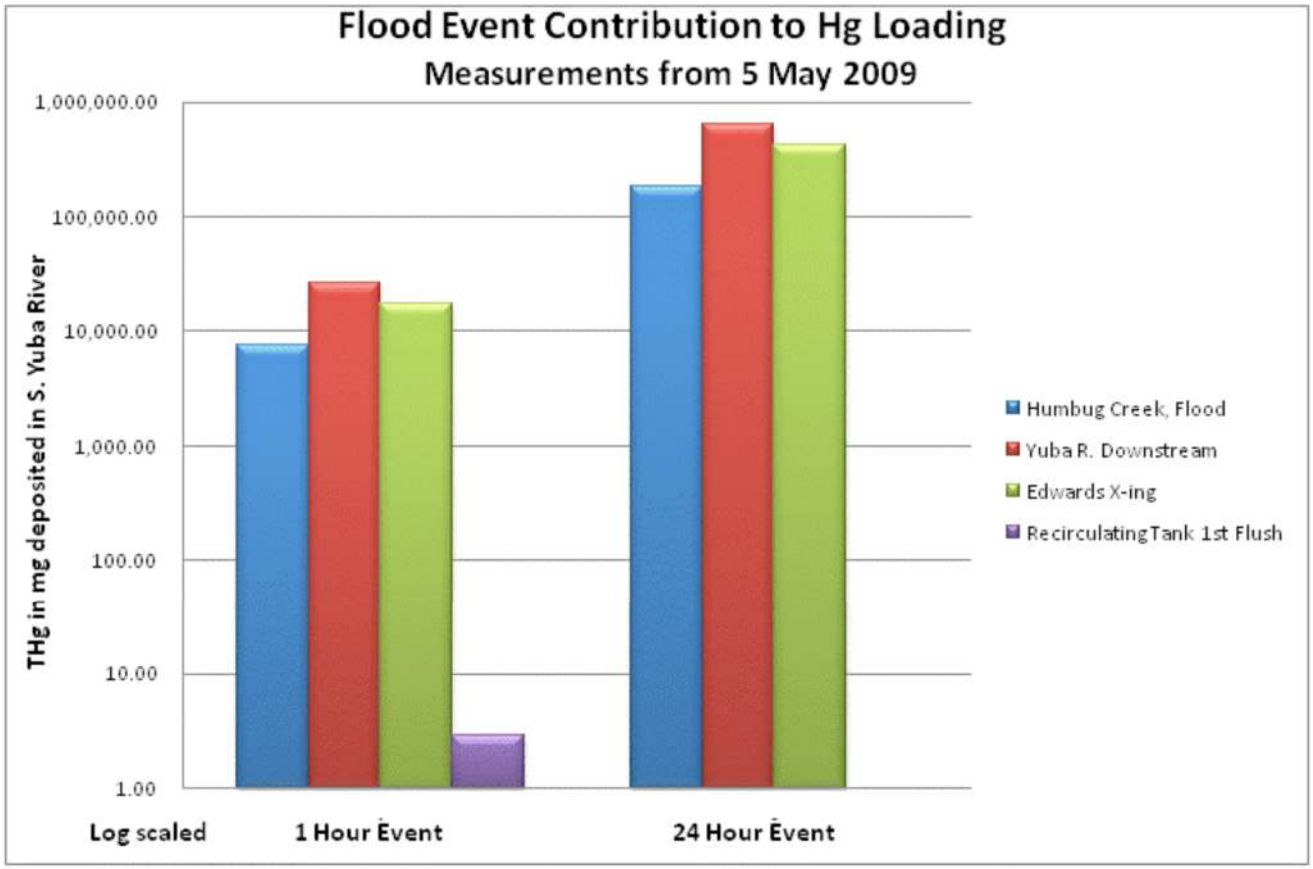

Figure 27. May 5th Flood Event

Conspicuously absent from the SEIR is any analysis of the flood event reported by Fleck. Samples were collected of the 5 May 2009 event and analyzed for mercury content. The peak of the flood was near 0800 on 5 May. Given travel time to the site it is likely that samples were taken after 1200, approximately 1,000 cfs below the peak. It is commendable that they took these samples. The resulting analysis in comparison to the dredge output, and the output from the recirculating tank experiment is shown in Figure 27 above.

The estimation of the recirculating tank experiment is provided above assuming the flow output of the dredge over one hour with the contamination levels measured in the tank. The output from the tank is a mere fraction of what is output naturally. As mentioned earlier to output that amount of material from the <.063 material would require an exponential increase in time required. It's impossible to do but is provided as a comparison to the natural event. The summary calculations used in the graph are provided in Table 16.

	1 Hour Event in mg/hr	24 Hour Event in mg/hr
Humbug Creek Storm Event	7566	181585
Yuba River, downstream, Flood	26488	635701
Edwards Crossing	17373	416964
Recirculating Tank first Flush	85	NA

Table 16. Hg Produced through Natural Storm Event on 5 May 2009

The full calculations are provided in Table 17.

STORM EVENT CALCULATIONS										
	TSS mg/l	TSS g/l	liters to make 1 gram	THg ng/g	THg ng/l	Peak Flow m3/s	Peak Flow liters/second	THg ng/l second	mg/hr	24 hr event THg in mg
Humbug Creek Storm Event	135	0.13500	7.41	556	75.06	28.0	28,000	2101680	7566.048	181,585.15
Yuba River, downstream, Flood	75	0.07500	13.33	362	27.15	271	271,000	7357650	26487.54	635,700.96
Edwards Crossing	42	0.04200	23.81	424	17.81	271	271,000	4825968	17373.4848	416,963.64
Recirculating Tank first Flush	95	0.09500	10.53	407	38.67	0.608	608	23508.32	84.629952	NA
Note 1: TSS and THg measurements are provided by Fleck										
Note 2: Added the values collected for less than .063 and .0003 to .063mm from source data for total										
Note 3: Maximum material possible to move by dredge is 8 cubic yards (6.08 cubic meters) which represents 10% of volume										
Note 4: To achieve water volume of dredge multiplied 6.08 cubic meters /										
Note 5: Peak flow measured at JBR for 5 May was 9580 cfs which equals 271.27 cubic meters										

Table 18. Storm Event Calculations

As opposed to the conclusions reached in the SEIR – a single storm event indicates that one flood can produce the entire natural watershed load for the year. Again, this isn't mentioned, I would think it would be relevant. The only conclusion you can reach from this data is our time would be better spent limiting the number of storm events to one every 1.5 years than we would limiting the number of dredgers to 4,000.

Finally, the SEIR makes the unsubstantiated claim that on page 4.2-52, lines 8-10, ***"Suction dredging operators may target deep sediments [i.e. those too deep to be available to scour under winter flows], and thus mobilize sediment that may not be mobilized by typical winter high flow events."***

This statement is not substantiated anywhere in the literature and disregards the "storm" event of May 5th that showed the single natural load of the watershed is produced in 24 hours. Secondly, the SEIR disregards the Humphrey finding that mercury actually moves during low flow events. ***"Post dredge test inspections show that during low flow periods (200cfs) sediment does not travel over the bedrock hump. But post dredge test inspections also showed that mercury had re-deposited on the bedrock that had been dredged clean." [Humphreys 2005].***

Anyone who has ever played with mercury as a kid knows that mercury, as a liquid metal and being nearly as dense as gold, will travel by gravity and will fragment and recollect. It is completely false to believe that mercury is not constantly reacting to the forces of

gravity in a stream, regardless of flow events. Mercury moves during all stages of the river. Dredges remove this mercury prior to its remobilization.

RECOMMMENDATIONS:

Eliminate the mercury studies and analysis from the final SEIR based on limited data and analysis of an exceptionally complex topic requiring considerable additional study that incorporates a much higher variable consideration.

Evaluate the ability of a "flare jet" dredge to recover mercury – it is likely higher than the 98% reported by Humphrey's as a flare jet reduces the flow of water into the header box which should result in less flouring.

The proposed program limitation of permits to 4,000 is not based on evidence, scientific studies or facts. All data and analysis shows no reasonable number of dredgers could approach natural loading of the rivers – continue with the current (1994) program with no limits on permits or nozzle sizes.

There is no basis to limit either the nozzle size or the number of permits based on mercury analysis.

Future studies should structure their experiments more carefully and the analysis of the data should be accomplished without bias.

LIST OF REFERENCES

1. Humphreys et al, 2005 "Mercury Losses and Recovery during a suction dredge test in the South Fork of the American River."

2. Fleck, et al, 2010, USGS Report 2010-1325A, "The effects of sediment and mercury mobilization in the South Yuba River and Humbug Creek Confluence Area, Nevada County California."

3. Mercury Report, August 2002, California Department of Toxic Substance Control

4. Silva, Michael, Placer Gold Recovery Methods, Special Publication 87, California Department of Conservation, Division of Mines and Geology, 1986

5. California Environmental Protection Agency, Sacramento – San Joaquin Delta Estuary TMDL for Methylmercury, Staff Report Draft, February

Subject: (none)
Date: Monday, May 9, 2011 4:00:38 PM PT
From: mike@expresssmogcheck.com
To: dfgsuctiondredge@dfg.ca.gov

Gentlemen,

The reasoning behind stopping dredging in the california river is not correct. It is just financially hurting Calif. minors and the local economy big time! Please stop this. Thanks

---

SISKIYOU PROJECT

Protecting the Siskiyou Wild Rivers region for future generations

May 9, 2011

Mark Stopher
California Department of Fish and Game
601 Locust Street
Redding, CA 96001
dfgsuctiondredge@dfg.ca.gov

Re: Suction Dredge Permitting Program and Draft Subsequent Environmental Impact Report

Dear Mr. Stopher:

The Siskiyou Project is a non-government group that advocates for the protection of forests and streams on public lands within the Rogue River Siskiyou National Forest. I am staff ecologist and have considerable experience with documenting physical impacts from suction dredging (Nawa 2002), mining impacts in SW Oregon (Nawa 2010), and research about the susceptibility of Chinook salmon redds to scour (Nawa and Frissell 1993). The Siskiyou Project recommends that suction dredging be prohibited in the upper East Fork Illinois River, upper Applegate River, and their tributaries in Siskiyou County for the following reasons:

1. Remoteness from California causes high expense and coordination difficulties with enforcement/monitoring.
2. Lack of enforcement/remoteness emboldens dredgers to not follow California regulations.
3. Viable populations of SONC coho spawning and rearing in upper East Fork Illinois would be harmed. Habitat would be damaged due to disdain for regulations in this remote area.
4. Contamination of upper Applegate River, tributaries , and Applegate Lake due to resuspension of mercury from historic mining areas and resuspension of severe toxic metal contamination from the Blue Ledge mine.
5. Pollution from dredgers would cross California state line and contaminate Oregon streams.

The SEIR seems to have overlooked SONC coho salmon that are found in the upper East Fork Illinois River and its tributaries (Dunn Creek, Bybee Creek) located on the Rogue River Siskiyou National Forest in Siskiyou County. About 7 miles of high quality coho habitat is vulnerable to suction dredging. Figure 2-1 fails to illustrate the East Fork Illinois River in Siskiyou County at the extreme northern edge of

California. Vehicle access to this remote area is from Oregon. No vehicle access exists directly from California. An analysis of these streams in conjunction with the General Rationale for Proposed Regulations for SONC coho (Table 4.3-1 p. 3) would likely identify these cold water refugia streams for Class A in Proposed Amendments to Regulations (2-54). Currently the Proposed Program would leave the upper East Fork Illinois streams open to dredging with Class F season July 1-September 30 (SEIR 2-6) which is unacceptable because of adverse impacts to federally listed coho salmon. Besides thermal impacts and despoliation of spawning substrate prior to spawning (Harvey and Lisle 1999), enforcement of California laws in this disjunct remote area is extremely problematic. Apparently suction dredgers ignored the California moratorium and continued dredging in Dunn Creek through summer 2010. The problems associated with law enforcement alone would logically be reason for season long closure (Class A). The expense of CDFG to travel to the Upper East Fork Illinois River to administer the Proposed Program would be cost prohibitive. Dunn Creek has high quality habitat which is being annually degraded, regardless of California regulations.

The proposed regulations would designate the Applegate River and all tributaries as Class C (SEIR 2-54) to allow dredging from June 1-September 30 (SEIR 2-6). The SEIR has found a significant and unavoidable impact from the effects of mercury resuspension and discharge from suction dredging (SEIR 4.2 p.33-54). The upper Applegate River and tributaries in California have had gold mining operations that have likely contaminated the area with mercury. The upper Applegate River in California flows into Applegate Lake in Oregon. Fish in Applegate Lake would be expected to experience elevated mercury similar to Englebright Lake (SEIR 4.2-48). Thus, the significant and unavoidable impacts from mercury resuspension identified in the SEIR would be expected to occur with proposed dredging in the Upper Applegate River and its tributaries.

The U.S. Environmental Protection Agency is proposing to add two abandoned mines that discharge toxic pollutants to California waterways to the Superfund National Priorities List. The Blue Ledge Mine is located on privately owned land surrounded by the Rogue River-Siskiyou National Forest, approximately three miles south of the Oregon-California border along Joe Creek in the upper Applegate River watershed. Copper, cadmium, other metals, and acid mine drainage from past copper and zinc mining operations have contaminated sediments and surface water at levels that are toxic to aquatic organisms. Impacts include the absence of fish for more than three miles downstream and potential negative impacts to fisheries all the way to the Applegate Reservoir, nearly eight miles downstream. http://yosemite.epa.gov/opa/admpress.nsf/0/55332E90033DDA768525784D005DD2CB

The USFS collected surface water samples from the mine drainage, Joe Creek, and Elliott Creek in April 1992. Samples were analyzed for pH, conductivity, metals, sulfates, fluoride, hardness, and alkalinity. The results confirmed that the mine drainage contained cadmium, copper, and zinc at levels exceeding EPA freshwater criteria. The sample of the mine drainage exhibited an acidic pH of 3.10. In summary, the previous investigations have demonstrated that the waste rock present within the abandoned workings and on the slopes of the Site are a significant historic and ongoing source of cadmium, copper, iron, lead, and zinc, and sulfuric acid to Joe Creek. Data from previous investigations demonstrate that cadmium, copper, iron, and zinc concentrations in surface water detected below the Site are significantly higher than background detections, further confirming that the Site is a significant source of these metals and is releasing these metals to the environment at

significant concentration. Based on the work completed to date, releases have been confirmed to have severely impacted the aquatic life of Joe Creek, and Joe Creek would otherwise be a productive native fishery. Numerous reports about blue ledge mine contamination and remediation are available at http://www.fs.fed.us/r6/rogue-siskiyou/projects/mines/index.shtml

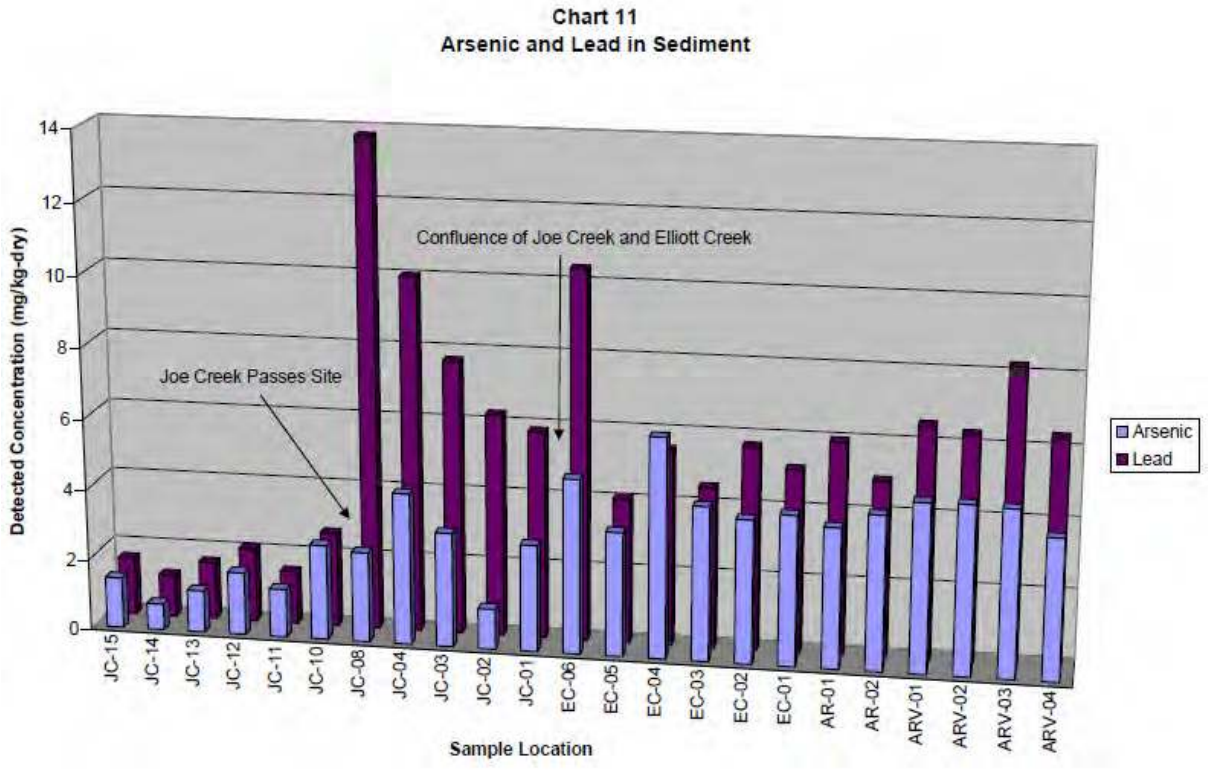

Chart 11. The Blue Ledge mine has caused elevated arsenic and lead in streambed sediments of Joe Creek(JC), Elliot Creek (EC) and Applegate Reservoir (Lake).

Historic copper and zinc mining from the Blue Ledge mine and resulting acid drainage has caused some upper Applegate River tributaries to have low pH and are susceptible to the significant and unavoidable effects of resuspension and discharge of other trace metals form suction dredging (SEIR 4.2 p. 54-59; p. 58 lines 34-44). Closing these trace metal hot-spots associated with past mining operations (e.g. problematic sites with acid mine drainage) would be advisable. Thus it would be prudent to close the Applegate River and its tributaries to suction dredge mining.

Both the upper Applegate River and upper East Fork River flow from California into Oregon creating a need for pollution restrictions, analysis, and coordination due to pollution created by the California Proposed Program causing contamination to Oregon waters. The situation for the Applegate Watershed is particularly acute because of the potential for mercury, lead, arsenic, and other toxic elements to accumulate in Applegate Lake which lies immediately north of the California/Oregon state line. The

complexities of oversight involving two states and regional EPA would seem to warrant prohibition of suction dredging in these remote areas separated from direct California access. Monitoring and administration would be extremely costly for California state officials to make site visits. Simply ignoring the pollution issues caused by suction dredging will create extreme difficulties for federal and state agencies located in Oregon. In summary, it seems best to prohibit suction dredging in disjunct remote river systems that drain into Oregon.

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Sincerely,

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Enc: Nawa 2002, Nawa 2010, Nawa and Frissell 1993