

Subject: SEIR & Proposed Suction Dredge Regulations

Date: Monday, May 9, 2011 7:52:10 PM PT

From: Michael O'Connell

To: Dredge Regs.

Mark Stopher
Ca. Dept. of Fish & Game
601 Locust St.
Redding, Ca. 96001

May 9, 2011

Dear Mr. Stopher;

I live in Fort Dick, Ca., on the very northwest corner of California. I have lived in Del Norte County for 58 years. My profession has been as a land surveyor for the last 31 hear on the northern part of the state. As a part of my work and during many hunting and prospecting ventures over the years I've hiked many miles along our rivers and streams. I've seen many threat to our beautiful waterways and fishes and I truly believe suction dredging in not one of them. In fact I believe suction dredging to be a very beneficial activity as relates to a healthy stream habitat.

I grew up in the old town of Klamath, Ca. My family went through both the 1955 and the 1964 floods, loosing our home both times. In 1955 we stepped out our front door into a row boat in the middle of the night. In 1964, when my older brother and I left our house (the last to leave of mom and 7 brothers and sisters) the water was flowing over the running boards of our old 1956 Chevrolet pickup.

When we returned to our house in the Klamath Glen after the 1964 flood the silt was about 2' below the ceiling. The erosion and volume of sediment and debris going down the Klamath river in each of those floods is more disturbance to this river system than prospectors ever have and ever will generate. A normal winters high water flow generates much more disturbance than modern day prospectors (with current regulations) will ever produce. Modern suction dredging in less than significant and actually beneficial by breaking up the compacted sedimentation in our river systems and providing cool water resting pools for fishes among others.

Many man made influences are impacting the viability of our fish populations which make any activity by the modern prospector / dredger pale in comparison.

The other very real impact further restriction of suction dredging in California is

the detriment to our economy. Gold prospecting and dredging produces brand new dollars to our struggling economy. Hard earned wealth from good old mother earth. This kind of wealth is the foundation which all of our other economic activity stands on. We need more of these kind of dollars not less.

With this letter I am asserting my federal rights to prospect for and file mining claims upon federal land and to use suction dredging to accomplish the goal prospecting and mining the minerals upon said land.

Furthermore, by this letter I support the response letter and documentation by retired EPA Scientists Claudia Wise and Joseph Greene addressing this same subject. Their comprehensive rebuttal to the possible regulation being considered is better and more concise than anything I can write.

I am requesting your recommendation to the CDFG be to continue the regulations of 1994 and for the CDFG to continue same.

Thank you for your consideration,

**Mike O'Connell
2555 Morehead Rd.
Crescent City, Ca. 95531**

Subject: Suction Dredge Program Draft SEIR Comments

Date: Monday, May 9, 2011 3:20:55 PM PT

From: Sherrod Osborne (sent by Friends of the River <info@friendsoftheriver.org>)

To: dfgsuctiondredge@dfg.ca.gov

May 9, 2011

Department of Fish and Game
CA

California's rivers, streams, fish, wildlife and water quality must be protected from the adverse impacts of suction dredge mining. The proposed regulations simply do not provide sufficient protection for these sensitive resources

Please revise the regulations to prohibit suction dredge mining in all rivers and streams that provide critical habitat and future recovery areas for threatened and endangered fish and wildlife. Please close all mercury-impaired rivers and streams to suction dredge mining to protect water quality, human health, fish and wildlife.

Dear Fish & Game,

I was unable to attend any of the public hearings for the proposed regulations regarding suction dredging but have strong feelings about this issue and would like my voice to be heard.

My primary concern is for wild & scenic rivers. Suction dredging is wholly incompatible with the values enshrined in the Wild & Scenic Rivers Act (W&SRA). It is inconceivable to me that you could even be considering regulations that would permit this activity. The tiny fraction of America's riparian heritage included in the W&S System belong to all of us--it should not be within the purview of any state to allow any special user group, no matter how vocal, to engage in activities so contrary to the spirit of the W&SRA.

While I fervently believe that dredging should not be permitted on any wild & scenic river, I am adamant that it not occur on the Merced River. This river is the heart and soul of Yosemite National Park. The 20 miles of the river along Highway 140 outside the Park is the pathway a great many people travel to the temple of Yosemite Valley. I speak for literally hundreds of thousands of Yosemite visitors who would be appalled by the sight and sound of dredging on Yosemite's doorstep. Inappropriate is too mild a condemnation--desecration is more the correct flavor. The wild & scenic river segment below Highway 140, between Briceburg and Lake McClure, while not usually seen by Yosemite tourists, has two campgrounds and is an important swimming, hiking, rafting, and fishing area used by Mariposa County residents and I would not like to see dredging on this segment either. In addition

to wild & scenic rivers, dredging also has no place on wild trout streams or in rivers with critical fish and wildlife habitat or other significant ecological resources or values.

Your "Review of Available Suction Dredging Studies" seems to conclude that the conflicts between dredgers and other users are simply a reflection of differing values. While the values are certainly different, it is much more than that. I understand that there are competing values between different user groups--anglers can be disrupted by rafts and canoes, photographers may prefer not to have picnickers or birdwatchers in their photos, hikers and equestrians don't always see eye-to-eye, etc. But dredgers occupy and possess a stretch of river in ways that preclude the activities of most other users. Whether through intimidation or by such complete contrast with the values of other river users, dredgers effectively exclude other users from the section of the river that they work. No group or individual should control so exclusively any federally protected wild & scenic river. There may be no "scientific" studies quantifying the nature and degree of hazardous materials, fuel spills, garbage and sanitation issues, or conflicts between dredgers and others--and the definition of "junk" may be in the eyes of the beholder--but hiding behind the paucity of "scientific proof" in this case is a cop-out. I suspect that your own field personnel know this very well. There are problems here and they do not belong on a wild & scenic river. Dredgers are not just another recreation group. In fact, the definition of "recreation" needs to be stretched significantly to include the extraction of gold to make money. There is ample evidence in this "Review" that restricting suction dredging activities to more appropriate locations is an entirely reasonable course of action.

All but one of the ten sections on the "Impacts of Suction Dredging" in the "Review of Available Suction Dredging Studies" concludes with the known gaps in information. Is this the knowledge base upon which to grant carte blanche to the dredging lobby? Of all the troubling potential damages to aquatic and riparian resources listed in the "Review" none is more disturbing than the unknown dangers of mobilizing mercury--which, by the way, is a current hazard only because of unregulated past mining. Known mercury "hotspots" should also be excluded from any future permitted suction dredging. I am also particularly concerned about the encampments associated with some dredging operations. The intensive impacts of these camps, especially on wild & scenic rivers, are unacceptable.

As a law enforcement ranger and special agent in Yosemite for 30 years I am well aware of the compliance issues involved when perceived individual liberties intersect the use of public resources. While members in some of the dredging clubs mentioned in the "Review" may be model citizens, others are not. All user groups of public resources should be monitored for the protection of the resources utilized and adherence to the regulations governing the uses of those resources. Groups with higher proportions of individuals who seemingly do not

support the regulations or care about the values of other groups who depend upon those same resources need to be monitored even more closely and violations must be addressed. I would not support the resumption of suction dredging anywhere, even in rivers where this activity may be justified, without adequate agency personnel and resources to supervise operations and enforce regulations.

Sincerely,

Sherrod H. Osborne
P.O. Box 735
Yosemite, CA 95389

Recreational and commercial mining is not a legitimate activity in California if it is done at the expense of the state's fish, wildlife, water quality, human health and state-protected beneficial uses of our rivers and streams.

Sincerely,

Mr. Sherrod Osborne
PO Box 735
Yosemite National Park, CA 95389-0735

Central Sierra
AUDUBON
SOCIETY

P.O. BOX 3047 ■ SONORA, CA 95370 ■ (209) 532-0570



May 9, 2011

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

Re: Suction Dredging Program SEIR Comments

Dear Mr. Stopher:

On April 27, 2011 I wrote to you with comments on the proposal to allow renewed suction dredging in California rivers and streams with up to 4,000 permits allowed subject to prior approval of a final supplemental environmental impact report (SEIR). In that letter I mistakenly stated that I was Chairman of the Central Sierra Audubon Society rather than the position which I hold as Chair of its Conservation Committee.

In reviewing subsequent information posted at the website for the SEIR, I find that the last hearing on the SEIR is in Sacramento on May 10, 2011 and that the last date for submission of comments on the SEIR and proposed regulations has also been extended to May 10, 2011 so long as written comments submitted by mail are postmarked not later than May 10th. Although I will be unable to attend tomorrow's hearing, I wanted to add to my prior comments in protest of the proposal to approve of the SEIR and adopt such permissive regulations.

In rereading applicable sections of the SEIR and proposed regulations, I note that the proposed regulations will increase the allowed permits by over 350 from the prior level of annual permits issued by the Department. What is most disturbing is that there does not appear to be any limit on the number of permits that could be issued for any one river or its tributaries. Almost the sole purpose of dredging is to try and find gold which means that most of the suction dredging activity will be concentrated in the Sierra Nevada.

The SEIR reports that of 67 aquatic habitat types identified in the Sierra Nevada over two thirds are in decline. Since this area is subject to some of the highest use by suction dredgers, it is inevitable that the permitted use of suction dredging will contribute to this decline.

The proposed regulations fail to protect those rivers and tributaries that are designated or proposed for designation as Wild and Scenic under State and Federal Law. The SEIR only indicates that such areas “may” be protected.. Those areas deserve the highest protection. All suction dredging should be prohibited in such designated areas or proposed areas such as the Clavey River which feeds directly into the upper Tuolumne River which is a Federally designated river.

Nearly all of the adverse environmental impacts identified in the SEIR are anticipated to be mitigated or reduced to less than significant impacts by mitigation measures specified in the SEIR or in other instances mitigation are stated as beyond the jurisdiction of the CDF&G. Mitigation means nothing if there are not adequate resources available for on site inspections, monitoring of dredging activities and other follow up studies to insure that mitigation is achieved. Given current and anticipated cuts in funding of most levels of State government (which reductions are not even mentioned in the SEIR), it is unlikely that identified mitigation measures will be achieved.

One of my comments on the proposed regulations in my prior letter was similar to comments from one of the dredging proponents, namely that the California Department of Fish & Game (CDFG) does not have the manpower, budget, or resources to enforce the proposed regulations and on site inspections, some of which are supposed to be required before certain permits are issued. From that person’s prospective, such shortages of funds and manpower will interfere and delay dredging activities. From my prospective, such inadequacies will result in proposed mitigation measures from being meaningless.

The SEIR identifies significant impacts on special status passerines associated with riparian habitat at section 4.3-48. Specifically suction dredging and its related noise and light at night may result in changes in ”behavior, movements and distributions which may lead to nesting failure and expenditure of critical energy reserves.” These impacted special status species include species such as the Bank Swallow, Western Yellow-billed Cockoo, Least Bell’s Vireo, and Willow Flycatcher.

The SEIR opines that the proposed mitigation measures may be minimized with enforced restrictions but not completely avoided. Unless enforced, mitigation measures are meaningless. And your SEIR states that impacts to such passerine species are beyond the jurisdiction of your Department. The Executive Summary states that it is the obligation of the CDFG to conserve, protect, and manage fish, wildlife and native plants and habitats necessary for biologically sustainable populations of those species. Doe not the Department’s obligation extend to special status passerines?

Mark Stopher
Department of Fish & Game
May 9, 2011
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Similar impacts on special status raptors are identified at section 4.3-49&50. Any mitigation measures which the SEIR claims will reduce impact on raptor species such as the Osprey to less than significant are not likely to be enforced. Unlike the statement regarding special status passerines, there is no statement that that impacts to raptors are beyond the jurisdiction of your Department. Why is there such a discrepancy regarding jurisdiction?

The preferred alternative would be No Project, namely continuation of an outright prohibition on suction dredging . However your own SEIR identifies the Reduced Intensity Alternative as allowing for issuance of not to exceed 1500 permits as one which would reduce unavoidable impacts. Why was not this alternative chosen as the preferred alternative? Surely the economic impact of suction dredging adds a very minimal amount to the State's economy. The damage of suction dredging to the environment and to California's attraction as a special place for tourism and recreational activities argues in favor of either the No Project or the Reduced Intensity Alternative.

Please enter these additional comments and protest in your record.

Sincerely,

Thomas E. Parrington
15589 Wards Ferry Road
Sonora, CA 95370
209 928-3835

TEP:co

LAW OFFICES
DANIEL F. REIDY
A PROFESSIONAL CORPORATION
270 BLAIR MINE ROAD
MAILING ADDRESS: P.O. BOX 760
ANGELS CAMP, CALIFORNIA 95222
FACSIMILE (209) 736-0714
TELEPHONE (209) 736-0712
dfreidy@pacbell.net

May 9, 2011

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

RE: **Draft Supplemental EIR on Suction Dredge Mining**

Dear Mr. Stopher:

I have two comments on the Draft Supplemental EIR on Suction Mine Draining that is being circulated for public comment by your Department.

1. The Notices about the draft regulations and the background of the Court-ordered environmental review suggest that this process is not in compliance with one of the primary purposes of the California Environmental Quality Act (CEQA), namely, to make a threshold environmental determination prior to making any decisions on a proposed project, program or adoption of regulations. Rather, it appears to be a pro forma exercise to justify a decision that has already been made to adopt the regulations allowing suction dredge mining to go forward.
2. The Central Eureka Mine remediation project conducted by the California Department of Toxic Substances Control and the U.S. EPA in Sutter Creek and Amador County from 1994 to 2008 found that mine tailings from hard rock underground gold mining had been discharged into nearby streams and creeks, and testing during the remediation project found gold mining spoils downstream in the beds of the creeks and streams at locations significantly removed from their source. These materials contained relatively high levels of arsenic that the two environmental agencies determined were hazardous to humans that might come into contact with the materials. An obvious attractive site for suction dredge mining would be streams near former mining sites where natural or processed materials associated with historic mining would have a high probability of being found and then would be disturbed and transported by the dredge mining in ways that might bring humans into contact with potentially hazardous materials. The Draft Supplemental EIR does not give sufficient focus to this potential environmental impact or give reasonable mitigation measures addressed to this impact for incorporation into regulations.

LAW OFFICES
DANIEL F. REIDY

Mark Stopher, California Department of Fish & Game
Comments on Draft Supplemental EIR on Suction Dredge Mining
May 9, 2011
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Sincerely,


DANIEL F. REIDY 

HOUSE OF REPRESENTATIVES

COPY

STEVE RIGGS
STATE REPRESENTATIVE



COMMITTEES:
Chairman, Local Government
Banking & Insurance
Seniors, Military Affairs, Public Safety
Rules

May 9, 2011

Mark Stopher
California Dept of Fish and Game 530-225-2391
601 Locust Street
Redding, CA 96001

Dear Mr. Stopher,

I am writing to **oppose** the new California dredge rules because they are too severe and would have a negative impact on the family and hobby style of recreational prospecting. Previous studies done in California by California itself do not lead anyone to believe that recreational dredging and prospecting is detrimental.

The new regulation would be too strict and extreme because it would stop families from going to their current claims already approved. I believe the drafter of the regulation may not have enough experience about recreational prospecting because the way it is written makes it problematic for waterways of 6 feet or less even though it is listed as an approved location by DFG.

If you are looking to make restrictions on hobby prospecting, then limit the size of the dredge itself to 6 inches. For waterways less than 6 feet wide, make the restriction on the maximum dredge size 4 inches.

California's history and success with gold prospecting is not something it should turn its back on at this time considering the economic consequences for doing so.

Sincerely,

Steve Riggs

Subject: Open season

Date: Monday, May 9, 2011 9:39:23 AM PT

From: Joe Rooney

To: dfgsuctiondredge@dfg.ca.gov

It seems no study is going to be done, so it is time to let dredgers know that the season is to open on Memorial day as it should. Laws are based on facts and none are presented here. Fears of might be's and such are not reasons to prevent an activity. The state of Ca.is in dire need of revenue and this activity provides some of that through many different avenues. Dredging does not harm the environment in any way what so ever. The seasons make sure of that. The state of CA. is broke. So the solution is to shut down entire industries? Why? 3500 dredgers and a hand full that are full time, most participate on vacations or weekends. Dredgers don't have to prove anything. We are being singled out. Common sense please. Joe Rooney

DFG Suction Dredge Permitting Program SEIR NOA (SCH#2005-09-2070)

Notice of Availability of a Draft Subsequent Environmental Impact Report for the Suction Dredge Permitting Program (SCH #2009112005)

NOTICE IS HEREBY GIVEN that a Draft Subsequent Environmental Impact Report (Draft SEIR) has been prepared by the California Department of Fish and Game (CDFG) for the Proposed Program described below, and is available for public review. The Draft SEIR addresses the potential environmental effects that could result from implementation of this Program. CDFG invites comments on the adequacy and completeness of the environmental analyses and mitigation measures described in the Draft SEIR. Note that pursuant to Fish and Game Code Section 711.4, CDFG is exempt from the environmental filing fee collected by County Clerks on behalf of CDFG.

PROJECT LOCATION: The scope of the Proposed Program is statewide. Suction dredging occurs in rivers, streams and lakes throughout the state of California where gold is present, and CDFG's draft suction dredge regulations identify areas throughout the state that would be open or closed to suction dredging. Most dredging takes place in streams draining the Sierra Nevada, Klamath Mountains, and San Gabriel Mountains. Suction dredging may also occur to a lesser extent in other parts of the state. Because suction dredging may occur throughout the state, it is possible that the activity could occur in a hazardous waste site or listed toxic site.

PROJECT DESCRIPTION AND ENVIRONMENTAL REVIEW: The Proposed Program, as analyzed in this Draft SEIR, is the issuance of permits and suction dredge activities conducted in compliance with these permits, consistent with CDFG's proposed amendments to the existing regulations governing suction dredge mining in California. The environmental assessment of the Program was developed in parallel with amendments to the previous regulations governing suction dredge mining throughout California. To most accurately reflect the environmental effects of the Program, the DSEIR includes an assessment of the suction dredge activities as well as the proposed amendments to the previous regulations.

The Draft SEIR evaluates the potential environmental impacts of the Proposed Program and four alternatives: a No Program Alternative (continuation of the existing moratorium); a 1994 Regulations Alternative (continuation of previous regulations in effect prior to the 2008 moratorium); a Water Quality Alternative (which would include additional Program restrictions for water bodies listed as impaired pursuant to the Clean Water Act Section 303(d) for sediment and mercury); and a Reduced Intensity Alternative (which would include greater restrictions on permit issuance and methods of operation to reduce the intensity of environmental effects).

The analysis found that significant environmental effects could occur as a result of the Proposed Program (and several of the Program alternatives), specifically in the areas of water quality and toxicology, noise, and cultural resources. However, as CDFG does not have the jurisdictional authority to mitigate impacts to these resources, such impacts have been identified as significant and unavoidable.



POSTED BY SACRAMENTO CO. CLERK RECORDER
FROM: MAR 03 2011 TO: April 2, 2011

DFG Suction Dredge Permitting Program SEIR NOA (SCH#2005-09-2070)

PUBLIC REVIEW: The Draft SEIR and supporting documents are available on the CDFG Program website (<http://www.dfg.ca.gov/suctiondredge>) and upon request at 530-225-2275. Copies of the Draft SEIR are available to review at the following county libraries and CDFG offices:

- 601 Locust Street, Redding
- 1701 Nimbus Road, Suite A, Rancho Cordova
- 1807 13th Street, Suite 104, Office of Communications, Sacramento
- 7329 Silverado Trail, Napa
- 1234 E. Shaw Avenue, Fresno
- 4949 Viewridge Avenue, San Diego
- 4665 Lampson Avenue, Suite J, Los Alamitos
- 3602 Inland Empire Blvd, Suite C-220, Ontario
- 20 Lower Ragsdale Drive, Suite 100, Monterey
- County libraries (please see web page listed above for list of County libraries)

PUBLIC COMMENT: Written comments should be received during the public review period which begins on February 28, 2011 and ends at 5 p.m. on April 29, 2011. Comments must be postmarked or received by April 29, 2011. Please mail, email, or hand deliver comments to CDFG at: Suction Dredge Program Draft SEIR Comments, Department of Fish and Game, 601 Locust Street, Redding, CA 96001, Written comments may also be submitted by email: dfgsuctiondredge@dfg.ca.gov (Please include the subject line: Suction Dredge Program Draft SEIR Comments) or by going to the Program website at (<http://www.dfg.ca.gov/suctiondredge>). All comments received including names and addresses, will become part of the official public record.

PUBLIC HEARINGS: All interested persons are encouraged to attend the public hearings to present written and/or verbal comments. Five hearings will be held at the following locations and times:

Santa Clarita: Wednesday, March 23, 2011 at 5 p.m. at the Residence Inn by Marriott, 25320 The Old Road, Santa Clarita, CA 91381

Fresno: Thursday, March 24, 2011 at 5 p.m. at the CA Retired Teachers Association, 3930 East Saginaw Way, Fresno, CA 93726

Sacramento: Tuesday, March 29, 2011 at 5 p.m. at Cal EPA Headquarters Building, Byron Sher Room, 1001 - I Street, Sacramento, CA 95812

Yreka: Wednesday, March 30, 2011 at 5 p.m. at the Yreka Community Center, 810 North Oregon Street, Yreka, CA 96097

Redding: Thursday, March 31, 2011 at 5 p.m. at Shasta Senior Nutrition Program, 100 Mercy Oaks Drive, Redding, CA 96003

If you require reasonable accommodation or require this notice or the DSEIR in an alternate format, please contact the Suction Dredge Program at (530) 225-2275, or the California Relay (Telephone) Service for the deaf or hearing-impaired from TDD phones at 1-800-735-2929 or 711.

Horizon Water & Environment
1330 Broadway Ave., Ste. 424
Oakland, CA 94612

POSTED BY SACRAMENTO CO. CLERK-RECORDER
TO: _____ FROM: _____

Mark Stoffer

This is letter was received from a friend that belongs to the sierra club, read it and get sick to your stomach for what a group of self indulgent egotistic fools can do to the constitution just because they can. Don't let them do this Mark

Marty, I remember you telling me how the moratorium was based on some problem local to the mouth of the Klamath, and that Wiggins' bill expanded it to the whole state.

Yesterday I was at a party with a lot of tree huggers (I am one too) and got to talking with a woman who had a different take on the origins:

She said that a very good friend of hers, here in the foothills, crafted the base of the legislation for Wiggins. Her motivation was focused first and foremost on our foothill rivers, not the Klamath. This person is entwined with one or more of the Sierra environmental groups. I didn't get names, dates, or facts. But the smirk on my contacts face led me to believe that it was a cynical, devious, indirect way to "protect" the Sierra region from their fears about methylation of 1850's Hg. The stuff about the direct danger to the fish spawn was just a convenient peg on which to carry their ends forward.

Another person in on much of this conversation is a science consultant who has worked contracts for DFG in the past. His position is that any disturbance of vintage Hg is bad. I told him that absolutely no data were presented to support the Wiggins bill showing damage to salmon. He chuckled. To him, like that fish professor at UCD, trying to get relevant safety data is a fools errand. Assumptions are much easier. Thus, DFG will be sent into a perpetual spin as they try to do an EIR or a CEQUA study. The issue is not science, it is fear and eco-selfishness. Also wearing a smug patronizing face, he implied that dredging will never again be approved.

To conclude, if this brief peek behind the eco-veil is even partly accurate, your opponents live here, not on the north coast. And to them their self-righteous ends justify their devious means. And someone on your side should vet whatever plans for studies come out of DFG to ensure that CONCLUSIONS will be reached at the end of the study. Don't waste any time or money if opponents don't agree up front on the scientific criteria for ending the moratorium. Don't let these people get you into a perpetual circle jerk.

Harry



SHASTA GROUP
MOTHER LODE CHAPTER
P.O. BOX 491554
REDDING, CA 96049-1554
(530) 547-0777
www.motherlode.sierraclub.org/shasta

May 9, 2011

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

Re: Suction Dredge Mining Regulation

Dear Mr. Stopher:

The Shasta Group wishes to supplement my verbal presentation given at the public hearing in Redding on March 31, 2011 with the following specific points:

- We oppose suction dredge mining and believe that the existing moratorium should remain in place permanently, thus we support the No Program Alternative. The damage to our rivers from suction dredge mining is so severe that it should be prohibited on an ongoing basis. The number of areas in which “significant and unavoidable” impacts result from suction dredge mining, including resuspension and discharge of mercury and other trace metals, increased toxic turbidity, direct and indirect disturbance of numerous sensitive bird, fish and wildlife species; impacts on cultural and archeological resources, speak for themselves. Suction dredge mining is a harmful practice that should be consigned to the list of other irresponsible mining practices abandoned due to adverse environmental impact, sometimes too late.
- The Reduced Intensity Alternative is flawed in various ways. Simply reducing a known environmental menace to a lower level is not a solution, especially when so little is known about the real extent of the mercury and trace mineral problem, which has come to be known as “Mining’s Toxic Legacy.” Allowing 41% of a known damaging and/or toxic situation to remain as an ongoing and permissible activity does a disservice to the public and the environment.
- The Shasta Group contends that the Reduced Intensity Alternative, as now configured, does not go nearly far enough in a number of areas. It cannot be called with any true accuracy “the environmentally superior alternative.”

- Re 2.1 Program Objectives, 2nd bullet; ” The program was developed to achieve the following objectives: Promulgate amendments to CDFG’s previous regulations as necessary to effectively implement Fish and Game Code sections 5653 and 5653.9...to ensure that suction dredge mining will not be deleterious to fish.” Although this objective as at the top of the list, none of the alternatives come close to meeting that objective – and if suction dredging is permitted this objective will become qualitative as there is no metric to track.
- The alternatives frequently say that DFG has no authority to impose regulations outside the waterway limits. DFG should work with Federal Agencies to develop a more comprehensive set of regulations to prevent these gross “lacunae” from occurring. Without comprehensive attention, the entire ecosystem within and around streams will degrade. This degradation will continue to occur and we will lose species.
- The miners are not aware of or do not care about the consequences of their disturbance to the environment. Frequently they do not have any knowledge of science or of the complex ecosystems that exist in the streams they mine. The solution is that the streams either need to be off limits to mining, or, if allowed, there must be sufficient funding to strictly police locations where dredging is going on. Since funding will always be in jeopardy, the only solution is to make streams off limits to suction dredging or other forms of mining in streams.
- The “3 feet from the current water level” restriction should be increased to 10 feet if mining is ever allowed. This would protect the shoreline from encroachment by miners altering the shoreline, or in areas where the banks are shallow. “Current Water Level” is not defined for limits of suction dredging. Without definition there will be multiple interpretations depending on seasonal flows.
- It would seem that nature allows certain adverse impacts to stream systems that improve fish species survival in the long term. Since logging and all types of development, including dams and other man made features have degraded the streams, it is not possible to know how much suction dredging activity could be allowed that would not result in a significant additional increase in degradation. We must err on the conservative side because everyone who drinks water has a stake in the outcome – in other words, everyone.

Thank you for the opportunity to comment further.

Sincerely Yours



Bruce Waggoner
Group Chair

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

Incomplete (and mis-interpreted) Research Studies

Mr Stopher, thank you for giving me the opportunity to offer some observations noted from intense review of this whole DSEIR process. I am a bit perplexed with my findings of the research I have done following this whole DSEIR process. Perhaps you could review some of my points noted here and recognize- as I do- why it is apparent that both the 1994 Environmental Impact Report and the new Subsequent Environmental Impact Report both reach the same conclusions: Dredging, as it is conducted via the 1994 regulations has no deleterious impacts on fish, and has less than significant impact on the environment. As further concerns are raised about localized and environmental issues, most likely modifications to the BMP's could offer real-time mitigative results to accommodate issues within the micro-regions throughout the State while still achieving your intent.

As we all know the DFG was directed by the Alameda Court to indentify any suction dredge issues that were detrimental to fish, yet it appears that California Department of Fish and Game paid its contractors (which apparently appear to have their own agendas) to do the studies and to offer up foregone conclusions based upon those studies. Many of the situations reviewed by the contractors and conclusions resulting from the reviews had nothing to do with the court order.

During the court proceedings the DFG stated that they had "new scientific information that showed that small scale dredging is harmful to fish". Yet the contents of the DSEIR refer to studies offering shoddy science and even taken into consideration the mis-calculations, the mis-identification of the tools used and the overall lack of evidence supporting their conclusions, the DSEIR still shows that effects of suction dredging on fish is **Less Than Significant**. The only way anyone would come to any other conclusion would be if they only read the summaries of the noted (non-peer reviewed) studies and not delved into reading the referenced studies page by page and reviewing the calculations, the data offered and its supporting "evidence".

One of the glaring omissions I immediately noted was this SEIR had no notations citing any pre-1994 reports which offered numerous peer-reviewed studies which demonstrated dredging had many beneficial environmental effects, and any of the negative aspects had less than significant effects on the watershed or needed further study to determine an actual impact. None of those pre-1994 studies could prove any **significant and unavoidable** effects and if the pre-1994 information found through scientific casework changed so drastically where is the proof and the reference to those old studies that are now proven to adversely affect the environment? The paid contractor neglected to include the damming evidence in this SEIR. Your contractor (Horizon Environmental) didn't deem it necessary to "supplement" the original EIR with their new and improved findings. Maybe they should have re-read the definition of a supplemental EIR before they began this process. Maybe they overlooked the part of the CEQA section 15384(a) which reads in applicable part: "... *Whether a fair argument can be made that the project may have a significant effect on the environment is to be determined by examining the whole record before the lead agency*". By effectively leaving out the pre 1994 research data, the data is skewed to the point that it appears that the only negative effects are present when dredging in the aquatic environment. And not surprisingly, this negative viewpoint is parroted all over the state in all the news media and media releases by environmental and fish groups throughout the state and it is disingenuous that that DFG makes no effort to set the record straight on such mis-information.

A Failed PAC Process

Next the DFG offers a PAC process where parties from both sides of the dredging issue meet to work through everyone's issues. There were many representatives from both side of the argument there, yet the pro-dredging faction seems to have been left out of the whole actual decision making and rule creation process. Many of the pro-dredging members of the PAC group were surprised they were not further contacted to continue this process.

Claudia Wise was one of the attendees who was a retired Physical Scientist who was previously employed at the U. S. Environmental Protection Agency and has had 29 years experience in chemical and biological instrumentation. She gave a presentation offering a broad cross section of peer reviewed science supporting the environmental benefits of suction dredging, yet it seems that none of the peer reviewed information she presented was used or seems to have even been considered or included in the final report. She was never asked by CDFG to produce any additional documentation to support her findings or to help them understand or clarify the information she provided them.

Show us what was wrong with the old regulations

Again, I offer, where was the *“fair argument can be made that the project may have a significant effect on the environment is to be determined by examining the whole record before the lead agency”*? It appears that much of the evidence used in this report was cherry-picked to reach a conclusion that shed dredging in a negative light.

I am not a typical reader of SEIR reports but I find it curious that a whole bevy of new regulations are proposed without the authors stating why the regulations are necessary and what their direct (supposed) benefit is to the riverine environment. After all, isn't this a subsequent EIR? Which is based on the compilation of both the previous report and the new information which makes the old rules and regulations outdated? Is this a typical process for the SEIR's authors to suggest remediation practices without providing supporting evidence for such measures? Is it a typical practice for the party affected by the closures and remediation practices to have to **GUESS** why such practices are warranted? Is this the substantial evidence warranted as evidenced by 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 might also be reached. Whether a fair argument can be made that the project may have a significant effect on the environment is to be determined by examining the whole record before the lead agency. 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. (b) Substantial evidence shall include facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts.*

I guess I am missing the expert opinion, supported by the facts. Obviously they accidentally overlooked that. It's a big document and I can understand a minor omission such as including expert opinion supported by facts.

Detrimental to fish

Let's talk about Detrimental to Fish. This document is full of irregularities- I find it odd that the DFG is tasked with making sure dredging is not detrimental to fish- yet there is no effort taken to define the word “detrimental”. This specific word apparently has lots of meanings depending upon its usage in various F&G documents. Gee, that's a good start for a boilerplate legal document. Apparently in the usage in regards to suction dredging, DFG's definition of “deleterious” in Section 2.2.2 of the SEIR is as follows: “ an effect which is deleterious to fish, for the purposes of section 5653, is one which manifests at the community or population level and persists for longer than one reproductive cycle or migration cycle”. A translation of that sentence appears to mean that if dredgers do not impact a community or population of fish for longer than one reproductive cycle, our impact is not deleterious. Let's stop here, no need to go any further. All the studies noted show that at most, all signs of dredging will be eliminated in the following year's wintertime high water.....

The proposed program will produce LTS (Less than significant) impact.

How come all of the proposed program (post 1994 regulations) dredging regulation changes start off with the statements: “The proposed regulations include the following prohibitions”, “The proposed regulations would prohibit..” etc... without proving there would be a significant impact under the old 1994 regulations. Before adopting new regulations, show us how the significant changes due to new peer reviewed environmental studies are making the old regulations outdated.

Mercury Chapter: 4.2 Water & Toxicology Impact WQ4, WQ5, CUM7

Mark, you suggested that we not consider arguments against the mercury topic since the DFG has no jurisdiction, however I encourage you to review the studies that Horizon Environmental used to support their "opinion" that dredging is bad for the environment. For a more in depth review of the studies that Horizon Environmental has supplied as "factual" (non-peer reviewed) evidence, I recommend you read Eric Maksymyk's letter to you (Mercury Response 25 April Maksymyk). He has spent an inordinate amount of time re-tracing and recalculating the contents of all the studies that Horizon chose to use as "evidence" that dredgers need to be further regulated beyond the 1994 regulations. In case you read my letter first, here are some highlights of Eric's research:

DSEIR Requirements for Significance

1. Increase levels of any priority pollutant (Hg) that would exceed State or Federal established levels, yet:

- Suction dredging removes 98% of the mercury from the river while not exceeding any State or Federal water quality standard

- Based on:

- Humphreys 2003 (USFS and CA RWQCB)

- Fleck 2010 (USGS)

Standard for Hg: 20mg/kg averaged over a 30 day period

Highest Levels measured by Humphreys: 1.9 mg/kg

Highest Levels measured by Fleck in dredge test: 0 mg/kg

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.

DSEIR finding is based on two things:

- 1.Speculation that suction dredges cause flouring of mercury

- 2.Speculation that remobilization of floured mercury causes transformation to MeHg

Yet, Humphreys found that ALL mercury in the sample prior to dredging passed through a 30 mesh screen (floured)

Humphreys found that ALL mercury in the tailings passed through a 30 mesh screen (floured)

And the dredge captured 98% of the floured mercury!

Other Conclusions Eric found in his review of Fleck, Humphreys and Alpers research (research data used by Horizon to come to a completely different conclusion):

- 1.Mercury is floured both prior to and after dredging

- 2.US Government studies prove that a standard suction dredge captures 98% of floured mercury

- 3.Fleck study found no detectable amounts of MeHG in discharge from the dredge

- 4.Fleck study found no significant detectable amounts of Hg in discharge from the dredge

- 5.Fleck study found a reduction in Hg(II)r levels from source material to tailings material

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**

- This factor is clearly speaking to increasing levels of MeHg within biota
- The question is do suction dredges do this?
- The DSEIR concludes they do, what do the studies show?
 - A flood event contributes far more Hg to the river than suction dredgers EVER could - **Natural load achieved in 24 hour period**
 - The timing of flood events will have significant impact on measured MeHg levels
 - The DSEIR doesn't take into account flood event timing; photodegradation (50% according to CA EPA); hatch timing; flood event contribution

In a nutshell- **DSEIR CONCLUSIONS ARE WRONG AND NOT BASED ON EVIDENCE OR FACT**

Eric's conclusion to the review of the Mercury facts:

It would take 14,800 permitted dredgers – all dredging at the confluence of Humbug Creek and the S. Yuba River to exceed the natural load of the S. Yuba River

The DSEIR is not presenting the facts – conclusions are based on conjecture and poor analysis intended to distort the impact of suction dredging

There is no evidence that suction dredging is any way harmful to the environment – under the 1994 program rules

There is no need to limit permits or nozzle sizes, there is no evidence supporting this

But don't believe me, take the time to review Eric's painstakingly methodical review and I am sure, you too will walk away thinking "what studies were the horizon people reading". Or as Eric concludes "We would better spend our time regulating the floods in the river to one every 1.5 years than we would limiting dredge permits or nozzle sizes"

Modal Verbs

A modal verb is an auxiliary verb which describe the possibility of an action. It doesn't represent an action, just the possibility of an action (**reasonable to assume, might, may, presumably, could, if, could be, likely, potentially**). There are literally hundreds of uses of modal verbs throughout this whole document. The place you will find them most frequently used is in the "Findings" section of each of the newly proposed regulations. As a document representing new and proven findings in regards to the detrimental impacts of suction dredging, this document contains too many of these modal verbs. Are these the words meant to describe scientifically proven and reproducible facts? A couple of examples come to mind (the document is full of examples of modal verbs)- obviously representations of hard core science as noted in the chapter entitled: "**Hydrology and Geomorphology**" Starting line 4: Implementation of this alternative is **likely** to have a greater adverse effect on hydrology and geomorphology resources in the Program Area due to the **potentially** unlimited number of permits that could be issued each year and the less restrictive regulations. Or let's look at Impact BIO-WILD-2 (4.3-48, line 19) Recreational activities such as suction dredging **may** impact special status passerine species by altering behavior, movements, and distributions, which **may** lead to nesting failure and

expenditure of critical energy reserves. Human activity, including mechanical noise, can alter bird... Every single chapter of this report is filled with these wishy-washy words.

Are these “proven facts” verifiable via CEQA pg 226, 15384. Substantial Evidence- (b) *Substantial evidence shall include facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts?* Show me the science that backs these non-factual opinions. Here are a few (of many) examples:

Impact B10WILD2 – Effects on Special Status Passerines Associated with Riparian Habitat-

This one is simple-can you provide us the studies that associate dredging with negative effects on the Passerines? This whole category is filled with Modal Verbs. I encourage you to enjoy the factual significance of the following statement: Suction dredging and associated activities may cause impacts to special-status passerine species and their habitats that would be considered potentially significant.... Potential for impacts to special status.... Come on guys... Japan just had an earthquake and tsunami which has created massive radiation releases from their nuclear plants, and I’d say there is potential or (better yet) would be considered potentially devastating to all the environments all over the world- that’s a good modal verb phrase to use also...So rather than someone’s opinion, let’s see the peer reviewed studies that show, definitively (beyond a shadow of a doubt) that suction dredging affects Passerines. as per CEQA pg 226, 15384. Substantial Evidence- (b) *Substantial evidence shall include facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts.* Show me the science that backs these non-factual opinions

GEO-1 Erosion reads:redistribution of the alluvial material has the potential.... Other potential impacts that are related.... Based on table 3-2, it is estimated.... Streambed sediment that is too large to pass through the intake nozzle is typically placed.....Harvey 1982 suggested..... This type of disturbance may result in.... again more opinions and less facts.

GEO-2 Destabilization of streambanks- A suction dredge operation can destabilize streambanks...7% of dredgers were undercutting stream banks (that also means that 93% weren’t doing so).....eroding of streambanks can destabilize vegetation....,It has been documented that some suction dredgers.... (oh really, which documents are we talking about??)..... could cause this effect.... It is likely that suction dredge mining will cause....

GEO-4 Destabilization of the channel profile- Suction dredging related activities have the potential...., The US Forest Service Observed on dutch creek (was it a study or observation?)

I can go on and on with this- in every category there are observations that are classified as scientific research using modal verbs to apparently describe someone’s opinions. Why aren’t we told what was wrong with the old regulations and which studies the new regulations were based on, or were they based upon opinions of the operators at Horizon Environmental?

Until someone comes up with some definitive studies proving that suction dredging harm either the rivers or its inhabitants, what is the reason to change the current regulations?. Show us the proof of the damage via the old regulations and then propose some solutions that both the PAC group and the experts agree on and only then can we work together to come up with solutions that work for both groups of people involved.

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California Department of Fish & Game
 Attention Mark Stopher
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Classification Comments and Best Management Practices (BMP) remediation

Allow me to enter the Suction Dredging DSEIR discussion from another viewpoint. There are lots of arguments on whether or not your draft prohibitions are valid or enforceable. Let's discuss using the BMP process as a opportunity to educate the small miner about the environment that surrounds him in his pursuit of his business finding gold.

As the Suction Dredging Permitting process stood under the 1994 rules, you would pay your fees and be given some basic regulations to follow while being engaged in the pursuit of gold. The regulations were pretty basic, and mostly dealt with common sense, like not suction dredging into a bank.

I'd like to suggest instead of mandating a bunch of new rules as Horizon Environmental suggests, perhaps you could expand the BMP booklet to the point from being just a book of rules to a manual that not only describes the outdoor environment that the project operator is working within, but also offers suggestions to the dredger on how to modify the stream to the benefit of fish or perhaps give ideas on ways to minimize sedimentation via the use of mechanical means. So rather than just telling us not to dredge into a bank, the manual would go into detail why you don't want to do so and perhaps offer suggestions for ways to mitigate any potential damages which may occur and you could also coordinate with the forest service and throw in some trail modification ideas.

I am suggesting creating an educational tool that the dredge operator could use as a reference while out on the jobsite, rather than a rule book telling us the penalties for not following regulations.

Everyone that runs a dredge enjoys the outdoor experience and I believe that they too would like to know the best practices to follow to ensure that they are not adversely affecting the environment around them. Not to mention, if you gave the suction dredgers the tools to work with, we could also work to help create ideal man-made fish habitat in ideal situations. If you had an educated workforce out on the rivers, we could help you create a better environment for all species. There is no need to regulate us as if we are criminals- if we had the educational tools I think you would find a lot of dredgers would work with the DFG.

I'd like to offer some BMP suggestions for some of the (supposed) recognized impacts of suction dredging:

1. **BIO-FISH-1 Direct Effects of Spawning fish-** Describe what Redds look like and any other endangered species that we may encounter, so we can steer clear of them. Describe what fish and amphibian egg sacks look like and where they typically found. Describe what endangered species look like and rather than penalizing someone for having one on their property, offer some sort of benefit to the property or claim owner for recognizing the species and informing the DFG of its whereabouts. If property owners are penalized for having endangered species on their property, there is incentive for the same property owners to ensure the species doesn't return. Let's get smart about this whole thing and get everyone out in the wilds working for the benefits of ALL species.
2. **BIO-FISH-5- Behavioral Effects on Juvenile or Adult Fish-** "Fish behavioral responses to noises and vibrations generated by dredging have not directly been quantified" – let's stop right here. No study, no proof. Obviously the scientists haven't observed the schools of fish feeding from the end of the sluice. They don't seem too bothered by the smorgasbord offered to them.
3. **BIO-FISH-7- Effects on Benthic Community-** What happens when a summertime torrential downpour happens and the creeks raise by 4 feet in a few moments? The whole Benthic community gets wiped out in the whole watershed. Dredging is a localized event, working on a small portion of any sized water course. Show us the proof of major irreversible damage.
4. **BIO-FISH-8 Creation and Alteration of Pools-** I used to work for a large land owner who paid a environmental consultant to come in and create stream habitat that was beneficial to trout. It cost the landowner about \$100,000 in contractor fees to attain a trout friendly creek. If DFG was smart, they

would train all of us dredgers to create ideal fish habitat too. And the best part is it wouldn't cost anyone anything. Free labor- I know, that is a concept that the state cannot comprehend.

5. **BIO-FISH-9 – Destabilization of Instream Habitat**- Give us the educational tools to help improve the stream habitat. We can create pools where there are gravel bars, we can modify the creeks to provide good habitat. Why does whatever we do have to have a negative connotation?
6. **BIO-FISH-10- Destabilization of Streambank**- Define stream bank. My canyon is bedrock wall lined canyon with no vegetative stream banks, just rock walls. It is impossible for me to destabilize rock walls. The 3 foot rule would protect nothing in my canyon and would exclude me from dredging all together.
7. **BIO-FISH-11- Effects on Habitat through damming**- The BMP manual could instruct dredgers ways to mitigate damming the creek by providing avenues for the fish to work around the project site. Educate us with the tools to ensure fish passage is not impeded.
8. **BIO-PIANT-1- Effects on Aquatic Plants** – show and tell us plants to make sure we keep away from and ensure they are not damaged during our project.
9. **BIO-HAB-4- Aquatic Invasive Species**- Give us a protocol to use when transferring equipment between distinct areas. Tell us what to look for on our equipment.
10. **BIO-HAB-6- Effects on Encampments**- Give us protocols that you expect for a clean encampment. Coordinate with USFS in designing proper protocol. Personally, I'd be interested in donating some money each year to the clean up of other old mining sites affecting my watershed. There is an old miners encampment downstream from my claims that has been abandoned since the 1980s' and it is a dump. I wouldn't mind contributing to the clean up of the site, as it is a bad example of what idiot miners can do.
11. **CUL-1/2/3- Substantial adverse changes to Historical Resources**- Dredgers dredge, which means we do our work within the high water mark of the rivers. The rivers and creeks of the Sierra Nevada are always eroding, and that means the movement of water through the years washes away anything that exists within the banks of such rivers. How anyone could suggest that there are any artifacts remaining within the eroded bank to bank sections of the rivers hasn't apparently seen many high water events when the river is 60 feet high and boulders the size of houses are crashing their way down the river. The probability of disturbing a significant archaeological resource in a creek bed or river bed is very low. Although historic mining sites occur along streams, just the stream flow itself and flooding has erased most evidence of prior mining in the stream channel itself. Although, the EIR speaks to possibilities, it does not address the actual probability of encountering a situation where suction dredging would disturb such sites and the probability of encountering such cultural resources while suction dredging would be very low. At a minimum, the BMP manual could give us instructions on what to do if we encounter such a site on the hillside above the water line- but finding a historical site within the high water line is a rather remote possibility.
12. **AES-2- Turbidity**- There are ways to minimize turbidity without shutting down suction dredging. I have read stories of people in New Zealand are hanging landscape fabric off the end of the dredge in deep water that allows the plume to fall the complete distance of the depth of the river before muddying up the whole water column behind the dredge. That way the muddy water is confined to the bottom of the river rather than the length of the whole water column. Another practice I used on a small creek I had (I was concerned about affecting the enjoyment of the river by others when I was in a silty section) was to string landscape fabric 7/8 of the way across the creek (put rocks on the creek bottom to hold down the fabric and then string the fabric above the water line) to filter the sediment I was stirring up (which it took out about 85% of it 15 feet downstream from my dredge). And the last 1/8 of the channel, I left deep fish ladder so if a fish wanted to get up to my pool they could swim up it (offering assorted resting pools on the way for them)
13. **Impact NZ1- Exposure of the Public to Noise Levels in Excess of City or County Standards**- I wonder if Horizon environmental recognized that suction dredging is a mining activity and as such falls under the industrial classification db, and not city or county standards- and the noise levels of such engines are well below such standards? How loud is a Honda Motor compared to a CAT 950 Loader (another mining tool)? If Horizon can prove that miners are violating such laws, let's see the proof as per as per CEQA pg 226, 15384. Substantial Evidence- (b) *Substantial evidence shall include facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts?* Show me the science that backs these opinions. An alternative to placing this in the Significant and Unavoidable category, maybe we can make a chapter in the BMP manual that asks the dredgers to find ways to quiet their motors in an effort to be "good neighbors" to the other outdoor users. If such an idea was suggested to me, I'd

go out of my way to quiet my motor down as it is annoying to me and I'd love to have it quieter. I just need a reason to do so.

14. **Impact CUM6: Turbidity/TSS Discharges from Suction Dredging-** This document gets more curious the more times you read it. In chapter 6, Section 6.2.3 on page 6-4 line 21 it states that Impact CUM6: Turbidity/TSS discharges from Suction Dredging are Significant and Unavoidable Environmental Impacts, yet in Chapter 4 on page 4.2-28 line 28 it states that Impact WQ-3 Effects of Turbidity/TSS Discharges from Suction Dredging is Less than Significant. Can you have it both ways? The conclusion on Chapter 4.2 states " Because dredging activities are largely conducted on a seasonal, temporary and intermittent basis in California, water quality degradation is expected to be infrequent and dispersed and thus not cause substantial, long term degradation of water quality". There- the DSEIR answered its own question about turbidity and dredging. I guess there are little "nuggets " of information in here after all. Are there studies that prove that dredging muddy water plumes are deleterious to fish? Let's see them. Turbidity isn't that big of a problem- there are things the dredgers can do to minimize the siltation in the water- see my previous response on item 15.
15. **Impact REC-1- Recreational Resources-** This is a touchy subject for all involved. The fly fishermen don't like the dredgers because they don't like hearing the motors on the rivers. The dredgers have equipment destroyed by others who don't share the same rights to the land as the miners do. Which came first, the chicken or the egg? The best we can do here is to try to find some sort of happy medium where both parties agree to disagree. I have heard stories of miners being unfriendly to fishermen- maybe remind the miners that they only own the mineral rights and they cannot dis-allow others to use the property for non-mining uses. If aesthetics are an issue, maybe the dredgers can paint their dredges to better blend into the surrounding environment, we can try to find ways to quiet our engines, proper ways to refuel our engines without spilling fuel, and overall just keeping our work environment clean when we are and are not there.
16. **WQ-1 – Contaminant Discharges- See Bio-Hab-6**
17. **WQ-2- Discharges of Oil-** Give us a protocol for fueling our dredges. The proposed rules are ridiculous- most of what we have on-site is a 5 gallon gas can. It is ridiculous to have a 5 gallon gas can 100 yards from the water (especially in my canyon with a 60 degree slope on each side- it is impossible for me to do). Proper refueling techniques- possibly the use of a hand bulb pump rather than a pour spout if you are refueling while on the water surface, or perhaps having a drip pan under the motor while it is located on the dredge.
18. **WQ-3 Turbidity- See Impact CUM6**
19. **WQ-4 Mercury-** Someone needs to re-read the Humphreys study- it states that the old style sluice boxes remove 98% of the mercury that passes through them. Why doesn't anyone at the DFG understand that 98% removal is a GOOD THING? Once the mercury is removed, have a county-wide reclamation program where the dredgers could drop off the mercury they find. This reclamation doesn't cost the state a dime, and will improve the health of the river. Why doesn't anyone see this?? You also need to review Eric Maksymyk's letter to you where he exposes the following significant details of some recent Mercury Research:

DSEIR Requirements for Significance

1. Increase levels of any priority pollutant (Hg) that would exceed State or Federal established levels, yet:

- Suction dredging removes 98% of the mercury from the river while not exceeding any State or Federal water quality standard

- Based on:

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1. Speculation that suction dredges cause flouing of mercury
2. Speculation that remobilization of floured mercury causes transformation to MeHg

Yet, Humphreys found that ALL mercury in the sample prior to dredging passed through a 30 mesh screen (floured)

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And the dredge captured 98% of the floured mercury!

Other Conclusions Eric found in his review of Fleck, Humphreys and Alpers research (research data used by Horizon to come to a completely different conclusion):

1. Mercury is floured both prior to and after dredging
2. US Government studies prove that a standard suction dredge captures 98% of floured mercury
3. Fleck study found no detectable amounts of MeHG in discharge from the dredge
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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**

- This factor is clearly speaking to increasing levels of MeHg within biota
- The question is do suction dredges do this?
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 - The timing of flood events will have significant impact on measured MeHg levels
 - The DSEIR doesn't take into account flood event timing; photodegradation (50% according to CA EPA); hatch timing; flood event contribution

In a nutshell- **DSEIR CONCLUSIONS ARE WRONG AND NOT BASED ON EVIDENCE OR FACT**

Eric's conclusion to the review of the Mercury facts:

It would take 14,800 permitted dredgers – all dredging at the confluence of Humbug Creek and the S. Yuba River to exceed the natural load of the S. Yuba River

The DSEIR is not presenting the facts – conclusions are based on conjecture and poor analysis intended to distort the impact of suction dredging

There is no evidence that suction dredging is any way harmful to the environment – under the 1994 program rules

There is no need to limit permits or nozzle sizes, there is no evidence supporting this

But don't believe me, take the time to review Eric's painstakingly methodical review and I am sure, you too will walk away thinking "what studies were the horizon people reading". Or as Eric concludes "We would better spend our time regulating the floods in the river to one every 1.5 years than we would limiting dredge permits or nozzle sizes"

The bottom line here is all the supposed evidence needs to be reviewed and re-worked. It appears that Horizon Environmental overlooked all the beneficial aspects of suction dredging in order to ensure that they included all the negative information (whether or not it was substantiated by peer reviewed studies) they could find. I won't accuse anyone of having an agenda, but if they didn't have an agenda, their research they took on was very sloppy (which may be worse for the California Tax Payer who is paying for this boondoggle.

The shining star in this whole process is via the use of the BMP to try to allow the dredgers an opportunity to make an effort for a voluntary effort to mitigate the suggested issues. At this point in time, and considering the condition of the California State budget, maybe the BMP might be the best way to come to a compromise which may best benefit all concerned for the least amount of money and pain.

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Attn: Mr. Mark Stopher

Re: Suction Dredging program Draft SEIR Comments

These comments are submitted by me as an individual dredge operator, and a Mineral Estate owner. I also want to say I support all of the legal comments submitted by Jerry Hobbs and Public Lands for the people.

The first thing I wish to address is the number of permits limited to 4000 permits on a first come first serve basis. What is to stop any radical environmental organization from buying all of the permits on the first day of Jan, thereby preventing any real dredge operator from getting one? This possibility is not even addressed in the DSEIR. I am a disabled Veteran and I don

May 9, 2011

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These comments are submitted by me as an individual dredge operator, and a Mineral Estate owner. I also want to say I support all of the legal comments submitted by Jerry Hobbs and Public Lands for the people.

The first thing I wish to address is the number of permits limited to 4000 permits on a first come first serve basis. What is to stop any radical environmental organization from buying all of the permits on the first day of Jan, thereby preventing any real dredge operator from getting one? This possibility is not even addressed in the DSEIR. I am a disabled Veteran and I don't get some of my checks until near the end of the month and therefore I would be at a severe disadvantage from receiving a permit as they will probably all be gone before I could write a check to the DFG. Please remove from the DSEIR.

Dredge Size Limitation: Limiting the size of the dredges to a 4' dredge will effectively get rid of all professional dredgers who depend on dredging to make their living. I am one of them,. I can not move enough material and clear off enough bedrock using a 4' dredge. This would dramatically lower my annual income to less than poverty level. Dredging is the same as any other form of mining. The more material you process, the more gold you are going to get. . You are not only going to impact me, but every dredge operator in the state. With gold prices soaring, all dredge operators are going to be severely impacted by this limitation. I also want the reference to dredgers as

Recreation removed from the DSEIR. There is no such thing as a recreational prospector. Some newer folks entering the industry brought this up back in 1994 when we worked on the AD Hoc committee and removed it due to the dangers it put the dredgers in. Please show the same intelligence in this situation.

Listing Dates in order to get a permit: dates for dredging are predicated on the weather and snow pack levels, NOT the time of the year. If there is high snow pack in the higher elevations, the rivers will remain higher and faster for a longer period of time and therefore the conditions are not safe for dredging but as the dredger would have to apply in the first week of January, if he has any chance of getting one of the limited permits he would not know the conditions of the rivers until much later and therefore be subjected to amending his permit. We have gone dredging some years in June due to low water conditions, and other years we were still not able to dredge in the beginning weeks of August due to high water runoff. In years past we always put the dates as directed by the regulated seasons and were open to dredging any time in that period. It should remain the same.

Affixing dredge permit numbers 30' high on side of dredge: This is totally impractical. If I move the dredge to a different view from the bank, would I be in violation. We use dredge feet, or rods to hold our dredge at the angle we want it to be in the river. It is not always riding straight up and down in the river. If the DFG warden wants to see my permit, he can get out of his vehicle and come down to the river and ask me for it. If I am under water at the time, he can either come back or wait until I surface. This is a job like any other. I do not want my personal information out in public view.

The 1994 statewide permit has worked well for years. Taking the livelihood of a lot of people should not be at the discretion of some radical enviros with an agenda. Limiting the time of the dredging seasons, changing them to work periods in the middle of winter, limiting the use of winches and other safety equipment is all hazardous to human lives. To do this in the name of protections is not only ridiculous, it is criminal.

There are so many flaws in this DEIR that to comment on all of them would take a book. As I first stated, PLP did a superb job of making the legal comments on the SDEIR itself and therefore I limited my comments to just a couple of the proposed changes to the regulations. It is obvious as to the preference of the DFG as the slant in which all of the above was so blatantly obvious as to make it almost laughable. Why are no studies included that show the positive effects of dredging? Mr. Stopher made the comment to me that he was not interested in the economic effect these regulations would have. This is a direct violation of State and Federal laws.

I thank you for giving me the opportunity to voice my feelings about the proposed Regulations but I would highly recommend that you keep the regulations the same as the 1994 REGS and make no further changes unless you can prove that dredging is deleterious to the fish and habitat. I would also recommend that DFG regulate the other user groups that have MORE effect of the riparian areas.

Sincerely,

Terry O Stapp

DFG warden wants to see my permit, he can get out of his vehicle and come down to the river and -

From: ["JoAnne Cedar"](#)
To: dfgsuctiondredge@dfg.ca.gov
CC:
Date: 05/09/2011 11:54:23 AM
Subject: Suction Dredge Comment Letter

Dear Fish and Game

My home is the Illinois Valley, where suction dredge and mining activity have severely damaged the health of wildlife and the environment. I see the holes, old tailing ponds with mercury, atv ruts, homemade 'no trespassing' signs and have on occasion heard gunshots to deter me from hiking with my dogs on BLM land.

The tall tree nesting birds I have come to know over the years no longer come. Eagle and osprey have gone. The salmon can no longer spawn because the streambeds are dry, and the noise repels all beings, human and animal.

I hope that Oregon will follow the example of California and outlaw this barbaric practice.

Sincerely,

JoAnne Stone
Medical Provider
Cave Junction

**Karuk Tribe • Klamath Riverkeeper • Pacific Coast Federation of Fishermen's Associations
• Institute for Fisheries Resources • Friends of the Trinity River • Northern California
Council, Federation of Fly Fishers • Foothills Angler Coalition • Upper American River
Foundation • Butte Environmental Council • Friends of the River • Center for Biological
Diversity • Friends of the North Fork • Granite Bay Flycasters • Southern California
Watershed Alliance • Environmental Law Foundation • Environmental Justice Coalition for
Water • Klamath-Siskiyou Wildlands Center • Rogue Riverkeeper • Environmental
Protection and Information Center • California Sportfishing Protection Alliance • Mid-
Klamath Watershed Council • Friends of the Eel River**

May 9, 2010

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

Dear Mr. Stopher:

The groups identified below worked collaboratively and appreciate the opportunity to submit these written comments on the Department's Draft Subsequent Environmental Impact Report and Draft Regulations. It is clear that significant time and effort were expended to draft the dSEIR and proposed regulations. However, we ask that the Department take the following comments into account, as we still see significant harms that we believe can and must be mitigated. We look forward to working with the Department to revise suction dredge mining rules in order to ensure that the activity has no deleterious affect on fish and wildlife and meets all applicable laws.

These comments are submitted on behalf of the following groups and governments: Karuk Tribe, Klamath Riverkeeper, Pacific Coast Federation of Fishermen's Associations, Institute for Fisheries Resources, Friends of the Trinity River, Northern California Council, Federation of Fly Fishers, Foothills Angler Coalition, Upper American River Foundation, Butte Environmental Council, Friends of the River, Center for Biological Diversity, Friends of the North Fork, Granite Bay Flycasters, Southern California Watershed Alliance, Environmental Law Foundation, Environmental Justice Coalition for Water, Klamath-Siskiyou Wildlands Center, Rogue Riverkeeper, Environmental Protection and Information Center, California Sportfishing Protection Alliance, Friends of the Eel River and the Mid-Klamath Watershed Council.

Sincerely,

S. Craig Tucker, Ph.D.
Klamath Coordinator
Karuk Tribe
ctucker@karuk.us
916-374-8838

Background

The current process governing the revision of rules regulating suction dredge mining dates back to a 2005 complaint filed by the Karuk Tribe against the Department. The Department's failure to act on a court order to revise suction dredge rules pursuant to CEQA and applicable provisions of the Fish and Game Code in a timely manner led the Karuk Tribe to collaborate with others including the Pacific Coast Federation of Fishermen's Associations, the Institute for Fisheries Resources, Klamath Riverkeeper, the Sierra Fund, Friends of the North Fork, Friends of the River, California Trout, the California Tribal Business Alliance and others to support legislation resulting in a statewide moratorium on suction dredge mining until the court order was fulfilled (SB 670, Wiggins).

In addition, the Karuk Tribe collaborated with others in 2009, including Pacific Coast Federation of Fishermen's Associations, Institute of Fisheries Resources, Center for Biological Diversity, Klamath Riverkeeper, Friends of the Earth, and California Sportsfishing Protection Alliance, in further litigation over Fish and Game's improper use of tax payer dollars to fund the suction dredge mining permitting program. That litigation, which is ongoing, also resulted in a court ordered moratorium on issuance of permits until new regulations are adopted.

Since the legislative and court ordered moratoriums on the issuance of dredge permits were enacted the Department has moved quickly to promulgate new rules and regulations.

In December of 2009 we provided extensive comments on the Department's Initial Study of the effects of suction dredge mining. We appreciate the opportunity to continue participating in this process with these comments on the draft Subsequent Environmental Impact Report (dSEIR).

The comments below build on all information previously submitted as part of the current CEQA process.

COMMENT # 1: THE DEPARTMENT MUST COMPLY WITH THE REQUIREMENTS AND PROTECTIONS PROVIDED IN CEQA AND FISH AND GAME CODE §§5653, 5653.9 TO ENSURE THAT NO SUCTION DREDGE MINING OPERATION WILL CAUSE DELETERIOUS IMPACTS TO FISH.

Reasoning

Fish and Game Code §§5653 is a rather unique environmental statute. The plain language of subsections (a) and (b) require the Department to prohibit suction dredge mining throughout the state of California, unless the Department: (1) adopts regulations that comply with CEQA and the APA; *and* (2) makes a determination prior to the issuance of any permit that no deleterious impacts will occur to fish from the proposed suction dredge mining operation.

In other words, if the Department has information indicating that suction dredging activities *may* cause deleterious impacts to fish on a particular river segment or stream, *or if the Department lacks the data to reasonably ensure that no deleterious impacts will occur to fish*, the Department *must prohibit* suction dredge mining activities on the respective water body.

The Department can satisfy its obligations under CEQA and Fish and Game §5653 in one of two ways:

(1) during the rulemaking phase, the Department can prohibit suction dredge mining on all river segments and streams unless it has reasonable quantitative or qualitative information to establish that individual and cumulative suction dredge mining activities will not cause deleterious impacts to fish; or

(2) during the permit issuance phase, the Department can conduct the required analysis on a permit-by-permit basis (which would require permit applicants to submit site specific information about their proposed suction dredging operations).

Clearly, the first option is superior for the protection of fish, their habitat and water quality, and to avoid unreasonable time constraints on Departmental staff. Not surprisingly, the dSEIR and draft regulations indicate that the Department does not intend to undergo a deleterious impact analysis on a permit-by-permit basis. Therefore, in order to comply with CEQA and Fish and Game Code §§5653 and 5653.9, the Department must close all river segments and streams to suction dredge mining unless it has sufficient information to establish no deleterious impacts will occur to fish.

However, the dSEIR and draft regulations have done the exact opposite. The Department is allowing suction dredge mining on all river segments and streams *unless* it has evidence to establish that suction dredge mining will cause deleterious impacts to fish.¹

¹ Moreover, as discussed in Comment Nos. 2 and 29, the Department has applied an inappropriately narrow standard to determine what is a ‘deleterious impact’ to fish. The Department also claims it lacks the authority to regulate impacts on water quality, even when adverse affects on water quality directly cause

For example, the dSEIR provided considerable analysis and evidence regarding the adverse impacts caused from suction dredging in rivers historically used for mining, due to the resuspension and methylation of mercury. The dSEIR provides the names of these rivers, and also identifies those rivers listed as impaired for mercury and turbidity under the [proposed] 2010 303(d) list. The dSEIR concludes that suction dredge mining on these rivers will cause significant adverse impacts to water quality and biological resources. The dSEIR logically raises the closing of these rivers to suction dredge mining to mitigate the adverse impacts.

However, the Department rejected this mitigation measure. Instead, it is *not* closing *any* rivers that were historically used for mining, *nor any* rivers listed as impaired for mercury or turbidity on the 303(d) list. The Department rationalized that it cannot definitively identify *all* river segments in which suction dredge mining will cause resuspension and methylation of mercury. Therefore, closing the rivers on which it knows this will occur may not mitigate all adverse impacts from mercury (*i.e.* some rivers may be overlooked). The Department concluded that the adverse impacts from resuspension and methylation of mercury are “unavoidable.” *See also* dSEIR §6.2.3, pp. 6-4 (Significant and Unavoidable Impacts).

This analysis is nonsensical. Moreover, the Department is in clear violation of CEQA, which requires adoption of all feasible mitigation measures. In this case, feasible mitigation would involve the mere proscription all such rivers (historically used for mining and impaired for mercury and turbidity) as “Class A” under its regulations, which would prohibit suction dredge mining year round. 14 CCR §228.5(b). Such a mitigation measure is not only feasible, and therefore required under CEQA, it is mandated under Fish and Game §5653, which prohibits the issuance of permits for suction dredging activities unless the Department determines the operation will not be deleterious to fish.² In this case, the Department has determined the activity *will be* deleterious to fish. Thus, allowing it to occur without mitigation is without basis in law or fact.

Recommendation

Close suction dredge mining to all river segments, streams and lakes unless the Department has reasonable quantitative or qualitative information to establish that suction dredge mining activities will not cause deleterious impacts to fish or their habitat, including water quality. In addition, this determination must be made by applying a common use definition of “deleterious”, such as that found in a dictionary. (See Comment No. 2.)

Such closures would at a minimum include, but not be limited to, the following:

harm to fish. As discussed in more detail below, the Department’s interpretation of the plain language of the authorizing statute for its permitting program, as well as its authority under CEQA and the Fish and Game Code, are narrow to the point of absurdity.

² For further discussion and details, please refer to our Initial Study comments.

1. All river segments and streams with historical gold mining activities in which mercury was utilized;
2. River segments and streams listed as impaired under 303(d) of the Clean Water Act due to turbidity, water temperature, sediment, and mercury;
3. All river segments and streams designated as components of the National or California Wild and Scenic Rivers System or deemed eligible for protection by federal or state agencies under such systems. Federal and State rivers are to be managed to protect their specific outstandingly remarkable scenic, recreation, historical/cultural, fish/wildlife, ecological, geological, and other values. In addition, water quality on federally and state protected rivers must meet or exceed federal or state criteria or federally approved state standards for aesthetics, fish and wildlife propagation, and primary contact recreation.³
4. All rivers protected pursuant to provisions of the California Wild and Scenic Rivers Act (Chapter 1.4 (commencing with Section 5093.50) of Division 5 of the Public Resources Code). DFG has a responsibility in its permitting process to protect the free flowing character and extraordinary values of state designated rivers;⁴
5. All river or stream segments designated by the Fish and Game Commission as Wild Trout Waters or Heritage Trout Waters, or deemed suitable for designation pursuant to Section 1727 of the Fish and Game Code;
6. All river segments that provide critical, potential, and historical habitat for federally or state listed threatened species or endangered species, “Special Animals” (e.g. species at risk, special status species, species of special concern) and candidate/proposed species);
7. Rivers in Key Watersheds as identified by the Northwest Forest Plan;
8. All stretches of rivers in which miners’ off-river activities (hauling supplies, camping, taking dredges on or off river, refueling, emptying sluices, sorting concentrates, etc.) will likely cause negative impacts to the immediate environment because it results in activities such as trampling of sensitive or culturally significant plants, impacts to cultural resources; fuel spillages, or handling of hazardous materials.

In addition, the Department must clearly state in the final regulations that it will deny any permit application if it has reasonable belief that suction dredge mining will occur on a river segment or in a manner that may cause deleterious impacts to fish or that was not

³ Public Resources Code, Chapter 1.4 (commencing with Section 5093.50) of Division 5.

⁴ Public Resources Code Section 5093.61.

reviewed for its deleterious impacts to fish during the 2011 rulemaking process, and therefore its impacts are unknown.

It is also strongly suggested that the Department state in its regulations that it will undergo a rulemaking process to reclassify any particular river segment, stream or lake if it obtains sufficient new information to warrant it, pursuant to CEQA and the APA.

COMMENT # 2: THE DSEIR INAPPROPRIATELY DEFINES “DELETERIOUS” EFFECTS TO FISH.

The dSEIR Page 2-5 states:

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.

Under the canons of statutory interpretation, it is presumed that the legislature intended undefined words to have the same meaning they are given in every day usage. Fish and Game Code §5653 does not define “deleterious.” The word is defined in Webster’s as *harmful, often in a subtle or unexpected way*. The definition assigned by the Department is entirely too narrow. The Department asserts that its definition is consistent with the legislative history of Fish and Game §5653. However, the Department provides no basis for its claim. In fact, a review of the legislative history makes clear that the Department’s contention is patently false.

The primary references and a summary of the documented legislative history of §5653, dating back to 1873, was provided to the Department in a communication on March 10, 2010 by Friends of the North Fork. In their letter, Friends of the North Fork pointed out that:

- In 1961, "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 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, from which he specifically 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."

- In an analysis of AB 1459 provided to members of the Legislature in 1961, the Legislative Analyst's Office said that, under the bill, "the department must then determine whether the operation will be safe for fish life and if so it will issue a permit to the applicant." So, in that view of the intent of "not deleterious to fish," legislators were informed that it meant the activity is "safe for fish life."
- In a letter to the Governor requesting his signature on AB 1459, the Department of Fish and Game said, "The department shall issue a permit if it is judged that no damage will occur to fish, aquatic life, and the aquatic environment." So in information on which the Governor based his decision to sign AB 1459 into law, "not deleterious to fish" meant "no damage" to "fish, aquatic life and the aquatic environment."
- In the handful of bills since 1961 affecting this section, no legislation has ever used a term other than "deleterious to fish" nor offered any other interpretation of its meaning.

Thus we assert that the Department has failed to justify its claim that the definition of 'deleterious effect' used in the dSEIR, that is *one which manifests at the community or population level and persists for longer than one reproductive or migration cycle* is consistent with the legislative history.

Recommendation

Adopt a definition for phrase 'deleterious effect' that is consistent with the legally acceptable dictionary definition of the word 'deleterious.' We suggest the following language be included in the Fish and Game Code:

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, flours 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 in stream or riparian habitats in a way that has a harmful effect on the ability of "fish" to successfully feed, reproduce or evade predators.

COMMENT # 3: THE INITIAL PLAN FAILS TO DESCRIBE HOW THE DEPARTMENT WILL LIMIT THE SUCTION DREDGE PROGRAM BASED ON FINANCIAL CONSTRAINTS ON ENFORCEMENT AND MANAGEMENT

Reasoning

The Department should evaluate whether or not it has the capacity to enforce the proposed regulations under existing fee structure and budget. We note that the Senate Natural Resources Committee staff analysis for SB 670 concluded that:

“In previous years, DFG has acknowledged that the dredging program's fees are inadequate to cover the cost of the program. It has previously estimated that the permits cost an average of \$450 to process and to cover the costs of the program, which if extrapolated to the approximate 3000 permits would result in an expenditure of about \$1.3 million...”

Commenters note that the Department claims that the annual average revenue generated by the program is \$375,000.⁵

Clearly, the fees associated with permit applications do not cover the costs of the program. This is further demonstrated by Judge Roesch's July 9, 2009 Order Granting Plaintiff's Motion for a Preliminary Injunction, which ordered the Department to *“immediately cease and desist from using funds obtained by them from the State of California General Fund to issue suction dredge permits...”*⁶ *Hillman v. Dept. Of Fish and Game*, Alameda County Superior Court, Case No. RG09434444. This order effectively shut down the program.

To state it another way, the dredge program is subsidized by taxpayers at a time when budget cuts are resulting in layoffs of teachers, law enforcement, and emergency personnel. Can the Department commit itself to long term enforcement of a complex regulatory program involving thousands of miners in remote corners of the state when it depends on General Funds to finance it? This problem should be thoroughly evaluated in the dSEIR.

Although the Department asserts that it has no flexibility to alter fees without legislative consent, we note that Fish and Game §5653 (c) states:

*The department shall issue a permit upon the payment, in the case of a resident, of a base fee of twenty-five dollars (\$25), as **adjusted under Section 713**, when an onsite investigation of the project size is not deemed necessary by the department, and a base fee of one hundred thirty dollars (\$130), as **adjusted under Section 713**, when the department deems that an onsite investigation is necessary. In the case of a nonresident, the base fee shall be one hundred dollars (\$100), as **adjusted under Section 713**, when an onsite investigation is not deemed necessary, and a base fee of two hundred twenty dollars (\$220), as **adjusted under Section 713**, when an onsite investigation is deemed necessary (emphasis added).*

⁵ Suction Dredge Form 399 Exhibit C.

⁶ Hillman et al. v Department of Fish and Game, Alameda County Superior Court Ruling, July 9, 2009, Case RG09- 434444

Section 713 (f) states:

The department shall, at least every five years, analyze all fees for licenses, stamps, permits, tags, and other entitlements issued by it to ensure the appropriate fee amount is charged. Where appropriate, the department shall recommend to the Legislature or the commission that fees established by the commission or the Legislature be adjusted to ensure that those fees are appropriate (emphasis added).

Recommendation

The Department should limit the scope of its suction dredge program on the basis of what its finances allow under the current fee structure or else propose a fee increase to allow for implementation of the proposed regulations. In other words, it should limit the program to what it can honestly and pragmatically enforce and manage or else charge more for permits. Otherwise the Department cannot assure that its obligation to regulate and monitor suction dredge mining activities to prevent a deleterious impact can be met.

The current dSEIR fails to evaluate how the department, with existing budgetary constraints, can possibly check 4,000 dredge operations for compliance with detailed regulations regarding distances to stream banks, presence of mussel beds, and presence of spawning salmonids in real time. Moreover, the dSEIR concludes that certain activities will not result in adverse impacts, based on the presumption that miners will adhere to prescribed restrictions on the respective activity, such as practicing reasonable care to limit impacts of turbidity or the responsible handling of found native artifacts, without guidance on what is expected. Without the means to enforce these key areas, the adverse impacts of dredging even under the updated regulations will be significant. We strongly suggest limiting the program to that which the Department can reasonably and pragmatically implement and enforce.

COMMENT #4: THE SEIR MUST COMPLY WITH THE DEPARTMENT'S DUTY UNDER CEQA TO INFORM THE PUBLIC OF HOW THE PROPOSED ACTION CONFLICTS WITH EXISTING LAWS AND THE FACILITATION OF OTHER PERMITTING PROGRAMS

Reasoning

An EIR is required to be an informational document from which the public can properly weigh any adverse effects presented by a project.⁷ The dSEIR must fully disclose and analyze the Project's potential conflicts with existing laws and regulatory programs. More importantly, the Department is required to operate its program in conformity with other existing state and federal laws, pursuant to the Public Trust and the Business and Professions Code.

⁷ Pub. Res. Code §§ 21061; 21005(a) states that, "noncompliance with the information disclosure provisions of this division which precludes relevant information from being presented" violates CEQA.

Although the dSEIR does conclude that the proposed action would indeed have significant and unavoidable impacts on water quality, passerines, and cultural sites, it fails to describe how the proposed action conflicts with existing state and federal laws and what agencies would be responsible for regulating these impacts.

CEQA requires the SEIR to analyze whether the Project will “[v]iolate any water quality standards or waste discharge requirements.”⁸ These standards promulgated under the Clean Water Act and administered by the State Water Quality Control Board are crucial for a determination of the Project’s impacts on hydrology and water quality. For example, we will note below inconsistencies with the Klamath TMDL.

In addition, the draft regulations allow suction dredge mining to occur on river segments and streams included in both the State and Federal Wild and Scenic Rivers Acts. See Table below (Wild and Scenic Rivers Open to Suction Dredge Mining Under Draft Regulation). In particular, the State Act requires all departments to use their authority under all existing laws to protect the free flowing nature of the rivers and prevent against negative impacts for the extraordinary values for which they were adopted into the system, such as their cold water fisheries and high clarity of the water. Public Resources Code §5093.61.

Recommendation

We assert that the SEIR must analyze any potential conflicts with the achievement of Clean Water Act standards under §§ 303(d), 401, 402; the Porter-Cologne Act, and any other relevant provisions of applicable law such as the California Endangered Species Act, the state and federal Wild and Scenic Rivers Acts, and the national Endangered Species Act. In addition, the EIR should describe what additional permits may be required for mining to be consistent with other applicable laws.

We recommend, at a minimum, that suction dredge mining, currently allowed under the draft 2011 regulations, be prohibited on the river and stream segments identified in the follow six tables, due to their: (1) adoption into the State and/or Federal Wild and Scenic Rivers Act; (2) their closures under the 1994 Regulations; (3) status as California Heritage and Wild Trout Waters; (4) identification as Central Valley Steelhead and Salmon Critical Habitat and Reintroduction Areas; (5) California Red-Legged Frog Critical Habitat; and (6) Central Valley Mercury-Impaired Waters:

Wild and Scenic Rivers Open to Suction Dredge Mining Under Draft Regulations			
RIVER	SEGMENT	CLASS	REGULATION
NF American River (FD)	Upstream of Big Valley Ck	H	Open year round
NF American (FD, FE)	Clementine Dam to Big Valley Creek	G	Open Sep. 1-30
Black Butte (FD)	Mendocino County	F	Jul. 1 – Sep. 30
Cache Creek (SD)	Mainstem/tribs	F	Jul. 1 – Sep. 30
East Carson River (SD/FE)	Carson Falls to Nevada state line	G	Open Sep. 1-30
Eel River (SD/FD)	Mendocino & Humboldt Counties	F	Jul. 1 – Sep. 30

⁸ Appendix G § VIII, relied upon in the Initial Study at p. 70.

NF Eel River (SD/FD)	Mendocino County	F	Jul. 1 – Sep. 30
Middle Eel (SD/FD, FE)	Mendocino County	F	Jul. 1 – Sep. 30
SF Eel River (SD/FD)	Mendocino County	F	Jul. 1 – Sep. 30
MF Feather River (FD)	Main stem	D	Open Jul. 1 – Jan 31
NF/SF Kern River (FD)	1000-4000 feet elevation	F	Jul. 1 – Sep. 30
SF Kings River	1000-4000 feet elevation	F	Jul. 1 – Sep. 30
MF Kings River	1000-4000 feet elevation	F	Jul. 1 – Sep. 30
Klamath (SD/FD)	Below 4000 ft in Siskiyou and Humboldt Counties	F	Jul. 1 – Sep. 30
Klamath (SD/FD)	In Del Norte County	D	Open Jul. 1 – Jan 31
Merced/SF Merced (FD)	From 2000-5000 feet elevation	D	Open Jul. 1 – Jan 31
Merced/SF Merced (FD)	Below 2000 feet elevation	F	Open Jul. 1 – Sep. 30
Owens River Hdwtrs. (FD)	Includes Glass and Deadman Creeks	H	Open year round
Palm Canyon Creek (FD)	Main stem	H	Open year round
Middle Piru Creek (FD, FE)	Fish Creek to Pyramid Dam	H	Open year round
Salmon (SD/FD)	Below 4000 feet elevation	F	Open Jul. 1 – Sep. 30
Scott River (SD/FD)	Main stem	F	Jul. 1 – Sep. 30
Sisquoc River (FD)	Mainstem/tribs	D	Open Jul. 1 – Jan 31
Smith River (SD, FD)	Main stem downstream of NF/SF confluence	F	Jul. 1 – Sep. 30
NF Smith (SD, FD)	Mainstem/tribs	B	Open Jul. 1 – Aug. 31
MF Smith (SD, FD)	Mainstem/tribs to Knopti Creek	B	Open Jul. 1 – Aug. 31
MF Smith (SD, FD)	Mainstem/tribs upstream of Knopti Creek	F	Jul. 1 – Sep. 30
SF Smith (SD, FD)	Main stem and tribs from to Quartz Ck	B	Open Jul. 1 – Aug. 31
SF Smith (SD, FD)	Mainstem/tribs upstream of Quartz Creek	F	Jul. 1 – Sep. 30
Trinity River (SD/FD)	Main stem from Humboldt County line to North Fork	D	Open Jul. 1 – Jan 31
Trinity River (SD/FD)	Main stem from North Fork to Grass Valley Creek	C	Open Jun. 1 – Sep. 30
SF Trinity River (SD/FD)	Main stem	B	Open Jul. 1 – Aug. 31
Tuolumne River (FD)	From 2000-5500 ft	D	Open Jul. 1 – Jan 31
West Walker (SD, FE)	Mainstem/tribs below 7,000 feet	G	Open Sep. 1 – Sep. 30
South Yuba River (SD, FE)	From Yuba to Lk Spaulding	D	Open Sep. 1 – Jan. 31
Van Duzen River (SD/FD)	Eel River confluence to headwaters	F	Jul. 1 – Sep. 30

CODES:

(SD) – State designated Wild & Scenic River.

(FD) – Federal designated Wild & Scenic River.

(SD/FD) – Jointly designated state and federal Wild & Scenic River.

(FE) – Identified by a federal agency as eligible for federal designation.

(FL) – Proposed for Wild & Scenic designation or study in pending federal legislation.

Closures Under 1994 Regulations	Open Under 2011 Draft Regulations
Inyo County	Owens River above 3500 feet elevation, NF Bishop, Horton, Pine, and lower Rock Creeks
Marin County	Gallinas, San Clemente, San Rafael Creeks
Mendocino County	Eel River, including main stem, SF, NF, Middle Eel

Mono County	Owens River from Inyo County line to Dry Creek, East Walker River, Buckeye, Desert, Hot, Little Hot, Robinson Creeks
Napa County	Putah Creek upstream of Berryessa Res.
San Benito County	San Benito River and tributaries, except Pacheco Creek
San Luis Obispo County	Estrella River, Cuyama River, Cholame, San Juan, Huasna, Lopez, and other creeks
NF American River>Iowa Hill Bridge (Placer County)	NF American River>Iowa Hill Bridge
Big Chico Creek Manzanita Ave>Higgins Hole	Big Chico Creek (all)
Big Creek (Fresno County)	Big Creek downstream of Huntington Res.
Big Creek (Trinity County)	Big Creek
Chowchilla River upstream of Eastman Lake	Chowchilla River upstream of Eastman Lake
Clavey River (Tuolumne County)	Clavey River below 5,500 feet elevation
Deep Creek (San Bernardino County)	Deep Creek upstream of Holcomb Creek
Dillon Creek (Siskiyou County)	Dillon Creek
Dinkey Creek (Fresno County)	Dinkey Creek downstream of 4,000 feet elevation
Eel River, all forks and tribs in Mendocino County	Eel River and all forks
Horton Creek (Tuolumne County)	Horton Creek
Kaweah River upstream of Kaweah Res. (Tulare County)	Kaweah River below 4,000 feet elevation
NF Kern upstream of Isabella Res. (Kern, Tulare Counties)	NF Kern below 5,000 feet elevation
Kings Rivers Tulare Res>Pine Flat Dam	Kings River below 1,000 feet elevation
Malibu Creek (all) (La County)	Malibu Creek upstream of Rindge Dam
Merced River from San Joaquin River confluence>Crocker-Huffman Dam	Merced River (all)
Pit River (Lassen, Modoc Counties)	Pit River
Sacramento River Box Canyon Dam>SF Bay	Box Canyon Dam to Shasta Reservoir, Tehama County line to SF Bay
San Joaquin River Friant Dam>Delta	San Joaquin River below Friant Dam
San Mateo Creek (San Diego, Orange, Riverside Counties)	San Mateo Creek in Camp Pendleton & San Onofre State Beach
Santa Ana River upstream of Bear Creek (San Bernardino County)	Santa Ana River upstream of Bear Creek
Stanislaus River downstream of Goodwin Dam	Stanislaus River below Goodwin Dam
Trinity River downstream of SF Trinity (Humboldt, Trinity Counties)	Trinity River downstream of SF Trinity confluence
Tuolumne River Waterford Bridge>La Grange Dam (Stanislaus County)	Tuolumne River downstream of La Grange Dam

California Heritage and Wild Trout Waters Open To Suction Dredge Mining Under Draft Regulations			
WATER	DESCRIPTION	CLASS	SEASON
Yellow Creek	Upstream of North Fork Feather in Plumas County	D	Open Jun. 1 – Sep. 30
North/Middle Forks Stony Ck.	In Glenn County	F	Open Jul. 1 – Sep. 30
North/Middle/South Forks, & Main Stem Stony Creek	In Colusa County	D	Open Jul. 1 – Jan 31
Middle Fork Stony Creek	In Lake County	D	Open Jul. 1 – Jan 31
Truckee River	From Trout Creek to Grey Creek in Nevada County	G	Open Sep. 1-30
South Fork Merced River	Below 2,000 feet elevation in Mariposa County	F	Open Jul. 1 – Sep. 30
	From 2,000 feet elevation to Yosemite Park boundary	D	Open Jul. 1 – Jan 31
Merced River	Below 2,000 feet elevation in Mariposa County	F	Open Jul. 1 – Sep. 30
Kings River	Below 4,000 feet elevation in Fresno County	F	Open Jul. 1 – Sep. 30
SF Kings River	Below 4,000 feet elevation in Fresno County	F	Open Jun. 1 – Sep. 30
Sacramento River	Above Shasta Res. in Shasta County	D	Open Jul. 1 – Jan 31

	In Siskiyou County	H	Open All Year
Owens River	Above 3,500 feet elevation in Inyo County	E	Open Sep. 1 – Jan. 31
North Fork American River	Clementine Res. to Big Valley Canyon in Placer County Above Big Valley Canyon in Placer County	G H	Open Sep. 1-30 Open All Year
Rubicon River	Below Hell Hole Res. in El Dorado County Below Hell Hole Res. in Placer County	H E	Open All Year Open Sep. 1 – Jan. 31
Nelson Creek	Upstream of Middle Fork Feather in Plumas County	E	Open Sep. 1 – Jan. 31
Middle Fork Feather River	Upstream of Oroville Res. in Butte & Plumas Counties	D	Open Jul. 1 – Jan 31
Middle Fork Stanislaus River	From 2,000 to 5,500 feet elevation in Tuolumne County Below 2,000 feet elevation In Tuolumne County	D F	Open Jul. 1 – Jan 31 Open Jul. 1 – Sep. 30
Lavezzola Creek	North Fork Yuba tributary in Sierra County	E	Open Sep. 1 – Jan. 31
Hot Creek	Tributary of the Owens River in Inyo County	H	Open All Year
East Carson River	Carson Falls to Nevada State Line in Alpine County	G	Open Sep. 1-30
Deep Creek	Green Valley Ck. to Holcomb Ck. in San Bernardino Cnty.	H	Open All Year
Clavey River	From 2,000 to 5,500 feet elevation in Tuolumne County	D	Open Jul. 1 – Jan 31
Bear Creek	Santa Ana River tributary in San Bernardino County	E	Open Sep. 1 – Jan. 31
South Fork Kern River	1,000-4,000 feet elevation in Tulare County	F	Open Jul. 1 – Sep. 30

Central Valley Steelhead and Salmon Critical Habitat and Reintroduction Areas Open To Suction Dredge Mining Under Draft Regulations			
RIVER	SPECIES	CLASS	SEASON
Antelope Creek in Tehama County	Steelhead & Spring Salmon Critical Habitat	F	Open Jul. 1 – Sep. 30
Battle Creek in Shasta County	Steelhead & Spring Salmon Critical Habitat, Winter Salmon Reintroduction Area	F	Open Jul. 1 – Sep. 30
Battle Creek in Tehama County	Steelhead & Spring Salmon Critical Habitat	D	Open Jul. 1 – Jan. 31
Bear River in Sutter County	Steelhead & Spring Salmon Critical Habitat	C	Open Jun. 1 – Sep. 30
Big Chico Creek in Butte County	Steelhead & Spring Salmon Critical Habitat	C	Open Jun. 1 – Sep. 30
Calaveras River in San Joaquin County	Steelhead Critical Habitat	C	Open Jun. 1 – Sep. 30
Cottonwood Creek in Shasta County	Steelhead & Spring Salmon Critical Habitat	F	Open Jul. 1 – Sep. 30
Cottonwood Creek in Tehama County	Steelhead & Spring Salmon Critical Habitat	C	Open Jun. 1 – Sep. 30
Feather River in Yuba County	Steelhead & Spring Salmon Critical Habitat	C	Open Jun. 1 – Sep. 30
Feather River in Sutter County	Steelhead & Spring Salmon Critical Habitat	A	Closed
Stony Creek in Glenn County	Steelhead Critical Habitat	F	Open Jul. 1 – Sep. 30
Thomes Creek in Tehama County	Steelhead & Spring Salmon Critical Habitat	F	Open Jul. 1 – Sep. 30
Sacramento River above Shasta Res. in Shasta County	Winter & Spring Salmon & Steelhead Reintroduction Area	D	Open Jul. 1 – Jan. 31
Sacramento River above Shasta Res. in Siskiyou County	Winter & Spring Salmon & Steelhead Reintroduction Area	F	Open Jul. 1 – Sep. 30
McCloud River in Shasta County from sec. 32, T38N, R3W to Shasta Res.	Winter & Spring Salmon & Steelhead Reintroduction Area	D	Open Jul. 1 – Jan. 31
North Fork Feather River upstream of East Branch confluence in Plumas County	Spring Salmon Reintroduction Area	H	Open All Year
North Yuba River below Ladies Canyon Creek in Sierra County	Steelhead & Spring Salmon Reintroduction Area	D	Open Jul. 1 – Jan. 31
North Yuba River above Ladies Canyon Creek in Sierra County	Steelhead & Spring Salmon Reintroduction Area	H	Open All Year
Middle Yuba River below Milton Dam in	Steelhead & Spring Salmon Reintroduction	E	Open Sep. 1 – Jan. 31

Sierra, Yuba, & Nevada Counties	Area		
South Yuba River in Nevada County	Steelhead & Spring Salmon Reintroduction Area	D	Open Jul. 1 – Jan. 31
North Fork American River upstream of Folsom Res. to Middle Fork confluence in El Dorado & Placer Counties	Steelhead & Spring Salmon Reintroduction Area	C	Open Jun. 1 – Sep. 30
North Fork American River from Clementine Res. to Big Valley Canyon in Placer County	Steelhead & Spring Salmon Reintroduction Area	G	Open Sep. 1-30
North Fork American River above Big Valley Canyon in Placer County	Steelhead & Spring Salmon Reintroduction Area	H	Open All Year
Middle Fork American River downstream of Oxbow Dam in Placer and El Dorado Counties	Steelhead & Spring Salmon Reintroduction Area	D	Open Jul. 1 – Jan. 31
South Fork American River from Folsom Res. to Slab Creek Dam in El Dorado County	Steelhead & Spring Salmon Reintroduction Area	C	Open Jun. 1 – Sep. 30
South Fork American River from Slab Creek Res. to Riverton in El Dorado County	Steelhead & Spring Salmon Reintroduction Area	E	Open Sep. 1 – Jan. 31
South Fork American River above Riverton in El Dorado County	Steelhead & Spring Salmon Reintroduction Area	C	Open Jun. 1 – Sep. 30
Mokelumne River from Pardee Res. to Hwy 49 in Amador and Calaveras Counties	Steelhead & Spring Salmon Reintroduction Area	D	Open Jul. 1 – Jan. 31
Mokelumne River from Hwy 49 to North/South Forks confluence in Amador and Calaveras Counties	Steelhead & Spring Salmon Reintroduction Area	H	Open All Year
North Fork Mokelumne from South Fork confluence to Tiger Creek Dam in Amador and Calaveras Counties	Steelhead & Spring Salmon Reintroduction Area	H	Open All Year
North Fork Mokelumne from Tiger Creek Res. to Salt Springs Dam in Amador and Calaveras Counties	Steelhead & Spring Salmon Reintroduction Area	E	Open Sep. 1 – Jan. 31
	Steelhead & Spring Salmon Reintroduction Area		
North Fork Stanislaus River upstream of New Melones Res. in Calaveras and Tuolumne Counties	Spring Salmon Reintroduction Area	D	Open Jul. 1 – Jan. 31
Middle Fork Stanislaus River upstream of New Melones Res. in Tuolumne County	Steelhead Reintroduction Area	D	Open Jul. 1 – Jan. 31
Tuolumne River upstream of New Don Pedro Res. to 2,000 feet elevation (near Early Intake) in Tuolumne County	Steelhead & Spring Salmon Reintroduction Area	F	Open Jul. 1 – Sep. 30
Merced River, South Fork Merced River below 2,000 feet in Mariposa County	Steelhead & Spring Salmon Reintroduction Area	F	Open Jul. 1 – Sep. 30
San Joaquin River below Friant Dam in Madera and Fresno Counties	Spring Salmon Reintroduction Area	H	Open All Year

California Red-Legged Frog Critical Habitat Open To Suction Dredge Mining Under Draft Regulations			
UNIT	DESCRIPTION	CLASS	SEASON
BUT-1	Oroville Res. North Fork arm east bank, Chino & Rush Creeks	C	Open Jun. 1 – Sep. 30
YUB-1	Drainages flowing east into Bullards Bar Res., Burnt Bridge & Little Oregon Cks.	C	Open Jun. 1 – Sep. 30
NEV-1	South bank South Yuba River, Rock Creek	E	Open Sep. 1 – Jan. 31
PLA-1	Michigan Bluff area, Poor Man’s Canyon, Skunk Creek	H	Open year round
ELD-1	Weber Creek near Pollock Pines	A	Closed
CAL-1	Tributaries to Paloma Creek	C	Open Jun. 1 – Sep. 30
ALA-2	Alameda Creek and tributaries above 300 ft elevation	F	Jul. 1 – Sep. 30
SNB-1	San Benito River west of Paicines	D	Open Jul. 1 – Jan 31
SNB-3	Chalone Creek and San Benito River in and near Pinnacles National Monument	D	Open Jul. 1 – Jan 31
SNB-2	Upper Panoche Creek	D	Open Jul. 1 – Jan 31
STB-1	La Brea Creek (Sisquoc River tributary)	D	Open Jul. 1 – Jan 31
STB-3S	Upper Sisquoc River, Manzana Creek	D	Open Jul. 1 – Jan 31
STB-7	Santa Ynez River between Cachuma Reservoir and Gibraltar Dam	H	Open year round

Central Valley Mercury-Impaired Waters Open To Suction Dredge Mining Under Draft Regulations			
WATER	DESCRIPTION	CLASS	SEASON
North Fork American River	North Fork Dam to Folsom Reservoir	C	Open Jun. 1 – Sep. 30
South Fork American River	Slab Creek Dam to Folsom Reservoir	C	Open Jun. 1 – Sep. 30
Lower Bear River	Below Camp Far West Reservoir	C	Open Jul. 1 – Sep. 30
Upper Bear River	Combie Lake to Camp Far West Reservoir	C	Open Jun. 1 – Sep. 30
Big Chico Creek	Butte and Tehama Counties	C	Open Jun. 1 – Sep. 30
Butte Creek	Butte County upstream of Centerville Head Dam Butte County from De Sabla Powerhouse to Bolt Creek	E	Open Sep. 1 – Jan. 31
		F	Open Jul. 1 – Sep. 30
Cache Creek	Cache Creek Dam to Yolo Bypass	F	Open Jul. 1 – Sep. 30
Lower Calaveras River	Stockton Diversion Channel to San Joaquin River	C	Open Jun. 1 – Sep. 30
Commanche Reservoir	Receives water from the Mokelumne River below Hwy 49 From Hwy 49 to Tiger Creek Dam From Tiger Creek Reservoir to Salt Springs Dam	D	Open Jul. 1 – Jan 31
		H	Open All Year
		E	Open Sep. 1 – Jan. 31
Camp Far West Reservoir	Receives water from the Bear River	C	Open Jun. 1 – Sep. 30
Combie Lake	Receives water from the Bear River	C	Open Jun. 1 – Sep. 30
Deer Creek (Nevada County)	Deer Creek Reservoir to Lake Wildwood	H	Open year round
Don Pedro Reservoir	Receives water from the Tuolumne River	F	Open Jul. 1 – Sep. 30
East Park Reservoir	Offstream water diversion from Stony Creek From North and Middle Forks in Glenn County From Middle Fork in Lake County From South Fork and Main Stem in Colusa County	F	Open Jul. 1 – Sep. 30
		D	Open Jul. 1 – Jan. 31
		D	Open Jul. 1 – Jan. 31
Englebright Reservoir	Receives water from the Yuba River North Yuba River in Yuba & Sierra Counties Middle Yuba River in Yuba, Nevada & Sierra Counties South Yuba River from Englebright Res. to Spaulding Dam	D	Open Jul. 1 – Jan. 31
		E	Open Sep. 1 – Jan. 31
		D	Open Jul. 1 – Jan. 31
Lower Feather River	Oroville Dam to Sacramento River confluence		

	In Yuba County	C	Open Jun. 1 – Sep. 30
North Fork Feather River	Below Lake Almanor in Plumas County	H	Open All Year
Folsom Reservoir	Receives water from the American River North Fork upstream of Folsom Res. to Middle Fork Middle Fork upstream of North Fork to Oxbow Dam	C D	Open Jun. 1 – Sep. 30 Open Jul. 1 – Jan. 31
Hell Hole Reservoir	Receives water from the Rubicon River	E	Open Sep. 1 – Jan. 31
Humbug Creek	Butte County	C	Open Jun. 1 – Sep. 30
Indian Valley Reservoir	Receives water from the North Fork Cache Creek	D	Open Jul. 1 – Jan. 31
Kaweah Reservoir	Receives water from the Kaweah River	F	Open Jul. 1 – Sep. 30
McClure Reservoir	Receives water from the Merced River Above 2,000 feet elevation Below 2,000 feet elevation	D F	Open Jul. 1 – Jan. 31 Open Jul. 1 – Sep. 30
Lower Merced River	McSwain Reservoir to San Joaquin River	F	Open Jul. 1 – Sep. 30
Millerton Reservoir	Receives water form the San Joaquin River	H	Open All Year
Lower Mokelumne River	Below Commanche Dam downstream of Burella Road	C	Open Jun. 1 – Sep. 30
Lake Natoma	Receives water from Folsom Res. and the American River	C	Open Jun. 1 – Sep. 30
New Bullards Bar Reservoir	Receives water from the North Yuba River Receives water from the Middle Yuba River in Yuba, Nevada & Sierra Counties	D E	Open Jul. 1 – Jan. 31 Open Sep. 1 – Jan. 31
New Melones Reservoir	Receives water from the Stanislaus River	F	Open Jul. 1 – Sep. 30
Oroville Reservoir	Receives water from the Feather River	D	Open Jul. 1 – Jan. 31
Oxbow Reservoir	Receives water from the Middle Fork American River Receives water from the Rubicon River	D E	Open Jul. 1 – Jan. 31 Open Sep. 1 – Jan. 31
Pardee Reservoir	Receives water from the Mokelumne River Below Hwy 49 Above Hwy 49	D H	Open Jul. 1 – Jan. 31 Open All Year
Pine Flat Reservoir	Receives water from the Kings River	F	Open Jul. 1 – Sep. 30
Putah Creek	Solano Lake to Putah Creek Sinks Putah Creek west of I-505 Putah Creek east of I-505	F C	Open Jul. 1 – Sep. 30 Open Jun. 1 – Sep. 30
Rollins Reservoir	Receives water from the Bear River	C	Open Jun. 1 – Sep. 30
San Joaquin River	Bear Creek to Delta	F	Open Jul. 1 – Sep. 30
Scotts Flat Reservoir	Receives water from Deer Creek in Nevada County	H	Open All Year
Shasta Reservoir	Receives water from the Sacramento and McCloud Rivers	D	Open Jul. 1 – Jan. 31
Slab Creek Reservoir	Receives water from the South Fork American River	E	Open Sep. 1 – Jan. 31
Solano Lake	Receives water from Putah Creek	F	Open Jul. 1 – Sep. 30
Lower Stanislaus River	Below New Melones Dam in Stanislaus and Calaveras Counties In Tuolumne County	C F	Open Jun. 1 – Sep. 30 Open Jul. 1 – Sep. 30
Stony Gorge Reservoir	Receives water from Stony Creek in Colusa County In Glenn County	D F	Open Jul. 1 – Jan. 31 Open Jul. 1 – Sep. 30
Tulloch Reservoir	Receives water from the Stanislaus River	F	Open Jul. 1 – Sep. 30
Lower Tuolumne River	Below Don Pedro Dam	C	Open Jun. 1 – Sep. 30
Lake Wildwood	Receives water from Deer Creek in Nevada County	H	Open All Year
Middle Yuba River	Upstream of North Yuba confluence	E	Open Sep. 1 – Jan. 31
North Yuba River	Upstream of Bullards Bar Reservoir	D	Open Jul. 1 – Jan. 31
South Yuba River	Spaulding Reservoir to Englebright Reservoir	D	Open Jul. 1 – Jan. 31

COMMENT # 5 THE DEPARTMENT MUST MITIGATE SIGNIFICANT ADVERSE IMPACTS TO WATER QUALITY AND THE dSEIR MUST INCLUDE A CLEAR STATEMENT FROM THE WATER BOARD DESCRIBING THE ACTIONS THEY WILL UNDERTAKE TO ADDRESS WATER QUALITY IMPACTS, INCLUDING AN ANTIDEGRADATION ANALYSIS.

A CEQA document must provide a sufficient description of the project, its environmental impacts and the mitigation measures that will be adopted to address identified harms. The public and decision-makers must have this information *before* the project is implemented in order to assess all direct and cumulative impacts. Analysis cannot be segmented or postponed to an unspecified future time.

In the present situation, the dSEIR does not explain how significant adverse impacts to water quality will be addressed. Typically, a CEQA document assesses impacts that the lead agency addresses. In the present situation, the State Water Board provided the Department \$500,000 to assess water quality impacts caused by suction dredge mining, such as the resuspension and methylization of mercury. However, the dSEIR does not state which agency will address identified significant adverse impacts or what actions will be taken (or not taken).

Instead, the Department denies responsibility to address these impacts. It contends that its authority to regulate suction dredge mining is limited to deleterious impacts on “fish” and, therefore, water quality is beyond its jurisdiction under the Fish and Game Code. The Department’s position is confusing, however, since fish cannot survive in water that is of poor quality. At the same time, there is no statement from the Water Board (either the State Board or any of the Regional Boards) regarding specific actions they will take to address the significant impacts to water quality identified in the dSEIR. The dSEIR only states that the Water Board may issue discharge permits in the future.

Meanwhile, no mitigation measures are implemented under the dSEIR or draft regulations, but the public is left with the vague suggestion that these issues may be addressed by the Water Board in the future. Furthermore, the Water Board is required to conduct an antidegradation analysis to ensure that: any degradation is balanced against the interests of the people of the State, that under no circumstances are the minimum standards to protect beneficial uses exceeded, and that best practicable treatment and control measures are implemented.

The protections provided from the antidegradation analysis are consistent with those provided under CEQA (which requires adoption of feasible mitigation measures) and Fish and Game Code §5653 (which requires a determination that no deleterious impacts will occur to fish prior to the issuance of permits). Regardless of the law the assessment of harm and mitigation is conducted under, it is clear that the analysis must occur *before* the activity commences.

Allowing the activity to occur, with the vague possibility that harms may be address in the future is simply not acceptable. While this is true of any program, it is particularly true here. The tribal governments and organizations who submit these comments began addressing the harms that suction dredging cause to fish – and particularly to endangered fish species – in 1997 (and in some instances much earlier). It has taken two lawsuits and a Legislative enactment to force the Department to stop issuing suction dredging permits, even after the Department fully acknowledged the harm being caused to endangered fish in a court of law. Considering how hard-fought any change has been to date, the public cannot accept an environmental assessment that is vague and dismissive on key issues.

Recommendation

The Department must acknowledge its authority to address adverse impacts from suction dredge mining that are identified in the dSEIR, including adverse impacts to water quality that impact fish. The Department cannot study the impacts of water quality from suction dredge mining and then pass the buck to another agency, which cannot be held accountable for findings and statements made during this administrative process.

In addition, the Water Board's intended use of the water quality assessment in the dSEIR must be clearly stated. The Water Board must come forth and state if it intends to issue a permit for suction dredge mining, particularly the type of permit (individual or blanket permits; NPDES permit under section 402 of the Clean Water Act; a Waste Discharge Permit under Porter-Cologne; or a Waste Discharge Permit and 401 State Water Quality Certification, subsequent to the issuance of a 404 dredge permit issued by the Army Corps). The Water Board should also confirm its intention to conduct an antidegradation analysis and an anticipated timeline for the public comment period and adoption of the permit.

Lastly, if the Water Board anticipates reliance on the Department for any aspect of its own permitting program, particularly enforcement, that information must be clearly stated in detail during the public comment period on the Department's draft dSEIR and draft regulations. This information *cannot* be made public after the fact.

COMMENT # 6: THE HYDROLOGY AND WATER QUALITY SECTION FAILS TO ADEQUATELY EVALUATE DELETERIOUS EFFECTS OF RESUSPENDED MERCURY ON FISH

Reasoning

There are two potential pathways in which fish could be exposed to mercury in the aquatic environment. One pathway is direct uptake, methylmercury passing through membranes, from the water column and the second is through feeding on organisms contaminated with mercury; such as macro invertebrates, amphibians, crayfish, mussels and algae. Cumulatively these pathways result in exposure of fish to an extremely

harmful metal, mercury is a known mutagen, teratogen and carcinogen with effects in fish ranging from acute to lethal.

The following excerpt from *Mercury Hazards To Fish, Wildlife, and Invertebrates: A Synoptic Review*⁹ describes the effects detected in mercury poisoned fish:

“Signs of acute mercury poisoning in fish included flaring of gill covers, increased frequency of respiratory movements, loss of equilibrium, and sluggishness (Armstrong 1979). Signs of chronic mercury poisoning included emaciation (due to appetite loss), brain lesions, cataracts, diminished response to change in light intensity, inability to capture food, abnormal motor coordination, and various erratic behaviors (Armstrong 1979; Hawryshyn et al. 1982). Mercury residues in severely poisoned fish that died soon thereafter ranged (in mg/kg fresh weight) from 26 to 68 in liver, 16 to 20 in brain, and 5 to 7 in whole body (Armstrong 1979). And at high sublethal concentrations of methylmercury, rainbow trout were listless and darkly pigmented; appetite was reduced, and digestion was poor (Rodgers and Beamish 1982).”

LC-50 laboratory studies exposing juvenile and embryo-larva rainbow and brook trout to various levels of organic mercury, identified concentrations causing death at the various life stages, see Table 1.

Table 1: LC-50 Studies on Rainbow and Brook Trout

	<i>Effect</i>	<i>Concentration ug Hg/L medium</i>	<i>Reference</i>
Rainbow trout			
Larva	LC-50 (96 h)	24.0	EPA 1980
Juvenile	LC-50 (96 h)	5.0–42.0	EPA 1980
Brook trout			
Yearling	LC-50 (96 h)	65.0	EPA 1980

Mercury at low concentrations adversely affects freshwater organisms’ cycles of reproduction, growth, behavior, metabolism, blood chemistry, osmoregulation and oxygen exchange. Aquatic biota accumulation of mercury is generally rapid while depuration is slow, leading to bioaccumulation. Organomercury (especially methylmercury) compounds are significantly more effective in producing adverse effects and accumulations than inorganic mercury.⁷ Generally, mercury accumulation is enhanced with increasing age of the organism and when water quality conditions are

⁹ Eisler, Ronald 1987. *Mercury Hazards To Fish, Wildlife, and Invertebrates: A Synoptic Review*. U. S. Fish and Wildlife Service Patuxent Wildlife Research.

such: elevated temperature, reduced salinity/hardness, reduced pH, and presence of zinc, cadmium or selenium.⁷

Water quality conditions in the Klamath River monitored during base flow by the Karuk Tribe Water Quality Program indicate annual elevated temperatures, low conductivity and pH dips characteristic of photorespiration from algal communities.¹⁰ Water quality data collected specifically from Indian Creek detected mercury in the system along with reduced hardness, low levels of pH and increased water temperature.¹¹ Data collected during base flow overlaps with dredging activities in the Klamath main stem and tributaries.

The SEIR 4.2-52 indicates a single dredger could increase mercury contamination by 10%: “For example, within areas of highly elevated sediment Hg concentrations, a single suction dredge operator using an average size (4 inch) dredge could discharge approximately 10% of the entire watershed Hg loading during a dry year during an average suction dredging time of 160 hours.” Given the ideal water quality conditions in the Klamath and its tributaries and the potential for a **single** dredge to discharge 10% of a watershed’s mercury load, uptake of mercury by aquatic organisms is likely.

A recent study on the Trinity River, tributary to the Klamath, demonstrated uptake of mercury in larval lamprey ammocoetes and western pearlshell.¹² These are both traditional food sources to the Karuk Tribe; and as with salmonids, the bio-magnification through the food chain presents a health risk to tribal people consuming these foods.

Recommendation

In summary, the water quality conditions documented in the Klamath River and historic use of mercury for gold mining extraction poses a significant impact to fish as well as people. Mining directly for mercury also occurred in the Klamath River basin on the west fork of Beaver Creek, Oak Bar and Empire Creek. Maps of historic gold mines are available and should be used to identify “hot spots”. Dredging activities in known and unknown “hot spots” have the potential to re-suspend mercury which is then absorbed by many aquatic species as proven in both the 2010 USGS study *The Effects of Sediment and Mercury Mobilization in the South Yuba River and Humbug Creek Confluence Area, Nevada County, California: Concentrations, Speciation, and Environmental Fate* as well as the 2010 Trinity River report, *A comparison of mercury contamination in mussel and ammocoete filter feeders*. Mercury is not limited to the Yuba River. The Klamath River is another hot-spot as the data from the Trinity River study confirms. The current water quality alternative presented in the DEIS does not remedy suction dredgers mobilizing

¹⁰ Karuk Department of Natural Resources, 2009. Water Quality Report for the Mid-Klamath, Scott and Shasta Rivers: May-Dec 2009.

¹¹ Karuk Department of Natural Resources, 2001. Karuk Aboriginal Territories Indian Creek and Elk Creek Water Quality Monitoring Report.

¹² Bettaso JB, Goodman DH. 2010. A comparison of mercury contamination in mussel and ammocoete filter feeders. *Journal of Fish and Wildlife Management* 1(2):142–145; e1944-687X. doi:10.3996/112009-JFWM-019

mercury from unknown hotspots. In order to mitigate for the potential deleterious impacts that can occur to aquatic organisms in known and unknown mercury “hot spots”, it is our recommendation that DFG restrict dredging in watersheds with a well-documented history of gold mining.

COMMENT # 7: DSEIR FAILS TO EVALUATE HUMAN HEALTH IMPACTS AND FISH HEALTH IMPACTS RESULTING FROM THE MECHANICAL LYSING OF MICROCYSTIS AERUGINOSA AND RELEASE OF MICROCYSTIN

Reasoning

Dredging occurs at a time when the levels of *microcystis aeruginosa*, and its associated liver toxin microcystin, are elevated to levels requiring public health postings. The cells of the algae are suspended in the water column as it flows downstream to the estuary from its source, the Copco and Iron Gate Reservoirs. When the cells of *microcystis* are lysed or broken, the toxin microcystin is then released into the water column. Dredging operations involve the sucking of the river water through a hose which then pressure pushes the water over a series of angular metal trays to extract the gold. Activities such as these have the potential to lyse the algal cells thereby releasing the toxin.¹³ Unlike other water quality impacts associated with dredging activities, release of the toxin is a cumulative addition to the current elevated toxin concentration and does not diminish as it travels further away from the dredge; the toxin thus travels to the ocean.

Elevated toxin levels annually present a threat to public health as well as presenting a stress to salmonids. During the fall of 2010, the Karuk Tribe water quality department collected adult salmonid tissue for analysis of microcystin. The toxin was detected in the livers of one steelhead and four adult Chinook during the sample period.¹⁴ Figure 1 depicts *microcystis* and microcystin sampling results from 2010, as well as highlights the time at which fish were collected with detectable levels of microcystin; sampling locations span the Klamath River below Iron Gate (site code: KRBI) to Orleans (site code: OR).

¹³ Kann, Jacob, Personal communication, April 2011.

¹⁴ Kann, Jacob., L.Bowater, G.Johnson and C.Bowman. Technical Memorandum: Preliminary 2010 Microcystin Bioaccumulation Results for Klamath River Salmonids (Updated 4-7-2011).

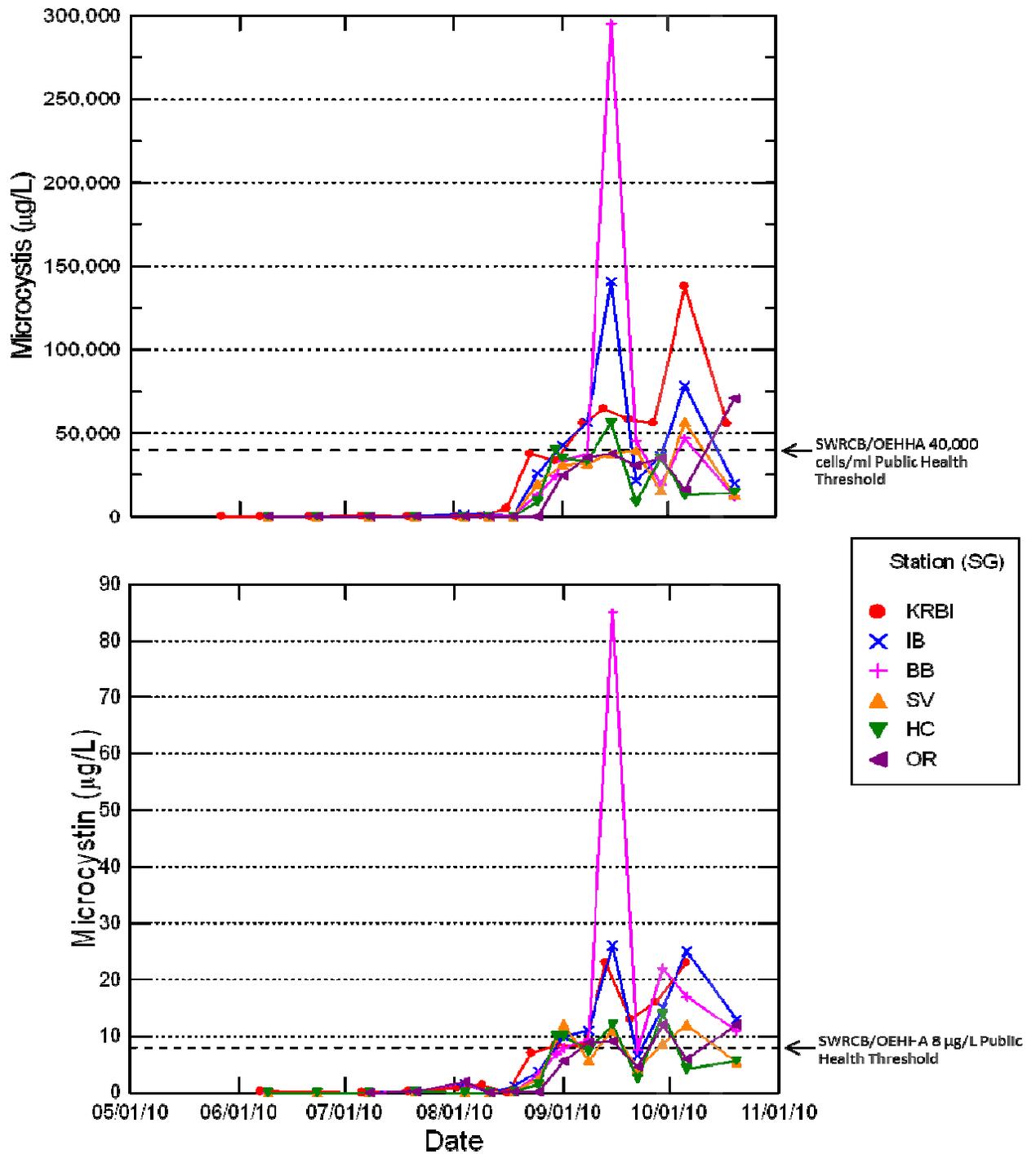


Figure 1: Public Health Sampling 2010 Microcystis and Microcystin Results; shoreline grabs. Shaded vertical lines depict time periods when fish with positive microcystin were collected.

In 2009, the Karuk Tribal Water Quality Department conducted a study to examine the levels of microcystin in fresh water mussel tissue, a traditional food of the Karuk people. Results indicated that ingestion of fresh water mussels in the Klamath River system would result in microcystin doses exceeding various public health thresholds for safe

consumption throughout the summer and fall.¹⁵ Children are most at risk in the months of July, September, and October, when the Acute Tolerable Intake (TI) dose was exceeded by up to ~4 times. This coincides with the time of year that traditional and subsistence use of fresh water mussels occurs; even one meal could exceed safe consumption levels.

Recommendation

In order to avoid the lysing of *microcystis* which thereby increases the concentration of microcystin in the river posing a health threat to people through direct exposure to river water as well as through consumption of mussels, and posing an additional stressor to salmonids; dredging should not occur when microcystis is present in the water column. In 2010, this generally occurred between the months of August and mid-October (Figure 1). In drier years, the bloom may begin as early as July and extend into October^{16,17,18}

COMMENT # 8: THE SEIR SHOULD INCLUDE A SECTION ON ENVIRONMENTAL JUSTICE

The Karuk Tribe has described the cultural beneficial uses of the Klamath River. These uses are described and documented in some detail in Chapter 2 of the North-coast Regional Water Quality Control Board's *Staff Report for the Klamath River Total Maximum Daily Loads (TMDLs) and Action Plan Addressing Temperature, Dissolved Oxygen, Nutrient, and Microcystin Impairments in California*.¹⁹ The affect the Program would have on these uses were not evaluated.

Reasoning

Several California laws require that state agencies, and California EPA in particular, consider how rules and regulations affect minority communities. These laws include SB 828, AB 1360, SB 89, and more.

Environmental justice (EJ) is defined in California law as "*the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws and policies.*"²⁰

The Karuk Tribe has described the cultural beneficial uses of the Klamath River. These uses are described and documented in some detail in Chapter 2 of the North-coast

¹⁵ Kann, J., S. Corum. 2009. Toxigenic *Microcystis aeruginosa* bloom dynamics and cell density/chlorophyll a relationships with microcystin toxin in the Klamath River, 2005-2008. Technical Memorandum Prepared for the Karuk Tribe of California, May, 2009.

¹⁶ Jacoby, J.M. and J. Kann. 2007. The Occurrence and Response to Toxic Cyanobacteria in the Pacific Northwest, North America. *Lake and Reserv. Manage.* 23:123-143.

¹⁷ Kann, J., S. Corum. 2010. Middle Klamath River Toxic Cyanobacteria Trends, 2009. Technical Memorandum Prepared for the Karuk Tribe of California, June, 2010.

¹⁸ Kann, J., S. Corum, K.Fetcho 2009. Technical Memorandum: Microcystin Bioaccumulation in Klamath River Freshwater Mussel Tissue: 2009 Results.

¹⁹ http://www.swrcb.ca.gov/northcoast/water_issues/programs/tmdls/klamath_river/090619/Ch_2_PS_090619.pdf

²⁰ Government Code section 65040.12

Regional Water Quality Control Board's *Staff Report for the Klamath River Total Maximum Daily Loads (TMDLs) and Action Plan Addressing Temperature, Dissolved Oxygen, Nutrient, and Microcystin Impairments in California.*²¹

In addition, on December 16, 2010, the United States officially endorsed the United Nations Declaration on the Rights of Indigenous People (DRIP).

Article 19 of the DRIP states:

States shall consult and cooperate in good faith with the indigenous peoples concerned through their own representative institutions in order to obtain their free, prior and informed consent before adopting and implementing legislative or administrative measures that may affect them.

It is our view that suction dredge mining under terms of the proposed regulations poses significant threats to water resources, subsistence resources, and leads to negative social and cultural impacts to indigenous groups.

Article 25 of the DRIP states:

Indigenous peoples have the right to the lands, territories, and resources which they have traditionally owned, occupied, or otherwise used or acquired...States shall give legal recognition and protection to these lands, territories, and resources...

Articles within the DRIP are subject to review based on the Human Rights Charter which is supported, endorsed, and enforced by the United States.

Recommendation

We urge the Department to thoroughly describe the impacts suction dredging has on the cultural beneficial uses of the Klamath River as identified by the Karuk Tribe as well as the cultural beneficial uses identified by other Indian Tribes and affected communities in other watersheds. Note that these affected beneficial uses pertain not only to anadromous fish, but to mussels, various riparian plants, mollusks, and more. In general, the SEIR should fully evaluate whether the proposed actions are consistent with California's stated commitment to the principles of environmental justice.

In addition, the Department should evaluate the consistency of proposed regulation with the United Nations Declaration on the Rights of Indigenous People.

COMMENT # 9: DRAFT SEIR FAILS TO EVALUATE IMPACTS TO PLANTS WITH CULTURAL AND MEDICINAL USES.

²¹ http://www.swrcb.ca.gov/northcoast/water_issues/programs/tmdls/klamath_river/090619/Ch_2_PS_090619.pdf

Reasoning

It is of note that the word ‘plant’ does not appear in the cultural resources section. The Karuk, as well as many California Tribes, traditionally and contemporarily harvest and utilize a variety of riparian and upland plants for use in traditional basket making as well as for medicinal and other cultural uses. CEQA requires that impacts to these cultural resources be evaluated.

Recommendation

Direct impacts to these specific plant species as well as access to these species by Native American cultural practitioners of should be evaluated in the EIR.

COMMENT #10: EVALUATION OF AESTHETIC IMPACTS LACK QUANTATIVE DATA

Reasoning

The department judges impacts to aesthetic values to be less than significant given the limited time frame that dredging could take place, limited number of dredges statewide (4,000), and assertion that most dredges are hidden from view sheds.

Commenters assert that dredges tend to be concentrated in areas that serve a larger community of hikers, swimmers, recreational and commercial rafters and kayakers.

The Department states in the dSEIR, “the relatively short percentage of the year that dredging activities would be occurring, adverse visual effects are not considered substantial in the statewide context of the Proposed Program.”

However, it should be noted that the relatively short time of year that dredging would be occurring is also the relatively short time of year that most people hike, bike, raft, and swim - i.e. summer.

Recommendation

Use quantitative metrics such as user surveys to actually study the aesthetics issue. Compare popular mining areas to popular hiking, swimming, fishing, rafting, and boating areas and compare the time of year each activity uses the given area.

COMMENT # 11: THE INITIAL PLAN FAILS TO ADEQUATELY ASSESS THE IMPACT ON RECREATIONAL AND COMMERCIAL BOATING

Reasoning

The placement of dredges, as well as transport of equipment across streams, often requires miners to set static cables and/or ropes across rivers. These cables and ropes can constitute a significant hazard to rafters, canoeists, and kayakers.

Recommendation

Use quantitative metrics such as user surveys to actually study the impact on recreational boating. Compare and cross reference locations of popular mining areas to popular commercial and non-commercial rafting and kayaking runs to identify user conflicts. Develop regulations that preclude stream-wide cables to secure dredges in place which could pose a hazardous entrapment for recreational boaters.

COMMENT 12 –THE DEPARTMENT USED THE US FISH AND WILDLIFE SERVICES’S *PACIFIC LAMPREY CONSERVATION INITIATIVE BEST MANAGEMENT PRACTICES* AS A GUIDE FOR ESTABLISHING FISHING LIMITS ON LAMPREY. THE DEPARTMENT SHOULD REFER TO THIS SAME DOCUMENT FOR PURPOSES OF SETTING LIMITATION ON DREDGE MINING.

Reasoning

The 2010 California Department of Fish and Game Hunting and Sport Fishing Regulations established a 5 fish bag limit in lamprey for the first time in California history. In deciding on this rule change, the Fish and Game Commission considered the US Fish and Wildlife Service’s Best Management Practices (BMP’s) for Lamprey:

“The Department proposes to establish a bag limit of 5 for Pacific Lamprey within state waters. Pacific Lamprey stocks are depressed throughout much of its west coast range. The Pacific Lamprey Conservation Initiative is an effort presently led by the U.S. Fish and Wildlife Service (FWS) to facilitate communication and coordination relative to the conservation of Pacific lampreys throughout their range. The goal of the initiative is to develop a Pacific Lamprey Conservation Plan that will lead to restored Pacific lamprey populations and improvement of their habitat. This initiative is addressing the consideration of Pacific Lamprey when implementing in stream activities, mercury contamination and bioaccumulation, spawning characteristics, biological and ecological needs, and threats. Department staff are part of this conservation initiative. The department proposed to establish California bag limits similar to others west coast states as a reasonable management measure.”²²

²² State of California Fish and Game Commission Amended Initial Statement for Reasons for Regulatory Action, August 29 2010, http://www.fgc.ca.gov/regulations/new/2009/5_00isor2.pdf

Although the BMP's do not offer any specific recommendations on fishing regulations, the document does describe dredging impacts to lamprey:

“Ammocoetes spend most of their time burrowed in stream substrates, moving during flow events and mostly at night. Many age classes can concentrate together in the same areas because of habitat preference, making ammocoete populations particularly susceptible to activities that involve dredging/excavating, stranding and use of toxic chemicals...Dredging from construction, channel maintenance and mining activities can impact all age classes of ammocoetes. Removal of substrate with a backhoe or trackhoe could remove several hundred lamprey per bucket load.”²³

The document also recommends restricting dredging in lamprey habitat:

*“Instream channel reconstruction, re-routing, **dredging**, and other activities that disturb or remove substrate materials may result in ammocoetes being trapped or killed.*

- *Ammocoetes burrowed in the substrate can and will move if disturbed but are very susceptible to being trapped given their reluctance to move and propensity to avoid light;*
- ***Timing restrictions do not address this risk of direct mortality.***

Recommendations:

- ***Avoid these activities where ammocoetes are known to exist. Where this is not possible, salvage efforts using methods outlined in Attachment A should be attempted prior to activity (bold emphasis added)***
- *Sift through the removed substrate and salvage any ammocoetes within and return them to the stream away from the construction activity. (emphasis added)²⁴*

Recommendation

The Department should comply with the recommendations of the US Fish and Wildlife Services' *Pacific Lamprey Conservation Initiative Best Management Practices* when drafting suction dredge mining regulations.

COMMENT # 13 CONTRARY TO WHAT IS STATED IN THE SEIR (4.3 25,29,31; IMPACT BIO-FISH-2; IMPACT BIO-FISH-4), SUCTION DREDGING

²³ Best Management Practices to Minimize Adverse Effects to Pacific Lamprey, p. 11, http://www.fws.gov/pacific/Fisheries/sp_habcon/Lamprey/pdf/Best%20Management%20Practices%20for%20Pacific%20Lamprey%20April%202010%20Version.pdf

²⁴ Ibid. p. 19

WOULD HAVE SIGNIFICANT IMPACTS ON JUVENILE LAMPREY (AMMOCOETES) AND MUSSELS BECAUSE THEY WOULD LIKELY SUFFER HIGH RATES OF MORTALITY WHEN EXCAVATED FROM THE SUBSTRATE.

Reasoning

The SEIR (4.3-24 lines 9-12) acknowledges the vulnerability of lamprey ammocoetes because “unlike salmonids, lamprey larvae may also emerge from the redd and find backwater or low gradient areas of sand and silt to continue development for up to seven years, filtering substrates to feed on detritus (Moyle, 2002). Therefore, for lamprey, many areas of the channel may be considered sensitive to disturbance.” (emphasis added) Despite the acknowledgement that lamprey are unlike salmon because they would remain sensitive to channel disturbance from dredging, the DEPARTMENT erred by categorizing them as “other fish species” (Table 4.3-2 p.12) and provided no life history data in Appendix K. Figure 1 (below) provides illustrations of basic life history for this very important fish. Classifying lamprey as “other fish species” was also inappropriate because “surrogate protection” designed for free swimming juvenile salmon species would not protect juvenile lamprey that reside immediately below the stream substrate (Fig.1). Rather than seeking effective ways to protect lamprey ammocoetes from suction dredging, the SEIR falsely states that “[r]esidual impacts including disturbance of ammocoetes, not likely to result in deleterious effect to species.” The SEIR provides no data or analysis to support this statement. This conclusion is arbitrary and not supported by what is known about lamprey species.

Lamprey may be at extremely low numbers in some stream systems. Moyle states that “lampreys are still present in most of their native areas, but large runs that once characterized streams such as the Eel River seem to have largely disappeared. Certainly the once-common ‘great wriggling masses’ are rarely seen. Unfortunately, little attention has been paid to lamprey, and there is only anecdotal evidence (mainly from Native American fishermen) that runs in North Coast streams are much smaller than they used to be.”²⁵

Lampreys have only a 3%-26% survival rate when passed through a dredge.²⁶ Ammocoetes that survived entrainment would likely suffer high rates of predation (Harvey and Lisle 1998:9). The U.S. Fish and Wildlife Service^{27,28,29} report that many

²⁵ Moyle, P. B. 2002. Inland Fishes of California. Revised and expanded. University of California Press. Berkley, CA.: 502 pp.

²⁶ Beamish, R.J. and J.H. Youson. 1987. Life history and abundance of young adult *Lamprocyba ayresi* in the Fraser River and their possible impact on salmon and herring stocks in the Strait of Georgia. Can. J. Fish and Aquatic Sci. 44: 525-537

²⁷ USFWS (US Fish and Wildlife Service). 2008a. Fact Sheet Pacific Lamprey. <http://www.fws.gov/oregonFWO/Species/Data/PacificLamprey/Documents/012808PL-FactSheet.pdf>

age classes of Pacific lamprey ammocoetes can be impacted by mining or dredging activities. As an example, suction-dredge mining is thought to be one of the reasons for the loss of lamprey in the upper John Day River basin in Oregon.

Similar to lamprey species, mussel species are vulnerable to dredging because they would likely die from being buried in tailings (SEIR 4.3-26). Once again the Department erred by placing mussel species in the “other fish species” even though there is no surrogate protection from other “action species” and they have a high potential for deleterious effect. The SEIR (4.3-28 lines 27-43 and 4.3-29 lines 1-2) asserts that five regulations would minimize burial or displacement of mussels and further state that “the amount of burial of mollusks that is likely to occur is also considered less than significant based on the restriction on dredging in mussel beds, and the historical and projected level of suction dredging activity.”

The less than significant determination is based in part on the false statement that “Section 228(k)(13): prohibits dredging in mussel beds” (SEIR 4.3-28 line 33). Section 228(k)(13) actually only limits protection to mussel beds that have a density of 40 or more mussels per square yard (SEIR 2-21 lines 28-32). This regulation is likely to be ignored by dredgers because it would be nearly impossible to comply with and even more problematic to enforce. The less than significant determination is also based in part on the false statement that Section 228(k)(16): requires dredgers to avoid the disturbance of eggs, redds, tadpoles and mollusks. Mollusks are not mentioned in 228(k)(16) as written in SEIR 2-22. It appears that various wordings of regulations were arbitrarily developed so as to provide some plausible rationale for a “less than significant” determination for mussels.

The less than significant determination is based in part on “historical and projected level of suction dredging activity.” No analysis accompanies this statement. Based on the information provided in the SEIR about mussels a “significant impact” determination would also be justified if “historic and projected level of suction dredging would continue.”

Lamprey ammocoetes, mussels and other filter feeders function at a community level. Impacts to the functioning of this community cannot be dismissed with “less than significant impacts” to individual species or species groups. Reductions of the filter feeding community would have undesirable trophic consequences. Productivity of streams would be reduced as excessive organic detritus (nitrogen and phosphorus) would pollute rather than be captured in organisms’ bodies. The SEIR (Figure 4.3-2) failed to

²⁸ USFWS (USFWS) 2008b. Draft Outline of the Pacific Lamprey Conservation Plan. http://www.fws.gov/pacific/fisheries/sp_habcon/lamprey/pdf/Pacific%20Lamprey%20Conservation%20Initiative%20ver%20060809.pdf (Accessed 4/15/2010)

²⁹ USFWS (US Fish and Wildlife Service). 2009. Proceedings of the Pacific Lamprey Conservation Initiative Work Session. Available at http://www.fws.gov/columbiariver/publications/Lamprey_Conservation_Proceedings_Final_09.pdf

take a hard look at dredging impacts to filter feeding communities except for how mercury bioaccumulates.

Recommendation

Undertake a more thorough evaluation of the impacts to lamprey ammocoetes, mussels, and other filter feeders.

COMMENT # 14: PROPOSED REGULATIONS VIOLATE KLAMATH BASIN PLAN AND EXISTING STATE LAW

Reasoning

In many salmonid bearing streams, migrating fish, both out-migrating juveniles and returning adults, rely heavily on thermal refugia to survive. Thermal refugia are river zones characterized by water temperatures measurably lower than the main channel or surrounding area. The lower temperature of the refugial area results from inflow from a colder tributary or an underwater spring.

Although the Department did propose significant dredging restrictions in Klamath River cold water refugia, it failed to propose restrictions wholly consistent with the restrictions mandated by the Klamath TMDLs. The Porter-Cologne Act requires State Agencies to comply with State Water Quality standards:

§ 13146. State agency compliance

State offices, departments and boards, in carrying out activities which affect water quality, shall comply with state policy for water quality control unless otherwise directed or authorized by statute, in which case they shall indicate to the state board in writing their authority for not complying with such policy.

Specifically, the refugial areas identified in the TMDL not identified in the Department's proposed regulations are:

- Canyon Creek (Siskiyou county)
- Cottonwood (Siskiyou county)
- Little Horse Creek (Siskiyou county)
- West Grider Creek (Siskiyou county)

The following creeks have a 1500 foot thermal protection zone in TMDLs but only 500 foot protection zone in proposed Regulations:

- Aubry Creek (Siskiyou County)
- Clear Creek (Siskiyou County)
- Dillon Creek (Siskiyou County)
- Elk Creek (Siskiyou County)
- Grider Creek (Siskiyou County)

- Horse Creek (Siskiyou County)
- Indian Creek (Siskiyou County)
- Rock Creek (Siskiyou County)
- Swillup Creek (Siskiyou County)
- Ukonom Creek (Siskiyou County)

Additional Creeks have additional in stream restrictions on dredging described in the TMDLs that are not reflected in proposed DFG regulations. A full comparison between proposed DFG regulations and restrictions on dredging included in the TMDLs can be seen in the following table:

Klamath River Tributaries	Refugia proposed by DFG	Protection Refugia Protection Provided by TMDL
Aubrey Creek	500 ft radius	1500 ft radius + 3000 feet up the Creek
Beaver Creek	500 ft radius	1500 + 3000 feet up the Creek
Canyon Creek	0	500 ft radius
Cottonwood Creek	0	500 ft radius
Clear Creek	500 ft radius	1500 ft radius + 3000 feet up the Creek
Dillon Creek	500 ft radius	1500 ft radius + 3000 feet up the Creek
Elk Creek	500 ft radius	1500 ft radius + 3000 feet up the Creek
Empire Creek	500 ft radius	500 ft radius + 3000 feet up the creek
Fort Goff Creek	500 ft radius	500 ft radius + 3000 feet up the creek
Grider Creek	500 ft radius	1500 ft radius + 3000 feet up the Creek
Horse Creek	500 ft radius	1500 ft radius + 3000 feet up the Creek
Indian Creek	500 ft radius	1500 ft radius + 3000 feet up the Creek
Jenny Creek	0	500 ft radius
King Creek	500 ft radius	500 ft radius + 3000 feet up the creek
Little Horse Creek	0	500 ft radius + 3000 feet up the creek
Little Humbug Creek	500 ft radius	500 ft radius + 3000 feet up the creek
Mill Creek	500 ft radius	500 ft radius + 3000 feet up the creek
Nantucket Creek	500 ft radius	500 ft radius + 3000 feet up the creek
O'Neil Creek	500 ft radius	500 ft radius + 3000 feet up the creek
Portuguese Creek	500 ft radius	500 ft radius + 3000 feet up the creek
Reynolds Creek	500 ft radius	500 ft radius + 3000 feet up the creek
Rock Creek	500 ft radius	500 ft radius + 3000 feet up the creek
Sandy Bar Creek	500 ft radius	500 ft radius + 3000 feet up the creek
Seiad Creek	500 ft radius	500 ft radius + 3000 feet up the creek
Stanshaw Creek	500 ft radius	500 ft radius + 3000 feet up the creek
Swillup Creek	500 ft radius	1500 ft radius + 3000 feet up the Creek
Ti Creek	500 ft radius	500 ft radius + 3000 feet up the creek
Titus Creek	500 ft radius	500 ft radius + 3000 feet up the creek
Ukonom Creek	500 ft radius	1500 ft radius
West Grider Creek	0	500 ft radius
Scott River Tributaries		
Boulder Creek	none	500 ft radius
Canyon Creek	none	500 ft radius
Kelsey Creek	none	500 ft radius

Recommendation

Dredge mining regulations should not be inconsistent with California water quality laws such as the Klamath Basin Plan, or any other state or federal river management plans.

COMMENT # 15: PROPOSED REGULATIONS FAIL TO PROTECT HABITATS AGREED TO IN THE DFG/KARUK PROPOSED SETTLEMENT AGREEMENT

In 2005 the Karuk Tribe filed litigation against the Department alleging that suction dredge mining regulations were insufficient to protect fish. Shortly thereafter, the Department and the Tribe negotiated mining restrictions in the Klamath Basin that the Department agreed achieved the statutory standard of “not deleterious to fish.”

This agreement was based on the consideration of data exchanged between the Tribe and the Department. The data established that the impact of suction dredge mining in these waters would cause deleterious impacts to endangered and special status fish species, including the Coho salmon. That reasoning and data were described in the concurrently filed declaration of Dr. Peter Moyle, fisheries biologist and professor in the Department of Wildlife, Fish, and Conservation Biology at the University of California at Davis, and Associate Director of its Center for Watershed Science. Some of Dr. Moyle’s studies were reviewed by the Department in drafting the dSEIR and draft regulations (included in the Literature Review).

Dr. Moyle testified as follows:

“The general effects of suction dredging on fish are well described in Harvey (1986) and Harvey and Lisle (1998) and so will be described only briefly here. The effects vary according to a variety of factors including size of stream, fish species present, season of dredging, and frequency and intensity of dredging. The key is that suction dredging represents a chronic unnatural disturbance of natural habitats that are already likely to be stressed by other factors and can therefore have a negative impact on fishes that use the reach being dredged. Direct effects include entrainment of invertebrates and small fish in the dredges, altering of the habitat that supports the food supply of fishes, and changing channel structure in ways that make it less favorable for fish (usually by making it less stable and complex). An area of particular concern in the Klamath, Salmon and Scott Rivers and their tributaries is the creation of piles of dredge tailings that are attractive for the spawning of salmonids but that are so unstable they are likely to scour under high flows, greatly reducing survival of the embryos placed within the gravel.

“A more immediate effect is the impact of chronic disturbance of the fishes, which can change their behavior and cause them to move to less favorable conditions. I am particularly concerned in this regard with dredging in or near thermal refugia of juvenile salmonids. As discussed in the NRC (2003) report and references therein, the Klamath River and some of its tributaries can reach temperatures in excess of 65-70°F during the

day in late summer. Such temperatures are very stressful or even lethal for many salmonids, so the fish seek out cooler areas, where small tributaries flow into the river or there is upwelling of ground water. Juvenile Coho salmon, Chinook salmon, and steelhead will often be packed into these areas during the day. This past August, I spent a day with Dr. Michael Deas, who was documenting the nature of a thermal refuge created by the inflow of single creek into the Klamath River. When I swam through the refuge area with a mask and snorkel I was impressed with the concentrations of fish in the area (and the lack of them in the main river) and how much even a minor disturbance of the habitat would reduce the ability of the area to support fish.

“Adult salmon and steelhead can also be disturbed by the intense dredging activities. I am particularly concerned with spring-run Chinook salmon, a species with which I have worked closely in the Sacramento River drainage. Adult spring-run Chinook spend the summer in pools in rivers, especially the Salmon River (and its forks) and Wooley Creek. They have to survive the summer without feeding, using reserves of fats and oils they bring up from the ocean. Chronic disturbance of the type created by dredging and dredgers can increase stress on these fish and has the potential to reduce their over-summer survival. An often overlooked impact of dredging is that the people involved often live on or close to the stream in remote areas for weeks at a time, where they not only dredge, but swim, bathe, and fish (sometimes illegally). Such activity can cause spring-run Chinook to use up precious energy reserves if they have to move to less favorable areas or swim about avoiding people.

“It is important to note that the Klamath River and its tributaries support the highest diversity of anadromous fishes of any river in California including: Coho salmon, chum salmon, multiple runs of Chinook salmon, coastal cutthroat trout, multiple runs of steelhead, eulachon, green sturgeon, white sturgeon, Pacific lamprey, and river lamprey. This is the reason, of course, why the river also supported a rich and diverse fishery by the native peoples who live along the river. Today virtually all the species are in decline or threatened with declines from multiple factors (see NRC 2003). Therefore, in my professional opinion, suction dredging should only be allowed in areas where it can be demonstrated there will no immediate or cumulative impact on the anadromous fishes. It should be assumed there is harm, unless it can be proven otherwise. One reason for my taking this conservative position is that we simply do not know the effects of dredging on many species, especially when the intensity of dredging is increasing. For example, the larvae (ammocoetes) of Pacific and river lamprey live in soft materials along the stream edge or in slow-moving sections of stream. Dredging of areas where ammocoetes are abundant will push them into the water column where they can be readily consumed by predators, contributing further to the likely declines of the species. Even for salmonids, information on the effects of dredging, with the exception of a few studies such as that of Harvey (1989), is largely anecdotal or in non-peer reviewed reports (see, for example, the bibliography of DFG 1994). Studies are also largely confined to looking at immediate effects of single dredges and they do not examine the cumulative or long-term effects of multiple dredges and activities associated with the dredges. Indeed little has changed since DFG (1994, p. 71) listed the need for additional studies on practically every

important aspect of the environmental impacts of dredging. Harvey and Lisle (1998) present a strategy for acquiring much of the needed information.

“The NRC (2003) report emphasized two important considerations for the recovery of Klamath basin fishes that are especially relevant here: (1) cold water refuges are key to the persistence of many species, especially Coho salmon and (2) the entire array of anadromous fishes (i.e., the Tribal Trust Species) need large scale and pro-active measures to assure recovery. Suction dredging is one more insult to these fishes that is likely to hurt their chances for recovery. In particular, Coho salmon, spring-run Chinook salmon, and summer (spring) steelhead are particularly vulnerable to the immediate effects of dredging and have been reduced to low numbers in the Klamath Basin so need special protection.”

However, the newly proposed regulations allow suction dredge mining, contrary to the data and reasoning agreed upon in 2005 and as described above by Dr. Moyle. For most of the river segments, the proposed regulations extend the season deeper into the fall. For the Salmon and Scott, all tributaries where mining would have been banned in the proposed settlement are open to dredging in the proposed regulations.

The Department agreed that a ban on dredging in the following tributaries were necessary to avoid a deleterious impact on fish in the proposed Karuk Settlement:

Salmon River tributaries

Butler
East Fork of Knownothing
Indian
Kelly Gulch
Knownothing
Little N. Fork
Methodist
Negro
Nordheimer
North Fork
South Fork
Specimen
Wooley

Scott River Tributaries

E. F. Big Mill
SF Boulder
Canyon
Etna
French
Kangaroo
Kelsy
Kidder
McAdam
Mill (Scott Bar)
Mill (aka Shackelford/Mill)

Moffett
Patterson
Shackelford
SF Scott
Suger
Tompkins
Wildcat
Wooliver

In addition, the dredging season in the main-stem Salmon was banned from the mouth to Forks of Salmon and the season was 15 days shorter in the main-stem Klamath.

Recommendation

The Department should explain in detail why it no longer judges dredging in these tributaries to be deleterious to fish as it once did. In addition, the Department should explain in detail why the Department decided to change its policy position established in the proposed Karuk settlement such that dredging from September 15 to September 30 in the main-stem Klamath no longer causes deleterious impacts to fish.

COMMENT # 16: PROTECTING COHO FROM DELETERIOUS EFFECTS OF DREDGES MEANS PROTECTING BEAVER FROM DELETERIOUS EFFECTS OF DREDGES

Recent data suggest that a critical step in restoring Coho salmon is the restoration of beaver and beaver habitat (<http://www.surep.org/beavers/conference.html>). Indeed, recent surveys of beaver ponds in the Klamath Basin reveal improved juvenile rearing populations of Coho in areas flooded by beaver ponds (Toz Soto, Will Harling, personal communication).

Recommendation

Ban dredges where established or suitable beaver habitat coincides with that of Coho salmon.

COMMENT # 17: EVALUATE RISK TO PUBLIC CREATED BY HIDDEN UNDERWATER PITS EXCAVATED BY DREDGERS

Reasoning

Dredging often leaves behind deep under water pits excavated by the dredge. Although the draft regulations require dredgers to fill in pits, this rule will not likely address this concern. The material excavated from the pit often washes downstream and is therefore not available to put back in the pit. Furthermore, commenters assert that it is highly unlikely that unsupervised miners would make the effort to fill in the pits and the Department lacks the manpower and resources to properly enforce this provision.

Video footage of the pits, some as much as six feet deep, can be viewed online at: <http://www.youtube.com/watch?v=PJYyT2U3iAg>

These holes create deathtraps for unsuspecting swimmers and children playing in what were previously shallow pools.

Recommendation

Ban dredging in any areas used by swimmers.

COMMENT # 18: THE FEBRUARY 11, 2011 DECISION BY THE NATIONAL MARINE FISHERIES SERVICE TO CONDUCT AN ENDANGERED SPECIES ACT STATUS REVIEW OF UPPER KLAMATH AND TRINITY RIVERS ESU CHINOOK (NATIONAL MARINES FISHERIES SERVICE 2011) AND THEIR INTERIM DESIGNATION AS A CANDIDATE SPECIES REPRESENTS A SIGNIFICANT CHANGE SINCE THE SEIR WAS WRITTEN AND SHOULD TRIGGER A MORE THOROUGH EVALUATION OF THE PROGRAM'S IMPACTS TO KLAMATH-TRINITY RIVERS (KTR) CHINOOK AND, IN PARTICULAR, KTR *SPRING-RUN* CHINOOK.

Reasoning

A primary reason for the re-evaluation of CDFG's suction dredge permitting program at this time stems from the Department's failure to update the 1994 suction dredge regulations after the SONCC Coho was federally listed as "threatened" in 1997. The recent declaration of Upper Klamath and Trinity Rivers ESU Chinook as a federal ESA Candidate Species as defined by 50 CFR 424.02(b) underscores the fact that KTR Chinook meet the criteria for consideration as an endangered or threatened species for the purposes of a CEQA analysis pursuant to CA Title 14 Sec. 15380(d). The very fact that NMFS is now evaluating Klamath-Trinity Chinook for addition to the federal listing indicates that this species *may* be "threatened" as that term is used in the Federal Endangered Species Act³⁰ (see SEIR 4.3-5 lines 3-16).

Recommendation

The Department should proceed from this point with the assumption that Upper Klamath and Trinity Rivers ESU Chinook (inclusive of KTR spring-run Chinook) will be federally listed so that the proposed program's CEQA analysis and subsequent regulations will not be out-of-date and/or out of compliance should Upper Klamath and Trinity Rivers ESU Chinook be federally listed on or before the statutory deadline of January 28, 2012 for NMFS to issue their listing decision. Table 4.3-1 ("Action Species") should be updated to

³⁰ National Marine Fisheries Service. 2011. Listing Endangered and Threatened Species; 90-Day Finding on a Petition To List Chinook Salmon, Federal Register (Proposed Rules), 76: 70 (April 12, 2011) p. 20302 <http://www.nmfs.noaa.gov/pr/pdfs/fr/fr76-20302.pdf>, accessed 4/25/11.

show Upper Klamath and Trinity Rivers ESU Chinook as a federal Endangered Species Act Candidate Species as defined in 50 CFR 424.02(b).

COMMENT # 19: THE SEIR INCORRECTLY ASSUMES THAT SALMON RIVER'S DISTINCT METAPOPOPULATION OF KTR SPRING-RUN CHINOOK IS NOT LIMITED ENOUGH IN NUMBER OR GEOGRAPHIC DISTRIBUTION TO WARRANT CONSIDERATION OF IMPACTS TO INDIVIDUAL FISH AS POTENTIALLY AFFECTING THE SPECIES AT THE POPULATION- AND RANGE-LEVEL.

Reasoning

The SEIR on p. 4.3-23 line 26, states that:

“CDFG did not consider impacts to individual members of a population to be significant, unless the species was extremely rare. While a more conservative approach was contemplated, it was determined to be inappropriate because it would not be an effect that would be considered “substantial,” especially given the statewide scope of the Proposed Program. For these reasons, the analysis focuses instead on population- and range-level effects.”

Thirty years of Salmon River spring-run Chinook census population surveys between 1980 and 2010 provide unequivocal evidence that this species is, in fact, rare and very limited in distribution. Total census population numbers of adult spring Chinook in the Salmon River have ranged between 78 and 1,304 individuals with a 30-year median census population of 466 adults³¹.

Further underscoring the significance of these low numbers, Nehlsen et al. (1991)³² point out that, for wild stock, *effective population* size may be one-half of the *census population* because “the effective population size is defined as one in which each spawner contributes equally to the subsequent generation (which requires equal sex ratios and equal spawning success among all individuals).” Using the ratio of effective population = ½ census population, the Salmon River spring-run Chinook has a 30-year median *effective population* of 233 fish (and a low of 39 fish and a high of 652 fish).

³¹ Salmon River Restoration Council. 2010. Spring Chinook Summer Steelhead Survey Results 1980-2010 (Excel spreadsheet). <http://www.srrc.org/publications/programs/fisheries/SRRC%20Spring%20Chinook%20Summer%20Steelhead%20Survey%20Results%201980-2010.xls>, accessed 4/25/11.

³² Nehlsen, W., J.E. Williams, and J.A. Lichatowich. 1991. Pacific Salmon at the Crossroads: Stocks at Risk from California, Oregon, Idaho, and Washington. Fisheries, Vol. 16, No. 2. pps 4-21. http://www.krisweb.com/krisrussian/krisdb/html/krisweb/biblio/gen_afs_nehlsenetal_1991.pdf, accessed 4/25/11.

Effective populations of more than 500 fish may be necessary to reduce a stock's vulnerability to environmental stochasticity,³³ and the Salmon River KTR spring-run Chinook have a median effective population far below this threshold (as well as a median census population also below this threshold). Elder et al. (2002)³⁴ concluded that Salmon River spring-run Chinook escapement is low enough to place the population at elevated risk of significant mortality due to stochastic events in many years.³⁵ Nehlsen et al. (1991) classify the greater Klamath River spring-run Chinook as being at “high risk of extinction.”

Given these critical numbers, any additional stress to Salmon River KTR spring-run Chinook—including impacts to individual fish, holding habitat, or spawning substrate, etc.—can be conservatively estimated to be likely to adversely affect the run at a population- or range-level and pose deleterious effects to these fish. It is significant to note the main areas of summer holding habitat coincide with areas most commonly dredged in the Salmon River watershed, and CDFG has identified the entire range of KTR spring-run Chinook as receiving moderate to high suction dredging activity (SEIR Appendix F).

The Salmon River's KTR spring-run Chinook are a distinct wild metapopulation, distinct from the Trinity River's hatchery-influenced stock. In fact, the Salmon River's stock is the largest wild run of spring Chinook in the entire Klamath River system³⁶ and one of the last in California³⁷. The Klamath River Basin Stock Identification Committee of the Klamath River Basin Fisheries Task Force identified the Salmon River spring-run Chinook as a distinct metapopulation.³⁸ Fin-clipped Trinity River hatchery spring-run Chinook have never been found in the Salmon River (Peter Brucker, personal

³³ Nehlsen, W., J.E. Williams, and J.A. Lichatowich. 1991. Pacific Salmon at the Crossroads: Stocks at Risk from California, Oregon, Idaho, and Washington. Fisheries, Vol. 16, No. 2. pps 4-21. http://www.krisweb.com/krisrussian/krisdb/html/krisweb/biblio/gen_afs_nehlsenetal_1991.pdf, accessed 4/25/11

³⁴ Elder, D., B. Olson, A. Olson, J. Villeponteaux, and P. Brucker. 2002. Salmon River Sub-basin Restoration Strategy: Steps to Recovery and Conservation of Aquatic Resources. Report for Klamath River Basin Fisheries Restoration Task Force, IA Agreement No. 14-48-11333-98-H019: 52 pp. <http://www.srrc.org/publications/general/SRRC%20Salmon%20River%20Subbasin%20Restoration%20Strategy.pdf>, accessed 4/25/11.

³⁵ Nehlsen, W., J.E. Williams, and J.A. Lichatowich. 1991. Pacific Salmon at the Crossroads: Stocks at Risk from California, Oregon, Idaho, and Washington. Fisheries, Vol. 16, No. 2. pps 4-21. http://www.krisweb.com/krisrussian/krisdb/html/krisweb/biblio/gen_afs_nehlsenetal_1991.pdf, accessed 4/25/11.

³⁶ West, J.R., O.J. Dix, A.D. Olson, M.V. Anderson, S.A. Fox, and J.H. Power. 1992. Evaluation of Fish Habitat Conditions and Utilization in Salmon, Scott, Shasta, and Mid-Klamath Sub- Basin Tributaries 1989-1991. U.S. Department of Agriculture Forest Service. Klamath National Forest. Yreka, CA. <http://www.fws.gov/yreka/Final-Reports/rmaap/1990-FP-2.21-KNF.pdf>, accessed 4/25/11.

³⁷ Moyle, P. B. 2002. Inland Fishes of California. Revised and expanded. University of California Press. Berkeley, CA.: 502 pp.

³⁸ Barnhart, R. A. 1994. Salmon and steelhead populations of the Klamath-Trinity Basin, California. pp. 73-97 In: T. J. Hassler (ed.) Klamath Basin Fisheries Symposium. Humboldt State University. Arcata, CA.

communication, April 2011),³⁹ suggesting that there is no crossover between the Salmon River and Trinity River spring-run Chinook.

Additionally, although the proposed program would operate statewide, basing the determination of whether an impact is “substantial” on the statewide scale is inappropriate for a species of very limited population and limited geographic distribution, such as KTR spring-run Chinook. More appropriate for KTR spring-run Chinook on the Salmon River would be to analyze impacts on a geographic scale defined by the boundaries of a recognized distinct metapopulation for the species and on individual members of the population since, with a median annual census population of 466 adults, impacts to individual Salmon River KTR spring-run Chinook can be reasonably assumed to have an impact on the remarkably small Salmon River population as a whole.

Recommendation

The SEIR should more comprehensively analyze impacts to Salmon River’s metapopulation of KTR spring-run Chinook including impacts to individuals as they relate to population- and range-level impacts.

COMMENT #20: THE PROPOSED SPATIAL AND TEMPORAL RESTRICTIONS DO NOT AVOID THE ADVERSE IMPACTS IDENTIFIED IN IMPACT-BIO-FISH-1 FOR SALMON RIVER KTR SPRING-RUN CHINOOK

Reasoning

The SEIR purports that potentially significant adverse impacts to fish (Impact BIO-FISH-1) are avoided by spatial and temporal restrictions on dredging (SEIR 4.3-24):

“If left unrestricted, impacts of suction dredging on spawning of Fish would be potentially significant with respect to Significance Criteria A and D. However, the Proposed Program incorporates spatial and temporal restrictions on suction dredging activities that are based on life history, distribution and abundance of Fish action species. This includes restrictions on suction dredging in the period immediately before spawning and during critical early life stages (i.e., spawning, incubation, and early emergence) of Fish action species (Table 4.3-1). Streams within the state that provide habitat for Fish species that are either very limited in number and/or distribution are proposed to be closed to suction dredging (Class A), or closed during critical spawning periods.”

However, in the case of KTR spring-run Chinook in the Salmon River watershed, the life history, abundance, and distribution of the fish are improperly accounted for in the spatial and temporal restrictions proposed by CDFG. The Class F suction dredging season (July 1 – Sept. 30) overlaps a minimum of two weeks with the well-documented start of spring-run Chinook spawning season beginning on the Salmon River no later than mid-

³⁹ Brucker, P. 2011. Personal communication with Peter Brucker, Program Director of the Salmon River Restoration Council, Sawyers Bar, CA. www.srrc.org

September⁴⁰ and does not, as the SEIR claims, restrict suction dredging “in the period immediately *before* spawning” (which would be late August or early September for the Salmon River KTR spring-run Chinook). As such, dredging will be permitted concurrently with the spawning of Salmon River KTR spring-run Chinook.

The Class F season, therefore, fails to adequately avoid potentially significant impacts identified in Impact-BIO-FISH-1 to KTR spring-run Chinook during spawning.

Additionally, the very limited number and limited distribution of KTR spring-run Chinook in general and of the Salmon River’s distinct wild metapopulation in particular, suggest that this species would be adequately protected solely via a Class A closure so that direct, indirect, concurrent, and delayed impacts of dredging do not adversely impact the species.

The SEIR continues its rationale of how the “proposed program regulations will minimize the potential for disturbance to all spawning Fishes and their habitats” on 4.3-24 & 25:

- *“Section 228(c)(2): requires dredgers to provide CDFG with information regarding the location of their dredging operation(s). This will allow CDFG to monitor and manage areas with high dredging use, and potentially modify regulations if deleterious effects are identified.*
- *Section 228(k)(15): requires dredgers to level all tailing piles prior to working another excavation site or abandoning the excavation site. This will minimize the potential for Fish to spawn on unstable substrate.*
- *Section 228(k)(16): requires dredgers to avoid the disturbance of redds and adult fish.”*

As for Section 228(c)(2): the proposed program does not establish any formal or organized effort to monitor the impacts of suction dredging nor to review regulations in light of further examination of the proposed programs actual impacts once implemented. In fact, the SEIR dismissed the alternative of tracking and adaptively managing stream use by suction dredgers. (SEIR 6-16, lines 26-33). With CDFG under tight budgetary restrictions and with no plan to request the Legislature to increase suction dredge permit fees to pay for monitoring or the additional expense of enforcing increasingly complex regulations, there is no reason to believe nor any evidence presented that indicates the dredge location reporting requirement will provide any reduction of impact to any biologic resource. Without a plan for monitoring in place nor the budgetary likelihood of being able to pay for such monitoring, this regulation is, in effect, meaningless.

⁴⁰ Salmon River Restoration Council. 2011. Salmon River Spring Run Chinook Escapement Survey 2010-FISHERIES-FP-07.
<http://www.srrc.org/publications/programs/fisheries/SRRC%20Spring%20Chinook%20Spawner%20Surveys%202010%20Report.pdf>, accessed 4/25/11.

As for Section 228(k)(15): the SEIR 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. In fact, Harvey & Lisle⁴¹ 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**” (emphasis added). The proposed program’s regulations do not require dredgers to meet this standard. Even if it were possible to restore original bed topography (and dredgers are submitting comments on this SEIR indicating that this requirement cannot be met), the regulations do not require restoration of original particle size distribution as the best available science indicates is necessary to reduce unacceptable effects on spawning success. As such, the best available science suggests that this regulation is insufficient to minimize adverse impacts and potential deleterious effects.

As for Section 228(k)(16): the proposed program allows dredging to occur concurrently with the start of KTR spring-run Chinook spawning season on the Salmon River. Although this regulation prohibits the disturbance of redds and adult fish, the proposed program should not be creating a situation in which dredging season overlaps with spawning season and early fry emergence and, having recognized yet allowed a potential deleterious effect of overlapping seasons, is in violation of Fish and Game Code § 5653. This regulation is no substitute for prohibiting all dredging during all parts of spawning season and fry emergence with enough of a temporal buffer to ensure no overlap even during atypical years or issuing a Class A closure on the Salmon River and its forks.

COMMENT # 21: SPATIAL AND TEMPORAL RESTRICTIONS DO NOT AVOID SEASONAL USE RESTRICTIONS AND OTHER REGULATIONS WOULD NOT PREVENT SIGNIFICANT DIRECT EFFECTS ON SPAWNING FISH SUCCESS AND THEIR HABITAT STATEWIDE. (SEIR 4.3-23,24,25).

The most relevant new information since the 1994 EIR and 1997 EIR are research findings reported by Harvey and Lisle²² that found reduced egg-to-fry survival for Chinook salmon spawning in areas disturbed by suction dredging. Similar reduced survival would be expected for other fall spawning species such as federally listed Coho salmon. Disturbance of stream substrate by suction dredging indirectly kills developing eggs and alevins because the eggs and alevins tend to be scoured out during winter floods at a greater proportion than if the substrate had not been previously disturbed by dredging. This is not surprising. Anyone who understands or studies the perilous environment of a developing salmon egg would expect lethal impacts from streambed disturbance.⁴² The SEIR (4.3-24 lines 15-22) acknowledges lethal fish impact by stating that:

⁴¹ Harvey, B.C. and Lisle, T.E. 1999. Scour of Chinook Salmon Redds on Suction Dredge Tailings, North American Journal of Fisheries Management 19:613-617

<http://www.fs.fed.us/psw/publications/harvey/Harvey99.PDF>, accessed 4/25/11

⁴² Nawa, R.K. and C.A. Frissell. 1993. Measuring Scour and Fill of Gravel Streambeds with Scour Chains and Sliding-Bead Monitors. North American Journal of Fisheries Management 13: 634-693.

15 Although dredge tailings may be attractive to spawning *Fish*,
16 they may be potentially less suitable for spawning than natural gravels. The loose
substrate
17 often found in dredge tailings may be too unstable; embryos may experience reduced
18 survival under these conditions due to increased scouring (Thomas, 1985; Harvey and
Lisle,
19 1999), which can be exacerbated as embryo development frequently coincides with
periods
20 of high flow which mobilizes streambeds (Holtby and Healey, 1986; Lisle and Lewis,
1992).
21 Hence, loose tailings could have a substantial adverse effect on eggs and developing
Fish
22 unless this material is allowed to disperse before spawning commences.

These statements are mostly accurate except for speculation about severity of dredging impacts and line 22 that implies that dispersal of dredged material somehow prevents or reduces the degraded conditions created by dredging. There is no scientific data to support this speculative assertion. Published findings by Harvey and Lisle⁴³ make it unnecessary to speculate about the reduced quality of dredged tailings for spawning salmon and expected lethal effects. This critical paragraph needs to be rewritten without speculation and caveats to be more consistent with published information. We suggest:

“Although dredge tailings are likely to be attractive to spawning Fish, they are less suitable for spawning than natural gravels. The loose substrate often found in dredge tailings are unstable; embryos experience reduced survival under these conditions due to increased scouring (Thomas, 1985; Harvey and Lisle, 1999), which are exacerbated as embryo development frequently coincides with periods of high flow which mobilizes streambeds (Holtby and Healey, 1986; Lisle and Lewis, 1992). Hence, tailings have a substantial adverse effect on eggs and developing Fish.”

Despite new information about the lethal effects of disturbed substrate, the SEIR continues to falsely purport that a temporal restriction immediately before fish spawning commences would result in “no significance” determination for fish species such as salmon. Contrary to what is stated in the SEIR (4-3-24, line 37), the three Proposed Program regulations (4.3-24 lines 39-42 and p. 25 lines 1-5) do not minimize the expected decreased egg-to-fry survival of salmon spawning on substrates previously disturbed by suction dredging.

Section 228 (c) (2) that requires dredgers to provide CDFG with information regarding the location of their dredging operations would not reduce lethal effects to salmon since

⁴³ Harvey, B.C. and Lisle, T.E. 1999. Scour of Chinook Salmon Redds on Suction Dredge Tailings, North American Journal of Fisheries Management 19:613-617
<http://www.fs.fed.us/psw/publications/harvey/Harvey99.PDF>, accessed 4/25/11.

CDFG lacks the funding to make pre-dredging site inspections (4.3-24 lines 39-42; 6-15 lines 11-23). Once the stream substrate has been disturbed by dredging the decreased survival of subsequent spawning salmon is certain. Monitoring of disturbance would not be effective since the irreversible damage to the substrate has already occurred. The SEIR provides no parameters for a “threshold” of disturbance at the site or reach that monitoring could detect and prevent with subsequent management. In addition CDFG lacks funding to conduct such monitoring.

“Section 228(k)(15): requires dredgers to level all tailing piles prior to working another excavation site or abandoning the excavation site.” (4.3-25 lines 1-3) The assertion that “[t]his will minimize the potential for fish to spawn on unstable substrate” is speculative and not supported by scientific data. Spawning salmon will continue to be attracted to areas disturbed by mining. There is no feasible way to prevent this. It is also not technically feasible to restore the pre-disturbance sediment texture and stream bed grade once the sediments have been spewed out by a dredge and scattered downstream. Compliance with this requirement is not likely, mostly because it cannot be done easily, especially on larger rivers with relatively strong currents. R. Nawa has observed dozens of suction dredge sites and not one has had the holes filled or the streambed returned to pre-mining grade as required in regulations. Suction dredgers are not likely to change habits developed over decades of dredging. Even if tailings are leveled there is no scientific data that demonstrates that the deleterious effects found by Harvey and Lisle (1999) will be eliminated or even reduced.

“Section 228(k)(16): requires dredgers to avoid the disturbance of redds and adult fish.” (4.3-25, lines 4-5). Fish would likely hide before dredgers see them and dredgers are not trained biologists. Dredgers cannot be expected to make an effort to locate redds that would preclude them from dredging. Only a trained biologist would likely recognize a redd, especially a steelhead redd or lamprey redd that is several weeks old.

Seasonal restriction that prevent dredging from occurring when salmon are attempting to spawn have been shown to be ineffective because pre-spawning disturbance causes reduced egg-to-fry survival that occurs when salmon spawn on the dredge tailings.⁴⁴

The SEIR is deceptive about BIO-FISH -1 impact (SEIR 4.3 p.23-25) because it couches scientifically proven lethal effects as “may” or “could” while assigning certainty “will” to protective regulations that have been demonstrated to be ineffective or remain unproven. The exact opposite is closer to what is known. The dredging effects are certain. The regulatory restrictions could or may reduce the impacts. The dredgers may not follow the regulations.

The SEIR fails to identify federally listed Coho salmon as a fish species that requires all of its occupied streams to be closed to dredging. The National Marine Fisheries Service

⁴⁴ Harvey, B.C. and Lisle, T.E. 1999. Scour of Chinook Salmon Redds on Suction Dredge Tailings, North American Journal of Fisheries Management 19:613-617
<http://www.fs.fed.us/psw/publications/harvey/Harvey99.PDF>, accessed 4/25/11

has listed suction dredging as a limiting factor for Coho.⁴⁵ All critical habitats for Coho would logically need to be Class A since suction dredging is discretionary and certainly does not contribute to the recovery of Coho salmon.

The CDFG has created a very high standard for dredging impact to be considered “deleterious” and did not consider impacts to individual members of a population to be significant, unless the species was extremely rare (SEIR 4.2-23 lines 26-27). This arbitrary definition is unfortunate because it is grossly 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.” (SEIR 4.3-3 lines 21-23)

For the Southern Oregon/northern California Coast (SONNC) Evolutionarily Significant Unit (ESU), the SEIR Proposed Program has identified “select” Coho salmon streams as Class A (no dredging) but many other Coho streams appear to be left open with seasonal restrictions that do not protect spawning habitat and would result in lethal effects (reduced egg-to-fry survival). For example, the Scott River, a tributary to the Klamath River, is habitat for federally threatened Coho salmon. The main stem Scott River and all tributaries accessible to Coho salmon have been identified as critical habitat (64FR24049-24061). The CDFG map of Coho salmon habitat indicates Coho present in the main stem as well as several west side tributaries (Shackleford Cr., Kidder Cr., Patterson Cr., Crystal Cr., Etna Cr., French Cr., South Fork Scott River.⁴⁶ The Proposed Program has identified only some tributaries of the Scott River as Class A closed to dredging (Shackleford Cr., French Cr. and Sugar Cr. [SEIR 2-54,55]). The main stem Scott River and most other tributaries would be classified C and open to unlimited dredging with 4 inch dredges between July 1 and September 30. In addition the Scott River would be open to up to 8 inch commercial dredges at the discretion of CDFG (SEIR 2-17,18). Except for 3 minor tributaries, the spawning substrate of federally listed Coho salmon would be open to despoliation contrary to federal law. Coho salmon that spawn on dredge tailings would be expected to have lethal effects with reduced egg-to-fry survival. The SEIR appears to have provided minor stream protections to federally listed Coho salmon in the Scott River basin while promulgating regulations similar to those of the 1994 EIR despite the federal listing of Coho salmon. The CDFG cannot arbitrarily pick some Coho streams within the SONNC ESU to protect from the lethal effects of suction dredging while leaving others open to despoliation. Despite research that indicates that degradation of spawning habitat is the primary pathway of dredging effects to salmon, the SEIR clings to the notion that temperature is an overriding issue by apparently selecting Coho streams for Class A protection based on thermal refugia (SEIR Table 4.3-1 p. 3). All Coho salmon streams in California merit the Class A closure.

⁴⁵ http://swr.nmfs.noaa.gov/recovery/Coho_SONCCC.htm#Conservation_Actions

⁴⁶ http://www.dfg.ca.gov/fish/documents/SAL_SH/SAL_Coho_Recovery/ReportToCommission_2004/HiResFigs/Figure_2-3.pdf

Additional unexplained bias can be found with the proposed dredging restrictions for the Central California Coast Coho salmon ESU. The SEIR (Table 4.3-1 p.3) correctly proposes Class A closure for all Central Coast Coho streams and correctly acknowledges that “[n]o seasonal restrictions would avoid potential impacts to organisms or their habitat. Thus Class A restriction is proposed.” Contrast this to SONNC Coho on the same page where the SEIR falsely states that “class C seasonal restriction on dredging would avoid or minimize potential impacts to spawning adults, egg incubation and emergence.” All Coho salmon streams in California merit the Class A closure.

The SEIR failed to analyze, predict, or estimate quantitatively how many spawning salmon could be adversely affected in a typical high use river system based on the intensity of dredging (Appendix G-7). For example, the number of spawning salmon impacted by suction dredging in the Scott River could be estimated. Data about volume moved (Table 3-2), suction dredge survey results (Appendix G) and observations of spawning Chinook salmon suggest that each dredging day affects roughly the amount of gravel needed by one spawning female salmon. In 2008, the Scott River had an estimated 1,587 dredger days. This estimated amount of dredging would create the same number of potential salmon spawning sites disturbed. Salmon seem to seek out dredge disturbed sites for spawning and a four inch dredge passes gravel of suitable size for spawning. Both factors would cause salmon to use tailings at a higher rate than similar areas not disturbed. A conservative estimate would be that 10% of the disturbed sites would have spawning salmon. This means that an estimated 159 salmon would suffer reduced egg-to-fry survival. Regardless of the assumptions made, the number of spawning salmon and salmon eggs affected is never zero or even an insignificant number because of the relatively low numbers of salmon spawning, relatively high intensity of dredging, observed propensity of salmon to prefer dredged sediments for spawning (SEIR 4.3-24 line15), and dredge size limits that corresponds with the size of suitable spawning gravel.

The SEIR has not demonstrated that there is a surplus of salmon eggs that can be wasted to promote recreational suction dredging. Due to low abundance of salmon and degraded spawning habitat, every salmon egg deposited in the Scott River (and most other river systems) is too precious to waste for a recreational endeavor. During low Chinook escapement years (e.g., 2004), as few as 445 Chinook salmon spawned in the Scott River. The numbers of spawning Coho salmon in Klamath River sub-basins always much lower than Chinook numbers. Spawning habitat is generally poor in the Scott River and its tributaries because of high amounts of fine sediment from mining, agriculture, grazing, logging, and high road densities.

Sophisticated modeling has shown that a single dredger can have a significant impact on mercury concentrations in a moderate sized river system (SEIR 4.2-52:23-26). Similarly, even a minor amount of dredging in a small Coho stream could mean the difference between maintaining a viable population and eventual extirpation. New information from salmon spawning research (Harvey and Lisle, 1999) suggests that forty years of suction dredging is likely to have significantly contributed to declining or low salmon numbers in

some tributary systems. The SEIR fails to discuss or analyze the likely past effects of suction dredging on salmon populations.

Recommendation

Assign a Class A or Class B use classification to KTR spring-run Chinook (SEIR Table 2-1) to address temporal problems with the Class C use classification and impacts of a Class C season. Reassess and quantitatively analyze whether Section 228(c)(2) and Section 228(k)(15) regulations truly reduce the proposed program's adverse impact on anadromous fish statewide.

COMMENT #22: THE PROPOSED PROGRAM DOES NOT AVOID THE ADVERSE IMPACTS IDENTIFIED IN IMPACT-BIO-FISH-2 FOR SALMON RIVER KTR SPRING-RUN CHINOOK AS WELL AS OTHER SPAWNING FISH SPECIES ON RIVERS THROUGHOUT THE STATE.

Reasoning

The SEIR purports that potentially significant adverse impacts to fish (Impact BIO-FISH-2) are avoided by spatial and temporal restrictions on dredging (SEIR 4.3-28):

“If left unrestricted, direct entrainment, displacement or burial of eggs, larvae and mollusks by suction dredging would be potentially significant with respect to Significance Criteria A and D. However, the Proposed Program incorporates spatial and temporal restrictions to protect the most vulnerable early life stages of Fish action species (Table 4.3-1).”

However, in the case of KTR spring-run Chinook in the Salmon River watershed, the life history, abundance, and distribution of the fish are improperly accounted for in the spatial and temporal restrictions proposed by CDFG. The Class C suction dredging season (June 1 – Sept. 30) overlaps a minimum of two weeks with the well-documented start of spring-run Chinook spawning season beginning on the Salmon River no later than mid-September⁴⁷ and does not, as the SEIR claims, restrict suction dredging “in the period immediately *before* spawning” (which would be late August or early September for the Salmon River KTR spring-run Chinook). As such, dredging will be permitted concurrently with the spawning of Salmon River KTR spring-run Chinook.

The Class F season, therefore, fails to adequately avoid the potentially significant direct impacts identified in Impact-BIO-FISH-2 to KTR spring-run Chinook during spawning.

Additionally, the very limited number and distribution of KTR spring-run Chinook in general and of the Salmon River's predominantly or exclusively wild subpopulation in particular, make this species protected from adverse impacts solely via a Class A closure

⁴⁷ Salmon River Restoration Council. 2010. Spring Chinook Summer Steelhead Survey Results 1980-2010 (Excel spreadsheet). <http://www.srrc.org/publications/programs/fisheries/SRRC%20Spring%20Chinook%20Summer%20Steelhead%20Survey%20Results%201980-2010.xls>, accessed 4/25/11.)

so that direct, indirect, concurrent, and delayed impacts of dredging do not adversely impact the species. As proposed, the program fails to close the Salmon River to dredging for the complete spawning season much less provide the more protective Class A closure.

The SEIR continues its rationale of how the proposed program regulations “would further minimize the potential for entrainment, displacement, or burial of eggs, larvae and mollusks in areas open to suction dredging:” on 4.3-28:

- *“Section 228(c)(2): requires dredgers to provide CDFG with information regarding the location of their dredging operation(s). This will allow CDFG to monitor and manage areas with high dredging use, and potentially modify regulations if deleterious effects are identified.*
- *Section 228(k)(13): prohibits dredging in mussel beds.*
- *Section 228(k)(14): requires dredgers to take reasonable care to avoid dredging silt and clay materials that may result in increased turbidity and deposition of fines on the gravels.*
- *Section 228(k)(15): requires dredgers to level all tailing piles prior to working another excavation site or abandoning the excavation site.*
- *Section 228(k)(16): requires dredgers to avoid the disturbance of eggs, redds, tadpoles and mollusks.”*

As for Section 228(c)(2): the proposed program does not establish any formal or organized effort to monitor the impacts of suction dredging nor to review regulations in light of further examination of the proposed programs actual impacts once implemented. In fact, the SEIR dismissed the alternative of tracking and adaptively managing stream use by suction dredgers. (SEIR 6-16, lines 26-33). With CDFG under tight budgetary restrictions and with no plan to request the Legislature to increase suction dredge permit fees to pay for monitoring or the additional expense of enforcing increasingly complex regulations, there is no reason to believe nor any evidence presented that indicates the dredge location reporting requirement will provide any reduction of impact to any biologic resource. Without a plan for monitoring in place nor the budgetary likelihood of being able to pay for such monitoring, this regulation is, in effect, meaningless.

As for Section 228(k)(14): this requirement is based on a subjective determination of what “reasonable care” means as well as a subjective determination of what defines a “significant increase in increased turbidity.” No scientific study has ever indicated that dredging does not increase turbidity or deposition of fines on gravel. It is important to note that despite the SEIR’s claim to the contrary on p. 4.3-28, Section 22k(k)(14) does not actually address the issue of deposition of fines on gravels (see Proposed Amendments To Regulations, Title 14, p.15).

As for Section 228(k)(15): the SEIR 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. In fact, 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**” (emphasis added). The proposed program’s regulations do not require dredgers to meet this standard. Even if it were possible to restore original bed topography (and dredgers are submitting comments on this SEIR indicating that this requirement cannot be met), the regulations do not require restoration of original particle size distribution as the best available science indicates is necessary to reduce unacceptable effects on spawning success. As such, the best available science suggests that this regulation is insufficient to minimize adverse impacts and potential deleterious effects.

As for Section 228(k)(16): the proposed program allows dredging to occur concurrently with the start of KTR spring-run Chinook spawning season on the Salmon River. Although this regulation prohibits the disturbance of redds and adult fish, the proposed program should not be creating a situation in which dredging season overlaps with spawning season and early fry emergence and, having recognized yet allowed a potential deleterious effect of overlapping seasons, is in violation of Fish and Game Code § 5653. This regulation is no substitute for prohibiting all dredging during all parts of spawning season and fry emergence with enough of a temporal buffer to ensure no overlap even during atypical years or issuing a Class A closure on the Salmon River and its forks.

Recommendation

Assign a Class A or Class B use classification to KTR spring-run Chinook (SEIR Table 2-1) to address temporal problems with the Class C use classification and impacts of a Class C season. Reassess and quantitatively analyze whether Section 228(c)(2), Section 228(c)(14) and Section 228(k)(15) regulations truly reduce the proposed program’s adverse impact on KTR spring-run Chinook.

COMMENT #23: THE PROPOSED PROGRAM DOES NOT AVOID THE ADVERSE IMPACTS IDENTIFIED IN IMPACT-BIO-FISH-3 FOR SALMON RIVER KTR SPRING-RUN CHINOOK AS WELL AS OTHER SPECIES ON RIVERS THROUGHOUT CALIFORNIA.

Reasoning

The SEIR purports that potentially significant adverse impacts to fish (Impact BIO-FISH-3) are avoided by spatial and temporal restrictions on dredging (SEIR 4.3-30):

“If left unrestricted, impacts of suction dredging early life stages of Fish would be potentially significant under Significance Criteria A and D. However, the Proposed Program incorporates spatial and temporal restrictions on suction dredging where necessary to protect the development of critical early life stages of Fish action species (Table 4.3 □1). Spatial and temporal closures of streams for Fish action species provides surrogate protection for many other species of aquatic fauna with life histories similar to the action species.”

Again, in the case of KTR spring-run Chinook in the Salmon River watershed, the life history, abundance, and distribution of the fish are improperly accounted for in the spatial and temporal restrictions proposed by CDFG. The Class C suction dredging season (June 1 – Sept. 30) overlaps a minimum of two weeks with the well-documented start of spring-run Chinook spawning season beginning on the Salmon River no later than mid-September (Salmon River Restoration Council 2011) and does not, as the SEIR claims, restrict suction dredging “in the period immediately *before* spawning” (which would be late August or early September for the Salmon River KTR spring-run Chinook). As such, dredging will be permitted concurrently with the spawning of Salmon River KTR spring-run Chinook.

West et al. found spring-run Chinook survival to fry emergence in the South Fork Salmon River was highest in areas with the lowest volume of sediment, and lowest in areas with the most sediment.⁴⁸ The SEIR (p. 4.3-29) recognizes that “dredging has potential to release fine materials which can clog interstitial spaces” and “can result in a number of negative effects, including the reduced size of embryos at various developmental stages, premature emergence of alevins (newly hatched salmon still attached to the yolk sac), increased alevin development time, and higher pre- and post-hatching mortality.” According to the Salmon River TMDL, “local residents have observed turbidity plumes and deposition of fine material downstream of suction dredges” (North Coast Regional Water Quality Control Board 2005).

The SEIR continues its rationale of how the proposed program regulations “would further minimize the potential impacts to critical early life stages:” on 4.3-30 & 31:

- *“Section 228(k)(3): prohibits dredgers from dredging within 3 feet of the lateral edge of the current water level. This regulation would protect against streambank destabilization that could result in release of fine sediment.*
- *Section 228(k)(4): prohibits dredgers from damaging or removing streamside vegetation. This regulation would protect against streambank destabilization that could result in release of fine sediment.*
- *Section 228(k)(14): requires dredgers to take reasonable care to avoid dredging silt and clay materials that may result in increased turbidity and deposition of fines on the gravels.*
- *Section 228(k)(15): requires dredgers to level all tailing piles prior to working another excavation site or abandoning the excavation site.*
- *Section 228(k)(16): requires dredgers to avoid the disturbance of eggs, redds, tadpoles and mollusks.”*

⁴⁸ West, John R. 1991. A Proposed Strategy to Recover Endemic Spring-Run Chinook Salmon Populations and Their Habitats in the Klamath River Basin, USDA Forest Service, Klamath National Forest, 1312 Fairlane Road, Yreka, CA 96097 http://www.krisweb.com/biblio/klamath_usfs_west_1991.pdf, accessed 4/25/11.)

While Section 228(k)(3) and (4) regulations are likely to assist in minimizing sedimentation originating outside the active stream channel, the requirement to level all tailings piles in Section 22(k)(15) is unlikely to minimize impacts associated with sedimentation or redistribution of fines on gravels because it is inconceivable for dredgers to be able to place fines and sediment back into a dredge hole. In many situations, dredging re-suspends and transports most or all of the fine sediment that may clog interstices of gravel and impact early life stages of fish well away from the dredge and tailings pile. The SEIR provides no indication of how this easily transported fine sediment may be captured returned to the originating dredge hole.

As for Section 228(k)(14): this requirement is based on a subjective determination of what “reasonable care” means as well as a subjective determination of what defines a “significant increase in increased turbidity.” This is too vague and subjective and can be expected to result in less than adequate compliance. No scientific study has ever indicated that dredging does not increase turbidity or deposition of fines on gravel. It is important to note that despite the SEIR’s claim to the contrary on p. 4.3-28, Section 22k(k)(14) does not actually address the issue of deposition of fines on gravels but rather simply the subjective and qualitative interpretation of increased turbidity (see Proposed Amendments To Regulations, Title 14, p.15).

Recommendation

Assign a Class A or Class B use classification to KTR spring-run Chinook (SEIR Table 2-1) to address temporal problems with the Class C use classification and impacts of a Class C season. Reassess and quantitatively analyze whether Section 228(c)(14) and Section 228(k)(15) regulations truly reduce the proposed program’s adverse impact on KTR spring-run Chinook.

COMMENT #24: THE PROPOSED PROGRAM DOES NOT AVOID THE ADVERSE IMPACTS IDENTIFIED IN IMPACT-BIO-FISH-8 FOR SALMON RIVER KTR SPRING-RUN CHINOOK BECAUSE MANY IMPORTANT AND WELL-DOCUMENTED THERMAL REFUGIA HAVE BEEN OMITTED FROM THE LIST OF AREAS CLOSED TO DREDGING.

Reasoning

The SEIR purports that potentially significant adverse impacts to fish (Impact BIO-FISH-8) are avoided by “specific year round closures of areas within streams that are known to provide thermal refugia for this species” (SEIR 4.3-41):

“If left unrestricted, impacts of suction dredging on thermal refugia would be potentially significant with respect to Significance Criteria A, B and D. More specifically, unrestricted dredging of thermal refugia utilized by Chinook salmon in the Klamath and Salmon River watersheds could result in a substantial decline of the species, alteration of thermal refugia habitat, and affect movement of the species within summer holding areas. However, the Proposed Program regulations include specific year-round

closures of areas within streams that are known to provide thermal refugia for this species (Appendix L). Closures of these areas, and appropriate buffers in the upstream direction, will provide protection for this type of habitat.”

Salmon River thermal refugia with holding habitat that have been documented both on the ground and/or by airborne remote sensing surveys but are omitted from the SEIR’s Appendix L (“Species Based Restrictions On Proposed Program Activities”) include:

1. Wooley Creek confluence with main stem Salmon River ^{*†}
2. Tom Payne Creek confluence with main stem Salmon River [†]
3. Grants Creek confluence with main stem Salmon River [†]
4. Morehouse Creek confluence with main stem Salmon River ^{*†}
5. Lewis Creek confluence with main stem Salmon River ^{*†}
6. Springs at Bloomer Falls on main stem Salmon River ^{*}
7. Crapo Creek confluence with main stem Salmon River ^{*†}
8. Knownothing Creek confluence with SF Salmon River ^{*†}
9. Hotelling Creek confluence with SF Salmon River ^{*}
10. Black Bear Creek ^{*†‡}
11. Indian Creek confluence with SF Salmon River ^{*}
12. East Fork of the SF Salmon River confluence with SF Salmon River ^{*†}
13. Picayune Gulch confluence with NF Salmon River [†]
14. Peck Gulch confluence with NF Salmon River [†]
15. Cronan Gulch confluence with NF Salmon River ^{*†‡}
16. Olsen Gulch confluence with NF Salmon River ^{*}
17. Glasgow Creek confluence with NF Salmon River ^{*†}
18. Whites Gulch confluence with NF Salmon River ^{*†‡} (SRRC 2005 thermal refugia survey documented dredge tailings filling in much of the pool)
19. North Russian Creek confluence with NF Salmon River ^{*†‡}
20. South Russian Creek confluence with North Russian Creek (NF Salmon drainage) ^{*†‡}

* = identified by Salmon River Restoration Council’s Thermal Refugia Surveys, 2004 & 2005

† = identified by Salmon River Basin Thermal Infrared (TIR) Survey, 2009

‡ = Coho present in refugia during Salmon River Restoration Council’s Thermal Refugia Survey, 2005

All data from Salmon River Restoration Council, PO Box 1089, Sawyers Bar, CA, (530) 462-4665

Not all thermal refugia occur at mouths of cooler tributary streams. Interactions with groundwater and hyporheic flows also provide cool water for thermal refugia or to otherwise buffer stream temperatures along discernable sections of stream reach, providing local habitat and refugia from warmer main-stem temperatures.⁴⁹ An airborne thermal infrared remote sensing survey of the Salmon River and its forks conducted by Watershed Sciences, Inc. on July 22 & 23, 2009 identified several areas in the Salmon

⁴⁹ Burkholder, B.K., Grant, G.E., Haggerty, R., Khangaonkar, T., and Wampler, P.J. 2008. Influence of hyporheic flow and geomorphology on temperature of a large, gravel-bed river, Clackamas River, Oregon, USA. *Hydrological Processes* 22, 941–953 (2008)

River watershed where subsurface and hyporheic flows create areas of cooler water, sometimes providing substantial cool water inputs for long reaches.⁵⁰ Areas with an important contribution of cool water from subsurface flows, hyporheic flows, seeps and springs identified by the 2009 Salmon River Basin Thermal Infrared Survey include:

1. the 2.5 mile long reach on the main stem Salmon River immediately below the confluence of the NF and SF Salmon Rivers at Forks of Salmon, CA,
2. at river mile 9.25 on the NF Salmon River,
3. the vicinity around and below Little North Fork confluence with the NF Salmon River,
4. at river mile 14.79 on the NF Salmon near Sawyers Bar, CA,
5. at river mile 14.93 on the NF Salmon near Sawyers Bar, CA,
6. near the confluence of Little Grizzly Creek and the South Fork Salmon River.

Despite the clear understanding of the significance of thermal refugia for the survival of salmonids and other species, the locations of thermal refugia created by springs, seeps, subsurface, and hyporheic flows are poorly known. Nevertheless, all identified areas of cool water holding habitat should be closed to all dredging.

Recommendation

Add all omitted thermal refugia listed above to Appendix L and place a Class A closure on these areas with an effective 500 foot closure. Obtain and closely review the Salmon River Restoration Council's detailed July 2009 TIR data to identify all areas where hyporheic thermal refugia are likely to exist and close these areas to dredging.

COMMENT #25: THE COMPLEX SET OF THERMAL REFUGIA CLOSURES AND REGULATIONS REQUIRED TO ATTEMPT AVOIDANCE OF ADVERSE IMPACT TO FISH ON THE SALMON RIVER CREATES A FAILURE-PRONE SYSTEM DEPENDENT UPON MICROMANAGEMENT OF TOO MANY VARIABLES TO BE EFFECTIVE.

Reasoning

In order to avoid adverse impacts to fish, the proposed program relies very heavily on a complex set of regulations to micromanage when, where, and how a dredge may be used. Nowhere is this more apparent—or prone to failure—than on the Salmon River with its 38 known thermal refugia that, if closed to dredging, will create a complex and confusing patchwork of opened and closed areas throughout the river system. If any component in this system of micromanagement is not working flawlessly—whether that is the result of an individual dredger knowingly or unknowingly violating the regulations or a systemic

⁵⁰ Watershed Sciences, Inc. 2010. Salmon River Basin Thermal Infrared (TIR) Survey Report, prepared for Salmon River Restoration Council.
http://www.srrc.org/publications/programs/monitoring/SRRC%20Salmon_River_TIR_Report%202009.pdf, accessed 4/25/11.

issue with the regulations to begin with (e.g., how will a thermal refugia and its 500 foot radius be identified on the ground)—there are likely to be adverse and potentially deleterious effects to sensitive, rare, and threatened species. Given the significance of potential impact and the likelihood of some degree of failure to successfully micromanage the many potentially adverse impacts, an added degree of caution is required.

For example, how will CDFG manage the multitude of thermal refugia closures on the Salmon River? There are a minimum of 38 known thermal refugia at tributary confluences alone, and managing these 38 closed areas as is required to avoid significant impacts to fish would require an extraordinary effort on part of CDFG *and* the willing and knowledgeable cooperation of all dredgers. Almost none of the tributaries that form thermal refugia at their mouths are identified on the ground by signs at all (and none of them are signed at the refugia). Every dredger would need a detailed map and geographic awareness to be able to determine whether or not they are dredging in a closed thermal refugia. It is unrealistic to assume that placing a thermal refugia on a Class A closure list will equate to compliance on the ground when there are so many different refugia in a small area. This is not a situation where one or two places are closed; it is a large number of unmarked closed areas within a heavily dredged river corridor. The SEIR does not discuss how this will be successfully managed nor provide any analysis of consequences of failure.

Any failure of the proposed program's complex set of regulations, seasonal restrictions, and geographic closures to avoid impacts of dredging on KTR spring-run Chinook could have a significant impact and deleterious effect on these fish. Due to the exceptionally low population of KTR spring-run Chinook on the Salmon River—as few as 78 adult fish have been counted some years and the median population is only 466⁵¹—an impact on any individual fish could have an impact at the population level.

Recommendation

Rather than relying on a complex program of micromanagement prone to failure, the proposed program should close the Salmon River, its forks and tributaries to all dredging year-round (Class A).

COMMENT #26: THE PROPOSED PROGRAM'S REGULATIONS EXTEND THE OPEN DREDGING SEASON ON THE SALMON RIVER AND ITS FORKS AS COMPARED TO THE 1994 REGULATIONS, OVERLAPPING DREDGING WITH THE BEGINNING OF SPRING-RUN CHINOOK SPAWNING SEASON IN FALL AND THE LATTER PORTION OF FRY EMERGENCE IN SPRING. THIS CREATES A SITUATION WHERE MINING ACTIVITY WILL

⁵¹ Salmon River Restoration Council. 2010. Spring Chinook Summer Steelhead Survey Results 1980-2010 (Excel spreadsheet). <http://www.srrc.org/publications/programs/fisheries/SRRC%20Spring%20Chinook%20Summer%20Steelhead%20Survey%20Results%201980-2010.xls>, accessed 4/25/11.

DIRECTLY THREATEN AND ADVERSELY IMPACT SPAWNING ADULT FISH, REDDS, EMERGING FRY, AND HABITAT ACTIVELY BEING USED FOR REPRODUCTION.

Reasoning

Although this discrepancy is mentioned in several of the previous comments, it is of such significance that it merits its own comment. If anything, the increase in knowledge and understanding of the impacts of suction dredging on salmonids coupled with the continued decline of KTR spring-run Chinook population on the Salmon River since 1994, these fish should be receiving an increase in temporal protection by the proposed program's new regulations, not a decrease in temporal protection as is proposed.

Spawning surveys on the Salmon River have located redds as early as September 14 indicating that KTR spring-run Chinook spawning is, at least in some years, taking place prior to mid-September.⁵²

West (1992) recommended "CDFG should consider changing suction dredge operating season for Klamath River tributaries in Siskiyou County (Zone D) to June 15 or July 1 to September 15, to reduce potential impacts to larval steelhead development."⁵³ Combining this earlier recommendation aimed at protecting steelhead with the known dates of spring-run Chinook spawning and fry emergence, *at the very minimum* the Salmon River should not be open to any dredging between September 1 and July 1 (Class B). As stated earlier, the challenge of successfully implementing a program reliant on micromanaging the time, space, and specific methods of suction dredging combined with the likelihood for significant adverse impact and deleterious effect on an already rare population of the last remaining wild KTR spring-run Chinook, the only logical and reasonable method of protecting these fish from harm is to completely close the Salmon River to dredging (Class A).

Further, Dr. Peter Moyle's expert opinion on the potential effects of suction dredging on fishes of the Klamath River and tributaries, provided on behalf of the plaintiffs in *Karuk Tribe vs. California Department of Fish and Game* states⁵⁴:

⁵² Salmon River Restoration Council. 2011. Salmon River Spring Run Chinook Escapement Survey 2010-FISHERIES-FP-07.

<http://www.srrc.org/publications/programs/fisheries/SRRC%20Spring%20Chinook%20Spawner%20Surveys%202010%20Report.pdf>, accessed 4/25/11.

⁵³ West, J.R., O.J. Dix, A.D. Olson, M.V. Anderson, S.A. Fox, and J.H. Power. 1992. Evaluation of Fish Habitat Conditions and Utilization in Salmon, Scott, Shasta, and Mid-Klamath Sub-Basin Tributaries 1989-1991. U.S. Department of Agriculture Forest Service. Klamath National Forest. Yreka, CA. <http://www.fws.gov/yreka/Final-Reports/rmaap/1990-FP-2.21-KNF.pdf>, accessed 4/25/11.

⁵⁴ Superior Court of California, Alameda County, RG0521197) (Moyle, P.B. 2004. Expert Report of Professor Peter B. Moyle, Ph.D. Provided as testimony in *Karuk Tribe vs. California Department of Fish and Game* (Superior Court of California, Alameda County, RG0521197).

“In my professional opinion, the following waters should be Class A (no dredging permitted) waters beyond what is already classified as such:
... Salmon River including the north and south forks and all tributaries.
This designation is to protect the entire suite of Klamath Basin anadromous fishes, especially Coho salmon in the tributaries, spring-run Chinook and summer steelhead in the two forks of the Salmon River, and green sturgeon and lamprey in the main stem salmon.”

Recommendation

Designate the Salmon River as Class A to adequately protect KTR spring-run Chinook and other species, such as steelhead, from temporal conflicts with active dredging and residual adverse habitat impacts that remain following any dredge season.

COMMENT # 27: THE DSEIR FAILS TO IDENTIFY WHAT ENTITY IS CHARGED WITH PROTECTING CULTURAL RESOURCES FROM ‘UNMITIGABLE IMPACTS’ ASSOCIATED WITH DREDGE MINING

Reasoning

Commenters appreciate the thorough description, as developed in *Sections 4.5.1 – 4.5.3*, of the regulatory and environmental settings that accurately contextualize the proposed Suction Dredge Permitting Program. It is clear from both archaeological and ethnographic evidence, as well as from indigenous oral histories, that California prehistory offers irreplaceable resources that are part of our shared heritage.

The *Criteria for Determining Significance* defines three significant impacts: Resources eligible for national, state, or local registers of historic places; unique archaeological resources; and human remains. The document further states that suction dredge mining has the potential to affect significant historical resources, traditional cultural properties, and archaeological resources. Your document recognizes that significant archaeological resources and traditional cultural properties “are located along waterways throughout California,” and may be impacted by this project, and that these resources may also retain the integrity needed for National Register Nomination as addressed in *Chapter 4.5.2 – Regulatory Setting*.

In *Section 4.5.9:27-30*, the DEIR states that “all mining activities have left their mark on the landscape, including river diversions, waste rock and tailing piles, dredge tailings, cut banks, prospect pits, shafts, adits, and water conveyance systems such as dams, reservoirs, ditches, and flumes.” However, the draft language (*4.5.10:17-20*) goes further in acknowledging that “regardless of these natural and human-made disturbances, the state’s waterways remain abundant with both recorded and unrecorded cultural resources, all of which provide a detailed record of California’s rich cultural heritage.” Thus you have clearly established the potential to adversely impact significant cultural resources in the Suction Dredge Permitting Program.

However, Commenters strongly disagree with the Department's findings that such impacts are "unavoidable," and that CDFG has no jurisdictional authority for enforcement or mitigation. Those statements have no supporting documentation. If DFG lacks such authority, it is obligated under CEQA to disclose who does. The DSEIR also suggests that DFG does not have the resources for Native American consultation (4.5.14:1-4). This statement is very problematic. Sovereign tribal governments, such as the Karuk Tribe, must have the ability to negotiate in good faith through formal government-to-government consultation. This consultation needs to be on-going.

Recommendation

The Department should engage in Government-to-Government consultations with Tribes with cultural resources at stake. Prohibit suction dredge mining on all rivers and streams for which the Department cannot affirmatively establish that suction dredging will not cause deleterious impacts to fish. Meanwhile, Department should identify a dependable mechanism by which these resources can be protected. After the Department has gathered sufficient data, if it later determines that certain rivers or streams can be dredged without deleterious impacts to fish, to may amend its regulations pursuant to CEQA and APA to reclassify the respective water body.

COMMENT # 28: THE DEPARTMENT'S RECOMMENDED MEASURES FOR PROTECTION OF CULTURAL RESOURCES ARE INADEQUATE, INEFFECTIVE, AND IN SOME CASES WOULD LEAD TO EVEN GREATER DESTRUCTION OF CULTURAL RESOURCES

Reasoning

The Department suggests providing an advisory informational packet to each suction dredge permit holder to provide "Best Management Practices" guidance that will "include guidelines to minimize and avoid adverse affects...such guidance would only be advisory and would therefore not reduce adverse effects to a less-than-significant level" (4.5.13). Such an approach is likely to encourage rather than mitigate unauthorized looting, and would typically function to identify resources that have been discovered following site disturbance. The information would effectively help permit holders to identify resources in the tradition of "amateur archaeologists," an avocation whose adverse impacts on these resources are well documented by both Native people and the scientific community.

In addition, the Department proposes archival research and "field surveys by qualified archaeologists and/or architectural historians, to determine the location of recorded resources prior to dredging activities, and data recovery and other documentation efforts designed to collect or record the significant data associated with resources" (4.5.13:15-19). This language does not address the unrecorded resources that may be encountered, and suggests "data recovery" as appropriate mitigation for dredging impacts. This also implies that priority would be given to suction dredging, even if potentially significant cultural resources are discovered, and without any professional evaluation of eligibility for nomination to the National Register. The potential for impacts to Traditional Cultural Properties (which may or may not contain tangible cultural resources) is also not addressed.

Recommendations

In the context of cultural resource management, Commenters are uncomfortable with these proposed actions, and the reinstatement of largely unmanaged ground disturbing activity along the Klamath River and its tributaries. Commenters support the following recommendations provided by the Karuk Tribal Historic Preservation Office:

- At a minimum, prior professional archaeological and tribal review and evaluation of all sites to be permitted for suction dredging. This assessment recognizes that many sites are unrecorded throughout California, and maintain both their significance and integrity.
- Funding for such site review to be provided by through Dredge Permit fees.
- Clear provision for enforcement and defined jurisdictional authority.
- All permit holders must be advised of Federal and State laws that govern cultural resources, and the associated penalties for any infractions of those laws.
- All cultural resource information must remain confidential, and not made public. Any associated records, site maps, and associated materials are to be kept in a secure facility – either the appropriate Information Center and/or THPO office.
- Annual review of the program with key stakeholders, including tribal government representatives. Development of a clear and comprehensive mechanism to provide findings and assess impacts, including cultural resource protection and management.

COMMENT # 29: THE SEIR FAILS TO PROVIDE ANY RECENTLY COLLECTED SUCTION DREDGE TURBIDITY DATA FROM 303(D) SEDIMENT LISTED STREAMS ON THE NORTH COAST TO SUBSTANTIATE THE “LESS THAN SIGNIFICANT” DETERMINATION FOR EFFECT OF TURBIDITY/TSS DISCHARGES FROM SUCTION DREDGING (IMPACT WQ-3 SEIR 4.2-28).

Reasoning

The SEIR (4.2-31 lines 39-44) states that “[w]hen the levels of suspended solids (and thus turbidity) become extremely high, they can adversely impact fish and macro invertebrates by making it difficult for sight feeders to locate prey, causing abrasive injuries, clogging gills and respiratory passages, and/or by blanketing the streambed, thereby killing incubating fish eggs/larvae and benthic macro invertebrates (McKee and Wolf, 1963; EIFAC, 1965; NAS, 1972; Alabaster and Lloyd, 1980).” The Proposed Program has a new provision that states “reasonable care shall be used to avoid dredging silt and clay material, the disturbance of which would significantly increase in turbidity.” Dredging into silt/clay stream banks, which is known to occur regularly, is likely to create extremely high TSS and turbidity, but the SEIR conveniently assumes that this will

not happen because “the Program would provide enforceable conditions.” (SEIR4.2-32).

In reality, neither dredgers nor law enforcement officials can reasonably be expected to recognize silt or clay material (less than 63 micrometers) or what “reasonable care” means. A significant effect is certain when stream banks are excavated in conjunction with dredging on small remote Coho streams (e.g., Smith River and Scott River tributaries). Extreme turbidity, exceeding that commonly reported in controlled studies (SEIR 4.2-29 lines 12-15) is likely to occur and have significant impacts of fish.

The SEIR fails to acknowledge that the reason many streams are listed for sediment is because the streambed has a relatively high content of silt/clay. “Reasonable care” could mean no dredging in silt/clay laden 303(d) listed streams. In small, low-gradient streams favored by Coho salmon, dredgers are likely to create extremely high turbidity which could extend very far down the stream. Coho could not avoid the plume in small streams because it would extend from bank to bank. For example, Nawa⁵⁵ reports having to discontinue snorkel counting of juvenile Coho salmon when turbid water from a single suction dredge muddied an estimated 1,000 feet of a small unnamed tributary to Middle Fork Sixes River in Oregon. The entire water column was muddied and the juvenile Coho salmon had no place to escape the turbidity. Assumptions made by the dSEIR about fish avoidance of turbidity would only be valid on larger streams such as the Klamath River.

The dSEIR provides no data about turbidity/TSS measurements in 303(d) sediment listed streams to demonstrate the validity of dSEIR speculation of how dredging would actually affect turbidity/TSS. In the absence of data collected from suction dredgers in 303(d) streams, the only valid assumption is that they would adversely affect fish, especially federally listed Coho salmon.

The SEIR (5-28) fails to explain or provide a scientifically valid reason why the CDFG “believes” that SEIR reported significant cumulative turbidity and significant cumulative discharges (that would appear to warrant dredging closures) are not “believed” to be necessary to avoid deleterious effects to fish. Opinions not supported by facts are not valid.

Recommendation

Ban suction dredge mining in all 303(d) impaired streams until such time that studies can be designed and conducted, data collected and impacts assessed such that the Department has sufficient data to determine that no suction dredging operation will cause deleterious impacts to fish. Once the latter has occurred, the Department should amend the regulations, if the data supports reclassification of the respective streams to allow suction dredge mining to occur.

⁵⁵ Nawa, R.K. 2010. Mining Impacts in the Siskiyou Wild Rivers Area Southwest Oregon. Siskiyou Project. Grants Pass, Oregon.

COMMENT # 30: The DSEIR FAILS TO REPORT OR ESTIMATE THE ACTUAL ANNUAL LOSS OR REDUCTION OF ECONOMICALLY AND CULTURALLY IMPORTANT SPECIES DUE TO SUCTION DREDGING.

Reasoning

The SEIR asserts that economically important and culturally significant species such as salmonids, lamprey, mussels, and sturgeon will not experience deleterious effects as defined in the SEIR (2-4, 5). Impacts to these species are routinely listed as “less than significant” meaning that there is a measurable impact, but the impact is not likely to result in an adverse population-level effect on a particular species (SEIR 4.3-23 lines 16-20; 4.3 pp. 23-26; Tables 4.3-1, 2, 3). Since the impact is measurable, one would expect the Department to have measured it and determined in an analytic manner that it is “less than significant”. The Department has reported no such measurements. The Department has not provided any scientific data about the numeric severity of impacts to species of concern. The Department cannot report how many fish, fish eggs, and mussels the dredgers kill every year, but whatever the number is, the Department can assure the public that it is “less than significant”. The lack of any credible data whatsoever demonstrates that the assertions of “less than significant” for *fish* species are purely speculative and not based on any credible quantitative science. Since the Department has no funds to measure scientifically the fish, fish eggs, and mussels the dredgers are killing directly or indirectly, the dredging must be prohibited in stream areas where economically important and culturally significant species live and breed. The only recent study (Harvey and Lisle 1999) that took a hard look at the effectiveness of protecting spawning salmon from suction dredging with seasonal restrictions found significant lethal effects despite the restrictions.

Recommendation

Prohibit suction dredge mining on all rivers and streams for which the Department cannot affirmatively establish that suction dredging will not cause deleterious impacts to fish. Meanwhile, quantitatively evaluate impacts to culturally important species before considering whether or not dredge mining has a deleterious effect on these species. After the Department has gathered sufficient data, if it later determines that certain rivers or streams can be dredged without deleterious impacts to fish, to may amend its regulations pursuant to CEQA and APA to reclassify the respective water body. .

COMMENT # 31: THE DSEIR FAILED TO DEVELOP A FRAMEWORK FOR ASSESSING CUMULATIVE SEDIMENT EFFECTS ON SPAWNING SUCCESS OF SALMONIDS AND OTHER AQUATIC ANIMALS. ASSUMING THAT STREAMBEDS, REGARDLESS OF CONDITION, ARE SUITABLE FOR DREDGING WILL LIKELY RESULT IN SIGNIFICANT IMPACTS TO AQUATIC ANIMALS CURRENTLY USING DEGRADED STREAM CHANNELS.

Reasoning

The SEIR (Figure 4.3-2) provides a diagram of possible effects but fails to integrate temporal impacts with life history information from affected species. For example, nesting birds such as harlequin ducks that complete reproduction prior to dredging seasons would not be impacted except by Class H streams. Mussels and juvenile lamprey which are in the substrate all year (benthic) would be vulnerable to dredging impacts regardless of dredging season. Dredge tailings are used by spawning salmon whose eggs and alevins can be scoured out at higher rates by subsequent winter floods²². Even in undredged areas, scour and fill is a major factor affecting egg-to-fry survival.⁵⁶ The stability of spawning substrate has been greatly compromised by logging, roads, and mining which have at least doubled the natural rates of erosion and increased fish killing fine sediment.⁵⁷ A cumulative effects analysis for streams would allow some analysis of increased risk to spawning salmon when dredgers work substrates already heavily impacted. For example, the Scott River main stem has extremely high fine sediment content. Standards could be developed that would exclude dredging in substrates already at marginal quality for spawning salmon. Data are available from stream surveys and watershed analyses but were not used in the analysis. A starting point would be 303(d) listed streams for sediment, but the SEIR has inappropriately limited sediment considerations to turbidity with Water Quality alternative (SEIR 6-10 lines 33-39). The more relevant issue for salmon is streambed texture and stability because of findings by Harvey and Lisle (1999). The SEIR has failed to investigate the quality of spawning substrate as it would be affected by dredging. This area of inquiry would be much more relevant to salmon than turbidity.

Another recurring stream deficiency in the Klamath Mountains and coastal streams is high amounts of bedrock in some stream systems impacted by logging, landslides, wood removal, and dredging. Every patch of gravel in bedrock dominated channels is acutely valuable to benthic animals and salmonids. Dredgers would be forced to disturb what little gravel is available or worse they would excavate stream banks for material to sort. Bedrock dominated streams could also be identified and excluded with data available from stream surveys.

Recommendation

Prohibit suction dredge mining on all rivers and streams for which the Department cannot affirmatively establish that suction dredging will not cause deleterious impacts to fish. Meanwhile, investigate and discuss the cumulative impacts of sediment introduction to streams on salmonids and other aquatic animals. After the Department has gathered sufficient data, if it later determines that certain rivers or streams can be dredged without

⁵⁶ Nawa, R.K. and C.A. Frissell. 1993. Measuring Scour and Fill of Gravel Streambeds with Scour Chains and Sliding-Bead Monitors. *North American Journal of Fisheries Management* 13: 634-693.

⁵⁷ Columbaroli, D and D.G. Gavin. 2010. Highly episodic fire and erosion regime over the past 2,000 y in the Siskiyou Mountains, Oregon. *Proceedings National Academy of Science Early Edition*.
<http://www.pnas.org/content/107/44/18909>

deleterious impacts to fish, to may amend its regulations pursuant to CEQA and APA to reclassify the respective water body.

COMMENT # 32: THE DEPARTMENT FAILED TO MAKE A GOOD FAITH EFFORT TO INTEGRATE ASPECTS OF ALTERNATIVES DISMISSED (SEIR 6 P.14-16) INTO AN ACCEPTABLE AND ENVIRONMENTALLY PREFERABLE ALTERNATIVE THAT WOULD FULLY PROTECT ANADROMOUS FISHES WITH CLASS A DESIGNATIONS.

Reasoning

A motivating factor for the SEIR was a legal challenge to the existing permitting program because of impacts to anadromous fish such as federally listed Coho salmon (SEIR 1-1, 2 lines 6-8). First, the Department dismissed alternatives to the Project for reasons that are not supported by fact or law. For example, the Department asserts that its lack of information regarding whether a particular mitigation measure will completely mitigate all adverse impacts is justification for rejecting the mitigation measure and adopting no mitigation to eliminate or even reduce the respective adverse impacts of the activity. The Department's logic is faulty and its reasoning does not comply with either CEQA or Fish and Game §5653, as discussed in Comment No. 1.

In addition, the Department concluded that certain significant impacts were "unavoidable", based on its reasoning described above. However, in fact, the Department need only proscribed a certain river segment or stream as "Class A", mitigating the impact without impacting the project objectives in the least. The Department's failure to adopt such mitigation measures is wholly in violation with CEQA's requirement to adopt feasible mitigation.

Lastly, the SEIR failed to even integrate appealing aspects of dismissed alternatives (SEIR 6 p. 14-17), scoping comments (Appendix C) and Public Advisory Committee Meeting comments (Appendix G) into an alternative that could be supported by commenters. For example, an "Anadromous Fish Alternative" could have been developed which would have provided Class A protection to all streams with federally listed aquatic species (e.g. Coho salmon) as well as unlisted culturally and economically important anadromous species (e.g., Chinook salmon, Pacific lamprey, summer steelhead, green sturgeon).

Recommendation

Prohibit suction dredge mining on all rivers and streams for which the Department cannot affirmatively establish that suction dredging will not cause deleterious impacts to fish. Meanwhile, develop an 'Anadromous Fish Alternative' for evaluation. After the Department has gathered data, if it later determines that certain rivers or streams can be dredged without deleterious impacts to fish, to may amend its regulations pursuant to CEQA and APA to reclassify the respective water body.

COMMENT # 33: THE SEIR FAILED TO PROVIDE MEANINGFUL QUANTITATIVE COMPARISONS BETWEEN THE PROPOSED PROGRAM AND ACTION ALTERNATIVES. QUANTITATIVE PARAMETERS THAT ADDRESS MAJOR ISSUES NEED TO BE INCLUDED IN ADDITION TO QUALITATIVE DESCRIPTIONS.

Reasoning

Comparisons of the action alternatives to the Proposed Program are misleading and confusing (Table 6-1 and accompanying narrative descriptions). Since some streams that were previously closed to suction dredging (1994 SEIR) are now proposed to be open in Proposed Program and vice versa, it is impossible to make an informed choice about which action alternative allows more or less dredging and by how much. No useful quantitative parameter was provided to compare impacts. An obvious metric is stream miles. Stream miles with 2008 high/medium dredging intensity as listed in Appendix F and illustrated in Figure 3-5 would be an appropriate measurement for quantitative alternative comparison. Streams with no use or very low use would need to be excluded or kept in a separate low use category. A spreadsheet that illustrates dredge seasons for high/medium intensity streams and streams with anadromous fish would help readers and decision makers make a more informed decision and highlight specific areas of controversy (e.g., Dillon Creek with summer steelhead would be open to dredging in Proposed Program).

Recommendation

Develop a more reader friendly format for comparing alternatives.

COMMENT # 34: THE SEIR FAILS TO DISCLOSE THAT THE PROPOSED PROGRAM WOULD SUBSTANTIALLY INCREASE INTENSITY OF DREDGING AS COMPARED TO 2000-2008 USE LEVELS.

Reasoning

The Proposed Program would issue up to 4,000 permits which is substantially greater than the 2,500 -3,000 permits issued annually during the period 2000-2008 (See Table 3-1 p.3-3). Intensity of use can be expected to increase from 2008 use levels on high use areas such as the Scott River and Salmon River (Appendix F). Only the Reduced Intensity alternative (SEIR 6-12) can be expected to actually decrease disturbance and damage as compared to dredging impacts during 2000-2008.

Recommendation

The SEIR needs to make a quantitative comparison of the Reduced Intensity alternative with No Program to fully disclose the impact of this alternative.

COMMENT # 35: THE 500 FT. SPACING REQUIREMENT IN REDUCED INTENSITY ALTERNATIVE WOULD BE DIFFICULT TO ENFORCE AND WOULD NOT REDUCE IMPACTS TO SPAWNING SUBSTRATE.

Reasoning

The spacing requirement provides no reduction of known lethal impacts to spawning gravel. Dredgers could simply synchronize dredging up and down the stream and have the same impact on spawning substrate. Spacing could reduce temporary turbidity increases which are generally not lethal or long lasting. In actual practice, this restriction could reduce the ability of one miner to actually run two or more dredges in one location. Experienced dredgers often have an inexperienced friend or spouse accompany them so they can run two or more dredges in the same location.

Recommendation

Re-evaluate benefits of 500 foot spacing requirement.

COMMENT # 36: THE DSEIR PROVIDES NO DATA OR ANALYSIS TO DEMONSTRATE THE EFFECTIVENESS OR PRACTICALITY OF NEW REGULATIONS OSTENSIBLY DESIGNED TO PREVENT SIGNIFICANT DAMAGE TO STREAM HABITAT AND SIGNIFICANT IMPACT TO AQUATIC ANIMALS. IT APPEARS THAT MANY NEW REGULATIONS' PURPOSE IS NOT TO EFFECTIVELY PROTECT AQUATIC ANIMALS BUT RATHER TO RATIONALIZE A "LESS THAN SIGNIFICANT" DETERMINATION.

Reasoning

One of the most important regulations is the prohibition on disturbing stream banks. Despite its illegality, several studies including those by Nawa (2002)⁵⁸ found this to be the most common long-term damage caused by suction dredgers. The "less than significant impact" determinations in the SEIR rely heavily on many new and even more restrictive regulations that have never been implemented. Dredgers would now be required to dredge 3 feet inside the wetted perimeter, as if that would now deter miners from excavating stream banks. If the original regulation had poor compliance, a new and more stringent regulation is not likely to have different results. Table ES-1 identifies 17 new or expanded provisions. Determinations of "less than significant" impacts are directly dependent with compliance on many of these new or expanded regulations.

The SEIR fails to provide any data or analysis of the likely outcome when compliance is less than 100%. As noted in the dSEIR, actual studies and modeling indicate that a single miner in non-compliance with restrictions about mercury could have significant water quality effects. Many new regulations have had no analysis as to their technical

⁵⁸ Nawa, R.K. 2002. Observations of Mining Activities in the Siskiyou National Forest Riparian Reserves and Probably Impacts to Aquatic Organisms. Siskiyou Project. Grants Pass, Oregon.

feasibility and likely compliance (e.g., regulations requiring dredgers to restore the pre-mining streambed grade). In many locations the majority of the tailings will be swept downstream or most dredgers will simply ignore this requirement as has been the practice for decades. Making what is actually a best management practice (BMP) or desirable discretionary action (SEIR ES-8) into a regulation will not make it automatically happen in the real world where fish struggle to survive in degraded streams. Many regulations are actually BMPs and will be interpreted as discretionary by dredgers (e.g., avoid disturbing fish, avoid mussel beds, avoid amphibian eggs, avoid redds, avoid silt/clay etc.). These ethically and environmentally desirable precautions have been made into regulations to support “less than significant” impact determinations. If the dredgers strictly adhered to every regulation as written they would not be able to dredge anywhere in the state. The Department’s Proposed Program, in true bureaucratic form, has created a system where the dredgers will have to violate some obscure regulations so they can dredge somewhere, while the paper regulations they routinely violate will be used by the Department to underwrite “less than significant” determinations. The Commenters view this as simply poor policy development by the Department.

Recommendation

Thoroughly evaluate implications of failure to achieve 100%, 75%, or 50% compliance. Consider and evaluate likeliness of compliance given the complexity of proposed regulations and ability to enforce these regulations given the limited resources of the Department.

COMMENT # 37: THE DSEIR FAILS TO FULLY EVALUATE THE DELETERIOUS EFFECTS OF DREDGE INDUCED TURBIDITY ON FISH

Reasoning

The DSEIR has critical uncertainty whether water quality and fisheries will be protected from increased turbidity (water visibility or measure of light penetration into water). Gregory et al. found that “Salmonid populations not normally exposed to high levels of natural turbidity or exposed to anthropogenic sediment sources may be deleteriously affected by levels of turbidity considered to be relatively low (18-70 NTU). Other studies reveal that “Low levels of turbidity appear to correspond to sediment concentrations that may adversely affect coldwater salmonids (Lloyd 1987).” Bash et al

The DSEIR acknowledges the need to protect streams from increased levels of turbidity, but describes no measurable limits or tangible method of protection for streams where suction dredging is allowed. The DSEIR on page 15 states that “Reasonable care shall be used to avoid dredging silt and clay materials that would result in significant increase in turbidity.” This is a vague statement and not a clear restriction. The statement is simply a “recommendation” for the dredge operator to act in “good faith” to avoid actions causing high levels of turbidity and lacks the measurable elements needed to be an enforceable restriction. Turbidity is typically measured in nephelometric turbidity units or NTU’s and requires specific instruments for measurement in a stream. A much simpler method of assessing turbidity is measuring

the depth of water visibility. However, even this method would be a difficult standard to enforce.

Increased turbidity causes a reduction in juvenile salmon growth and decreases survival. Turbidity downstream of suction dredges operation has been measured as high as 50 NTU's. Juvenile salmon survival is reduced when turbidity measurements are above 20 NTU's. Turbidity limits juvenile salmon's ability to use sight to capture food items; species such as Coho are highly dependent on sight feeding for optimal growth and survival. Increased turbidity also reduces primary production and reduces the basic food supply for salmon and other aquatic animals.

Recommendation

Suction dredging should be prohibited in streams that contain clay and silt deposits so that high turbidity can not be avoided. Where dredging is allowed, a simple method of assessing turbidity levels should be developed which allows for enforcement action.

COMMENT # 38: THE DSEIR IS NOT CONSISTENT OR COMPREHENSIVE IN DETERMINING CLOSURES FOR PROTECTION OF SPECIES LISTED UNDER FEDERAL AND STATE ENDANGERED SPECIES ACT (ESA-LISTED) AND OR BEEN DETERMINED BY ONE OR MORE GOVERNMENT AGENCIES TO BE "AT-RISK" OF BECOMING ESA-LISTED OR GOING EXTINCT. STREAMS WITH "AT-RISK" SPECIES ARE PROPOSED FOR OPEN SUCTION DREDGING.

"Where threatened or endangered species exist, managers would be prudent to assume activities such as dredging are harmful unless proven otherwise (Dayton 1998)."
Harvey and Lisle

Reasoning

The designation of class A streams (year round closures) for protection of sensitive species is justified, but there are inconsistencies in locations where protection is provided. For example; on the Klamath River the DSEIR has closures on most streams with ESA-listed Coho salmon and at-risk summer steelhead, but does not on other streams where sensitive species are found. These stream include; Dillon, Red Cap, Beaver, Cade, China, Fort Goff, Little Grider, Little Horse, King, Portuguese, Stanshaw, Titus, Ukonom, and Walker Creeks.

Dillon Creek is especially of concern because it supports one of the few large populations of summer steelhead in California. At this point it seems inconceivable that California's fisheries resource protection agency, California Department of Fish and Game, would allow suction dredging in Dillon Creek given the rare fishes and known impacts to fish from suction dredging. Dillon Creek was originally closed to dredging under the 1994 regulations specifically for protection of summer steelhead. Furthermore, it was closed to fishing in 1997 for protection of summer steelhead. Since that time, Coho salmon were added to the ESA list for protection.

Recommendation

All streams open in the DSEIR should be reevaluated to determine if sensitive or ESA listed species would be affected and re-classified as closure streams. Specifically for the Klamath River a class A designation should be added to **Dillon, Red Cap, Beaver, Cade, China, Fort Goff, Little Grider, Little Horse, King, Portuguese, Stanshaw, Titus, Ukonom, and Walker Creeks.**

COMMENT # 39: THE DSEIR DOES NOT HAVE RESTRICTIONS THAT LIMIT POTENTIAL FOR NEGATIVE CUMULATIVE EFFECTS WITH RESPECT TO TEMPORAL AND SPATIAL SCALE. SIMPLY, THE DSEIR DOES NOT LIMIT THE NUMBER OF DREDGES WORKING WITHIN CLOSE PROXIMITY AND OVER LONG PERIODS OF TIME. DREDGING IMPACTS SHOULD ALSO BE ANALYZED IN CONTEXT WITH OTHER NEGATIVE WATERSHED IMPACTS INCLUDING REDUCED FLOWS, POOR WATER QUALITY, HABITAT CONNECTIVITY AND HARVEST.

“no research has been dedicated to measuring the cumulative physical or biological effects of many closely spaced dredges. Cumulative effects of dredging and other human activities deserve attention, particularly where reaches are dredged year after year” Harvey and Lisle

Reasoning

The synergistic effects of habitat degradation from multiple sources, including suction dredging, compounds effects on species and puts them more at risk of extinction.

Recommendation

A comprehensive cumulative effect analysis should be completed for each stream or watershed proposed for suction dredging therefore closures could be implemented in accordance with other protection measures such as TMDL's.

COMMENT #40: DSEIR FAILS TO EVALUATE DREDGING IMPACTS ON GREEN STURGEON IN KLAMATH AND SALMON RIVERS

Reasoning

The Karuk Tribal Fisheries Program documents juvenile green sturgeon during out-migrant fish monitoring in the lower Salmon River using rotary screw traps. Trapping has been ongoing since 2001 and juvenile sturgeons are found at the trap almost every year. Adult green sturgeons have been documented in the lower 8 miles of the Salmon River, but are suspected to use higher reaches.

A Salmon River closure would protect green sturgeon that spawn and rear in the lower main stem Salmon River from Freight Train Rapid (RM 8) to the mouth. Green sturgeons enter the

lower Salmon main stem between late February and late July and spawn from March through July (see table below). 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 overwintering 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 main stem would eliminate the risk of entrainment, entrapment, loss of cover, or other deleterious effects of suction dredging on juvenile green sturgeon.

M = spawning migration, S = spawning, I = incubation, E = emergence, O = outmigration, R = rearing																				
	Jan	Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	Nov	Dec
Green Sturgeon		M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M			
							S	S	S	S	S	S	S	S	S	S				
							I	I	I	I	I	I	I	I	I	I				
							O	O	O	O	O	O	O	O	O	O	O	O	O	
							R	R	R	R	R	R	R	R	R	R	R	R	R	

Comments on CDFG Draft SEIR for Suction Dredge Mining Regulations Relating to Freshwater Mussels

COMMENT # 41: THE DSEIR FAILS TO FULLY EVALUATE IMPACTS TO FRESHWATER MUSSELS; DRAFT REGULATIONS FAIL TO PREVENT DELETERIOUS IMPACT ON FRESH WATER MUSSELS

Reasoning

Freshwater mussels, besides providing valuable ecosystem services in freshwater environments are also culturally significant for native peoples in the State of California. This fauna historically formed an important part of the diets and material culture of indigenous peoples statewide, including members of the Karuk Tribe^{59,60}; mussels continue to provide part of the traditional diet for some tribal members in the present day.

There are few comprehensive surveys and little basic knowledge of ecology, life history, genetics, taxonomy, or zoogeography of mussels in the Western United States.⁶¹

⁵⁹ Kroeber, A.L., and S.A. Barrett. 1960. Fishing among the Indians of northwestern California. University of California Press: Berkeley, CA

⁶⁰ Ferrara, J., editor. 2004. Ananakupheekxunnikich: Karuk ethnographic notes as spoken principally by Phoebe Maddux, and heard and written in the years 1926-1929 by J.P. Harrington. Karuk Tribe of California: Happy Camp, CA.

⁶¹ Brim Box, J., J. Howard, D. Wolf, C. O'Brien, D. Nez, and D. Close. 2006. Freshwater mussels (Bivalvia: Unionoida) of the Umatilla and Middle Fork John Day Rivers in Eastern Oregon. Northwest Science 80:95-107.

However, with what little we do know, it is possible for managers to act now to preserve these key components of freshwater ecosystems. It is already known that some Western mussels, including some anodontines and *Gonidea angulata*, are likely to have been extirpated from parts of their former ranges due to human activities.^{62,63} Howard (2010) provided a recent synthesis of historical observations of mussel populations in California. Howard's 2010 synthesis, covering all ecoregions and major drainages in California and including follow-up snorkel surveys of historical sites, concluded that all three genera of Western mussels, *Gonidea*, *Margaritifera* and *Anodonta*, are in decline statewide, with populations completely extirpated from some drainages⁶⁴.

Given the ecological importance of mussels and their declining status, any management action that is likely to disturb mussels or their habitat warrants caution, particularly because there are so few in depth studies—four or five at last count—of how serious benthic disturbances such as dredging could affect mussels. Additionally, none of the existing studies on dredging actually took place in California rivers. In the Klamath River alone, freshwater mussels only emerged as an object of scientific study four years ago. The current regulation to avoid dredging in mussel beds, while well-meaning, does not go far enough to protect these declining species about which we know so little. It will be difficult for miners to comply with this regulation (for those who even attempt compliance) and difficult if not impossible to enforce by The Department.

The DSEIR briefly cites a 2007 study by Krueger *et al.* which studied the short-term effects of suction dredge mining on mussels in two rivers in Washington State, pointing out that none of the mussels in the study died from entrainment in the suction dredge experiments. However, besides this one point which the DSEIR has spun in the favor of dredge mining, CDFG completely fails to note the other major findings of the study, which revealed that, although entrainment alone failed to kill mussels, a significant percentage of mussels used in the experiments died in the process of attempting to excavate themselves from burial in piles of dredge tailings. Krueger *et al.* point out that the study only looked at the effects on mussels over 48 hours and did not investigate long-term mortality. Many mussels used in the experiments, while still alive, had not managed to excavate themselves from the dredge tailings after 48 hours, and the authors note that it is possible these mussels would have died over the longer term. In addition, the authors note that their study was not comprehensive in that it did not investigate the effects of dredging on juvenile mussels, which are presumably more sensitive to the

⁶² Nedeau, E., A.K. Smith, J. Stone, S. Jepsen. 2009. *Freshwater Mussels of the Pacific Northwest*, 2nd Edition. The Xerces Society, Portland, OR.

⁶³ Krueger, K., P. Chapman, M. Hallock, and T. Quinn. 2007. Some effects of suction dredge placer mining on the short-term survival of freshwater mussels in Washington. *Northwest Science* 81: 323-332.

⁶⁴ Howard, J. 2010. *Sensitive Freshwater Mussel Surveys in the Pacific Southwest Region: Assessment of Conservation Status*. Final report. Prepared by The Nature Conservancy for USDA Forest Service, Pacific Southwest Region, 1323 Club Drive, Vallejo, California.

effects of entrainment and burial as they are much smaller and have much thinner shells than their adult counterparts. The Krueger study pointed out that all the mussels that succeeded in excavating themselves from dredge tailings in one river were larger mussels than the mussels in a different river that did not succeed in excavating themselves. This suggests to me that large, old mussels have an advantage in removing themselves from piles of dredge tailings, and that dredging would in effect “select” for larger mussels while killing a percentage of younger mussels through burial—something which could have drastic longer-term effects on mussel populations.

Krueger *et al.* did not study the effects of dredging on thin-shelled species of mussels such as those in the genus *Anodonta*, but only the effects on the (very) thick-shelled species *Margaritifera falcata* and *Gonidea angulata*. Even these thick-shelled species had some difficulty in excavating themselves from dredge tailings, resulting in mortalities. Researchers note that these thick-shelled species can withstand a certain amount of scouring during high flows (Nedeau *et al.* 2009), so it makes sense that they could survive entrainment in a dredge with a quantity of gravel and rubble substrate. *Anodonta spp.*, however, has a much thinner shell and cannot withstand any scouring.⁴⁹ Species in the genus *Anodonta* are currently present in the Klamath, Shasta, and Scott rivers, and it should be noted that one, *A. californiensis*, is a species of special concern in California. Krueger *et al.* also caution that dredging up mussels and burying them or washing them downstream in the current and hence changing the spatial orientation of mussels to one another, could have negative implications for mussel reproduction, which often depends on a specific density ratio of males to females, as well as proximity of one mussel gender to the other⁶⁵

Overall, the DSEIR failed to include the major conclusion of the Krueger study, which was that, because aquatic ecologists currently know so little about the effects of dredging on mussels, managers should use the precautionary principle in dredging regulations.

While *Anodonta spp.* may be more sensitive to entrainment by dredging due to its thin shell, *M. falcata* may be sensitive to burial under tailings due to its noted sensitivity to sedimentation. Vannote and Minshall observed that in the Salmon River, Idaho, which underwent sedimentation in the last century due to large-scale hydraulic mining and other land use practices, the mussel fauna had undergone a community composition shift from a fauna dominated by *M. falcata* to one dominated by *G. angulata*. They noted dead relict beds of *M. falcata* buried under decades’ worth of sedimentation. Their follow-up experiments found *M. falcata* to be somewhat more sensitive to burial than *G. angulata*. This sensitivity to burial and sedimentation suggests that dredging could be proportionally more detrimental to *M. falcata* than to other species.⁶⁶ It should be noted

⁶⁵ Amyot, J.P., and J.A. Downing. 1998. Locomotion in *Elipto complanata* (Mollusca: Unionidae): a reproductive function? *Freshwater Biology* 39: 351-358.

⁶⁶ Vannote, R.L., and G.W. Minshall. 1982. Fluvial processes and local lithology controlling abundance, structure, and composition of mussel beds. *Proceedings of the National Academy of Sciences of the United States of America* 79:4103-4107.

that, at least in the Klamath, *M. falcata* is relatively rare and has a restricted range compared to *G. angulata*. In addition, *M. falcata* may already be more at risk in certain drainages due to its sensitivity to pollution and its need for declining salmonid host fish to complete its life cycle (Nedea *et al.*, 2009).

Any restrictions on mining in mussel beds will be difficult to follow for those dredge miners who actually concern themselves with compliance. Furthermore, how does CDFG propose to enforce the regulation against mining in mussel beds? Will all proposed mining locations be pre-scoped for the presence of mussels by a CDFG agent, or will miners need to follow these regulations on the honor system? Mussels are cryptic and difficult for anyone, including miners, to see, even when located in large, dense, relatively easier-to-observe beds. However, mussels are not always distributed in large, dense, easy-to-observe beds. In the Klamath, Salmon, Scott and Shasta Rivers, mussels are observed frequently, but often not in large concentrations—a sparse, “patchy” distribution. They are difficult to observe under turbid or high water conditions without knowing what you are looking for. The regulation preventing miners from dredging in mussel beds will almost certainly not prevent them from entraining and burying the many sparsely dispersed mussels not located in dense beds on the surface or easy-to-see areas such as sandy bottoms (as opposed to wedged into and underneath bedrock cracks, a popular place for miners to obtain gravels). This includes juveniles, which are almost always buried and near-impossible to see in the field with the naked eye. In the Karuk Tribe’s 2009 study of mussel population age structure in the Klamath River, we found that a large percentage (approximately one-fourth) of freshwater mussels occur beneath the surface of the benthos, burrowed up to six inches into the substrate and not visible to the eye of a trained scientist, let alone a miner.

A recent study by the US Geological Service in California’s South Yuba River found that there is a strong link between suction dredge mining and the release of mercury into the aquatic environment,⁶⁷ which could negatively affect mussels. In areas such as the Sierra Nevada and the Klamath Basin) where historical large-scale hydraulic gold mining washed huge quantities of upslope sediment into the riverbeds, contemporary suction dredge mining disturbs fine particles of sediment that contain mercury (Fleck *et al.* 2011). The mercury gets converted into methylmercury, a highly neurotoxic compound, which then enters the food chain (Fleck *et al.* 2011). Because fine grained sediment is more likely to be carried downstream, disturbance of these kinds of sediment while dredge mining likely increases the concentration and amount of mercury downstream; the researchers found elevated concentrations of methylmercury in invertebrates collected from the study area compared with invertebrates from another site relatively unaffected by historical gold mining operations (Fleck *et al.* 2011). Mussels, as sedentary filter feeders often comprising the majority of the biomass in aquatic ecosystems, would be one of the first organisms to uptake and bioaccumulate methylmercury as it worked its way

⁶⁷ Fleck, J.A., et al. 2011. The Effects of Sediment and Mercury Mobilization in the South Yuba River and Humbug Creek Confluence Area, Nevada County, California: Concentrations, Speciation and Environmental Fate—Part 1: Field Characterization. U.S. Geological Survey Open-File Report 2010-1325A, 104 p.

up the food chain. This is a concern not only for the mussels themselves, but also for the repercussions through the food web for the many organisms, which forage on mussels, such as muskrat, beaver, mink, otters, and humans. Freshwater mussels have been a traditional food item for the indigenous peoples of California including the Karuk Tribe for thousands of years; while historically comprising a significant portion of the diet, they are now consumed by Karuk tribal members around ceremonial times of the year. Potential bioaccumulation of methylmercury in freshwater mussels would be a threat to any tribal members consuming mussels, particularly children, pregnant women, or women about to become pregnant.

Finally, managers should recognize the potential impact of suction dredge mining to mussel fish hosts and their habitat. Mussels use fish as hosts during a parasitic larval stage before metamorphosing into juveniles and dropping to the substrate; they cannot complete this life stage without their host fishes and are sometimes dependent on a certain host species rather than being able to use several species. If dredge mining reduces or degrades habitat for host fishes or causes fish mortality, this could negatively impact mussel reproductive success.

In summary, the many factors that warrant caution against dredging, where mussels are concerned, include: the documented decline of mussel populations statewide, the status of *A. californiensis* as a species of special concern, the known sensitivity of *M. falcata* to the sediment-disruption produced by dredging, the unknown effect of dredging on juveniles or thin-shelled species, the observed mortality by burial of mussels in dredging experiments, the low potential for compliance and enforcement of the proposed regulation, the known detriment to fish hosts by dredging, and the high potential for release of mercury into the aquatic food web. Given these many red flags, it seems prudent at this time to use the little we know to protect mussel populations via banning dredge mining. To benefit freshwater mussels along with all other benthic invertebrates and sensitive fish species in California fresh waters, I highly recommend that CDFG maintain a complete ban on suction dredge mining in streams, rivers and lakes.

Recommendation

Ban dredge mining in all fresh water mussel habitat.

May 9, 2011

Dear Mr. Stopher,

Thanks for taking time to read my letter. My husband and I ran an 8" dredge up Elk Creek, Happy Camp, for 3 years in the late '80s, and lost our permit to the moratorium. What was the harm or emergency that caused Wiggins to wig out? And with an agenda's implementation comes enforcements and complete, unreasonable closure. Not to mention the fact you can not study what is shut down.

Everyone knows dredgers don't kill fish.

Everyone understands that dredge season is not because it is warm, sunny and summer, but it is the best time for the fish cycle.

Everyone knows fishing harms and/or kills fish.

Everyone knows that certain tribes of Indians use fishing "rights" to create conflict with any water user, and I won't expound ad nauseum, greenies love Indian's causes, and anyone walking around in blissful ignorance is usually green.

Everyone knows refiners very much dislike dredgers - dirty water, noisy, inconvenient, working when you are trying to enjoy. We've been harassed by these harmless vacationers. Bet they squawk.

Our Sheriff John Lopey is aware of your far reaching authority and ^{that} coupled with the

unreasonable, mad nature of a deadly blight, ~~that~~ the imposition of this closure has amounted to, he found it necessary to warn us. More to the point_____

California Dept of Fish and Game, through ignorance or design, is complicit in taking the Great Republic of California down, one rural community after another, for any reason or another, to any person—dredger, farmer, fisher, swimmer, rancher, toilet flusher — now that's power.

That's effective! That's what you want to be!

I feel sorry for all of you players.

Everyone knows that what is going on is plain wrong.

All of you should be ashamed.

America — Love It or Leave It

Better Dead Than Red

Taking up the Heel + Cry !!

Anne Walant C₂ Walant

Box 584

Yreka California 96097

530-905-0794

Dredge-in@hotmail.com

050911_WalentW

MARK STOPHER

PLEASE CONSIDER MY COMMENTS ON THE SEIR AND PROPOSED REGULATIONS ON SUCTION DREDGING. I DEPEND ON DREDGING FOR 50% OF MY INCOME, AND IN 30 YRS HAVE NEVER HARMED EVEN 1 FISH OR SEEN FISH EGGS. DREDGES CLEAN THE RIVER BY TAKING OUT LEAD & MERCURY. NO HARM HAS BEEN SHOWN AND THE PEOPLE WHO PROPOSED THE MORTMORIUM SHOULD BE INVESTIGATED. NO PART OF YOUR STUDY WAS DONE WITH DREDGES IN THE WATER, AND DONE WITH CONTRACT ENVIRONMENTALIST, IS THIS LEGAL? WE SHOULD GO BACK TO THE 94 REGULATIONS AND ALLOW WORK OVER RECREATION. IF THIS IS ABOUT FISH THAN WE SHOULD NOT ALLOW THE INDIANS TO KILL THEM AS THEY HAVE NO MORE RIGHTS THAN ANYONE ELSE. WE ARE ALL AMERICANS, NOT SOVEREIGN NATIONS. TOO MANY REGULATIONS ONLY KILLS OUR ECONOMY AND WILL STOP A \$50,000,000 INDUSTRY. YOU AT FISH & GAME HAVE JOB - WHAT ABOUT US? I ALSO HAVE \$20,000 IN EQUIPMENT SITTING AROUND ROTTING - MAYBE THERE WILL BE LAWSUITS AGAINST FISH & GAME TO RECOVER OUR LOSSES. IF YOU GO WITH THE PROPOSED REG, YOU GO AGAINST THE STATE OF CALIFORNIA. YOU CANNOT FAVOR ONE GROUP OVER ANOTHER. PLEASE DO THE RIGHT THING AND LET US, THE MINERS WHO HAVE THE CONSTITUTIONAL RIGHTS TO MINE.

— YOU MUST SHOW HARM —

Wayne L. Walent
Box 584
YREKA CA 96097

WAYNE L. WALENT
Box 584
YREKA CA 96097

Subject: suction-dredging comment

Date: Monday, May 9, 2011 4:59:59 PM PT

From: Gay Wiseman

To: dfgsuctiondredge@dfg.ca.gov

May 9, 2011

To whom it may concern:

I am unhappy to learn that suction-dredging for gold may once again be allowed on California rivers. I wish to make a statement opposing that.

There are several points I'd like to make:

1) Noise disturbance, “noise pollution”—from dredges—negatively impacts people who have to hear it. The vast open spaces in some of our river canyons used to allow the awful motor sound from dredges to carry far, far, from their source machines. I live in a forest 1800 feet above Green Valley, on the North Fork of the American River. There have been times since I have lived here when dredges, active near the Gold Ring Mine on the river below, could be heard way up here on the canyon rim. The sound is nearly as intrusive in a wilderness area as the steady thrumming of freeway traffic, and should not be permitted.

2) Consider who benefits from dredging: a very few miners may glean a little extra pocket money.
Consider who benefits from a clean, pristine, river flow: every living thing within the watershed.
Your responsibility as public servants should be to insure that resources owned in common by the American public are not exploited for the profit of the few.

But much more importantly—

3) Our Earth is a living ecosystem, in which all parts interact. The long-term health of each of Earth's individual components ultimately depends on the health and well-being of the whole. Rivers are part of her circulation system. We must increasingly pay careful attention to all the ways in which we impact the Earth, in order to preserve her health and stability as the fragile base for all known life forms. We need to stop seeing the Earth as a planetary ball of resources for a few short-sighted humans to profit from, sometimes, we learn often too late, at the expense of the entire planet's health.

DISALLOW, permanently, suction-dredge mining on California rivers. Return the waterways to the salmon and the ouzels, and the otters, and all the people who take only blessings away with them from visits to the river.

Gay Wiseman
P.O. Box 255
Dutch Flat, CA 95714

Please visit:

North Fork American River "Book of Days" --
A Compendium-in-Progress, 33 Years of the N. Fk. Writings and Imagery
of Russell Towle,
<http://northforkbookofdays.blogspot.com/>

Staff Report, May 2005, MERCURY LOSSES AND RECOVERY

At the Redding scoping meeting November 18th 2009, I objected to the use of the above document. I stated that it had several substantial flaws and errors within the report. I was assured by Mr. Mark Stopher that the DFG was aware of those flaws. Those errors were apparently overlooked in the preparation of the draft EIR! I once again wish to point out those errors and, demand under the Federal Data Quality Act aka Information Quality Act that the false assumptions made in the DEIR be corrected.

Page 4) “Moreover, an important drawback was that the efficiency of a standard suction dredge at recovering mercury was unknown.” The efficiency of a standard dredge is still unknown! The dredge used for the test was an outdated header box “crash box” design. This design has fallen out of favor due to its poor recovery habits! Moreover, those few that are still used would never be used without miners moss! The header box design would be highly prone to flour mercury. To use this as a “standard” is liable.

The fact that this dredge recovered 98 percent of the mercury is remarkable and, begs the question, what would a properly equipped flair box dredge recover? Would a dual log jet flour less? How much more mercury might be caught is a mercury trap were used?

Page 8 #2) Methlmercury is formed in an anaerobic environment not, an aerobic environment. Any mercury losses from dredging would move the mercury from an anaerobic environment to an aerobic environment.

This report is an interesting experiment but hardly an accurate nor definitive study. It should not be used as a system wide definitive tool! Additionally, the removal and proper disposal of 98% of the mercury should be viewed as more beneficial than leaving 100% in the environment!

Section C (3) list engine manufacturer and model number, and horsepower; if in the course of mining an engine needs to be replaced, do we need to notify the department and amend our permits? Why do you need to know manufacture, and model number?

Section C (e) what triggers the requirement of an On-site Inspection?

Section C (f) When would a 1602 permit be required?

Section C (g) Justify the limit of 4,000 permits. Is that 4,000 resident permits? How many permits were issued for 2012?

Section C (h) allows that the assistant chief of enforcement may, revoke or suspend a permit for past infractions; so an infraction in 2008 may cause a 2012 permit to be revoked at the assistant chief of enforcements discretion or whim! This is unconstitutional!!!

The revocation of a permit for the mere issuance of a citation is unconstitutional. Whether the citation is justified or not seem not to have any bearing on the subject. Whether a person is guilty of an infraction or not seems to be of no consequence either.

Section C (j) Nozzle size; the reduction from six to four needs to be justified. This rule makes my inventory of 5” & 6” nozzles and constrictor rings worthless as well as all the nozzles material over

4"! Are you prepared to purchase my inventory?

Section C (k) You have just made all of our winches worthless; are you prepared to institute a buyback program? Do you have x-ray glasses so we can see witch bolders need to be moved on our 1602 permit?

No justification has been given for closure of the river to within 3 foot of the bank. The 94 regulations restricted dredging into the bank or undermining the bank or destabilizing the bank! This new restriction limits our access to the "Mineral Estate" as granted to us under the 1866 Mining Law and, amended in 1870! The closure of 19 tributaries to the Klamath river alone is again a limit on our access to the "Mineral Estate". You appear to make no provision for compensation on this taking.

Your economic section is inadequate! Perrys market in Happy Camp reported a loss of \$4,000 the month following dredge closures. Every campground along the Klamath is reporting a 70% loss of business. The Hamburg Store has gone bankrupt! The Klamath River and Seiad Valley stores are reporting that business is down 40%. The \$5 an once tax on gold under sumara does not apply to suction dredgers and it is liable to suggest that it does. You have failed to comply with the requirements under CEQIA for economic impacts!!!

You have failed to show that Suction Dredging harms fish!
Reinstate the 1994 regs with no changes!!!

Michael O Adams
1200 Cherry Maple Rd
Horse Creek, CA 96050
496-3346

Joseph A. Albrecht

PO Box 1674, Helendale, CA 92342.... phone: hm 760-952-1057 cell 760-985-5213

May 10, 2011

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

RE: Comments On Use Classifications And Species Closures (228.5(a)&(b))

Dear Mr. Stopher,

There are numerous errors in the Proposed Regulations and the DSEIR regarding the application of Action Species and Use Classifications, thereby closing waters that rightfully should not be closed or restricted.

I will detail specific examples of this problem in the Proposed Regulations and DSEIR later.

But first, let us start out by asking and answering a few basic questions about DFG's use of Action Species.

1. Where does DFG get the authority to close down or restrict dredging in a river or stream occupied by any species that is not listed by the CA EPA or the US EPA as "threatened" or "endangered"?

A: DFG has the authority to prevent 'deleterious' impacts to fish or 'Fish' (in the broader sense meaning all aquatic life). But they do not have the authority to prevent a deleterious impact to every single Fish.

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)

Thus, by DFG's own definition in the DSEIR, they have no authority to protect a single fish or even a community of fish if the impact does not persist longer than

one reproductive cycle. Therefore, short of a species being currently listed as endangered or threatened, it would be hard for DFG to make the case they could restrict dredging based on the localized and temporary impacts of dredging on frogs and toads.

2. If a species is not present in a stream or river is it appropriate to close or restrict it based on old data indicating it was once there, or it could live there if present now?

A: It seems DFGs database is sorely lacking in up to date information on the current location and status of most species of frogs and toads. Many of the distribution maps were created years and years ago, yet they are used as if the species still occupied that stream or river, when it more likely does not, due to extinction in that specific area. This argument is based in the following literature review:

"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)"

Therefore, it being clear to any biologist that species distribution has experienced broad declines across all habitats over the past decade, it would seem prudent for DFG to use more care in selecting which river and stream "sections" need to be restricted. And further, to totally abandon the idea of closing entire waterways, on only the 'potential' for species habitation.

3. If a species does occupy a specific area of a stream or river, does that give DFG the right to close down the entire waterway or just the areas proximate to the species and its useable habitat?

This question speaks to the concept of 'critical habitat' under both the state and federal standard. While most of the Action Species under consideration here are neither threatened nor endangered, it seems DFG is bent on protecting them as if they were. Thus we must look at the definition of critical habitat as it applies to a species already on an ESL.

"The ESA defines critical habitat as "the specific areas within the geographical area occupied by the species, at the time it is listed, on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection; and specific areas outside the geographical area occupied by the species at the time it

is listed that are determined by the Secretary to be essential for the conservation of the species." (emphasis added)

In light of this Federal definition, almost identical to CA's, it would seem that only specific areas can be set aside for protection of a listed species. Those being the areas actually occupied and surrounding habitat. Obviously not the habitat outside the normal movement limits of species. Like an entire river or stream.

4. Should DFG use a shotgun approach to identifying the locations and habitat of these species?

This is a question answered by the ESA which states the designation of critical habitat must be "specific".

From 50 CFR 424.12

(b) In determining what areas are critical habitat, the Secretary shall consider those physical and biological features that are essential to the conservation of a given species and that may require special management considerations or protection.

“(c) Each critical habitat will be defined by “specific limits” using reference points and lines as found on standard topographic maps of the area.

To be clear I do not attempt here to apply Federal rules to this situation. Rather I question the validity of closing entire streams and rivers, or large portions thereof, for protection of a species, where none exists. Or for a species that is not endangered or threatened.

For all the above reasons I request that DFG consider the following recommendations for changes to proposed F&G Code Section 228.5(a)&(b)

Recommended changes to USE CLASS “E”

Class E is proposed as open to dredging from Sept 1st to Jan 31. However, the latest possible hatch for the species *Rana Boylii* (Foothill Yellow Legged Frog - FYLP) is the third week in June. In addition many of these closed waters are above any hydro power dams or other facilities that create widely varying flows in the main stem rivers to which these tributaries connect.

For these reasons it is recommended that Class E be changed to July 1st to January 31st and be applied to the following waters:

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

In as much as there seems no justification or authority for DFG to close vast reaches of waters where no Action Species are known to currently exist, and since many waters have been classified improperly, it is recommended that DFG do a complete review of all Action Species Closures and use all due caution in identifying actual real habitat before closing any waters in CA that do not contain a threatened or endangered species.

It is not the job of the public to do this work for DFG. However, I will not be billing them for my time.

Respectfully submitted,

Joseph A Albrecht

Subject: DSEIR Mistakes and Comments
Date: Tuesday, May 10, 2011 12:07:04 PM PT
From: mojavejoe@verizon.net
To: DFG

Please include the attached 17 page document on Mercury Studies in the record.
Thank you,
Joe

Joseph A. Albrecht

PO Box 1674, Helendale, CA 92342.... phone: hm 760-952-1057 cell 760-985-5213

May 10, 2011

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

RE: DSEIR Comments On Incorrect Collusions Regarding Mercury

Dear Mr. Stopher,

The DSEIR has done a remarkable job in showing how a suction dredge has a Positive Impact on the environment when it encounters Mercury in a stream or river. In doing so it has also shown that the Conclusions regarding Mercury re-suspension are incorrect.

This document will serve to show how:

- 1) The two studies cited in the DSEIR, clearly took the data collected and used it improperly to yield the desired Negative conclusions.
- 2) The studies failed to show any significant impact from dredging, even in two of the most highly contaminated mercury (Hg) hotspots in CA.
- 3) With a recovery rate of 98% as established in Humphreys 2005 for an obsolete crash box dredge, the tailings Hg concentrations are so low as to be lower than even average US soil Hg levels.
- 4) Methylation is already taking place in Mercury hotspots, since the Hg is so prevalent that it is continuously eroded from the banks and the stream beds, even during a moderate stream flow event. But dredges can easily and safely mitigate this problem.
- 5) The real choice to be made by CA is if we want all the Mercury contamination in rivers and streams left there 'forever', or if we want 98% of it removed and have safe concentrations of Hg left behind in its place, forever.
- 6) 99.9% of all streams and rivers in CA would not be even slightly contaminated by dredging where there is no known Hg hotspot.

Definitions and Terms

The following terms will be used frequently herein:

Hg = Mercury (elemental)

MeHg = Methylmercury (already transformed into a bio form)

1 Kg (Kilogram) = 1000 grams = 2.2 pounds.

1 mg (milligram) = 1 one-thousandth of a gram = 0.0000022 pounds

20mg/Kg = 20ppm (parts per million)

What is the maximum level of Mercury allowed in waste according to the CA EPA?
20mg/Kg.

What is the average Mercury content of soil found in the continental US?
20mg/Kg.

How can that be, you may ask? It is true, because the average level of Hg in US soil is what is used as a baseline for acceptable Mercury levels in any waste product going back into the environment in CA. This includes your fluorescent and CFL bulbs at home that your federal government forced you to buy, when they outlawed incandescent bulbs.

As you can easily see.....20mg/Kg of Hg is a very tiny amount. So small it would be difficult to even see. That is the very low and acceptable level of Mercury in CA Hg hazardous waste.

The Basic Problems With The Studies

1. The DSEIR studies used to show negative impact of Hg in dredge tailings were done in a way that does not accurately depict what really happens during dredging.
2. The study data was used in a way that showed super concentrations of Hg in the lab samples, but were not accurately calculated to show the correct Hg levels in the tailings.
3. The studies were done without collecting all the necessary data to draw a relevant conclusion that accurately depicts the true discharge from a dredge.

4. The study conclusions, based on misapplication of faulty data, improperly showed negative impacts where none existed.

The Humphreys Study
(Humphreys 2005)

This study was conducted by the CA Water Boards to assess the potential flouring and Hg discharge levels of HG from a dredge operating in a Hg hotspot near Coloma CA.

The results were published in a Staff Report for the Water Boards in 2005. The field work was done in Sept of 2003 on the South Fork American River, over two days.

Two tests were conducted wherein local HG contaminated material was fed into an operating 4” crash box dredge.

On the first test, called the Efficiency test, the input material was weigh at 63.5Kg.

On the second test, called the In-Stream test, the material was never weighed, but was suctioned off the stream bed for 4 hours and was estimated to be about 4 cu/yds or 5900Kg.

The amount of data revealed in the Staff Report was so limited and fragmented as to make any effort at coming to agreement with the conclusions extremely difficult for anyone reading it. Except for one important thing. Humphreys stated, without reservation, that the dredge tests showed an Hg recovery efficiency of 98%. He then proceeds to try and show how the Hg concentrations of that last 2% leaving the dredge were 10 times higher than safe levels established by the CA EPA at 20ppm.

The end results according to Humphreys for the two tests:

Efficiency test – output Hg level at 240-298ppm

In-Stream test – output Hg level not stated

(probably due to not having collected adequate data)

So Humphreys’ conclusion was that at 240-298ppm, the tailings in the Efficiency test contained Hg levels 10 times higher than the allowed EPA Haz Mat threshold of 20ppm.

The problem arises when Humphreys prepares the tailings samples for delivery to the lab that will do the HG testing. Humphreys sieves the samples down with a 30mesh screen. Thus collecting only the tiny particles in the tailings containing all the Hg, and thereby super concentrating the lab sample. There is not even a mention of weighing the gross tailings sample, or the sample going to the lab.

The lab results come back showing the Hg levels at 240ppm for the larger -30mesh gravels, and 298ppm for the suspended materials that settled out from the sieving water after 1 hour.

Humphreys then publishes these high figures as the HG levels in tailings coming off the test dredge. The problem is they are NOT the levels coming off the dredge, but rather the levels in the concentrated samples he sent to the lab. His numbers disregard the mass of all the material processed by the dredge, and focus on the concentrated HG levels in the concentrated samples.

The only way Humphreys could calculate the true and actual HG levels in the dredge tails would be to weigh his gross tailings sample pre-sieving, then apply the lab Hg amounts in a calculation that took into consideration the entire 63.5 Kg of material processed by the dredge, that went back into the river. Instead he uses the concentrated sample as if it were everything going back into the river, when it was NOT.

One can prove that the Humphreys' high Hg levels are **wrong** by basic calculation to show what really happened. You need only know the limited data provided in the staff report to show that the actual HG discharge levels, after accounting for 63.5 Kg of gravels moved was really 23.4ppm (not 240-298ppm). Barely above the 20ppm safe level.

This is shown using the available data and Humphreys' own 98% efficiency rating for the obsolete crash box dredge.

The calculations to show how this is derived can be found in Appendix A.

Humphreys did not report his tailings Hg levels in the In-Stream test for some reason. Perhaps because he had not weighed any samples to calculate it properly. Or perhaps they were left out for another reason? Let's see.

Using only the basic data and again Humphreys own 98% efficiency rating, it was found that the levels of Hg discharging from the dredge were ... 1.86ppm. That must have been a shocking number to find. Especially for someone expecting to find and prove just the opposite.

The calculations to show how this is derived can be found in Appendix B.

(Side note – It seems quite possible that the reason the Humphreys Study is so fragmented and data limited is because the complete data record would give a positive view of dredging. The only way to find out is review the complete record. To this end, I have made a formal request of CA Water Boards for the complete study record done by Humphreys. I also talked to Rick Humphreys by phone 2 days later about my request, and he agreed to comply with it. As of yet I have received no such requested documentation. Should it arrive in the future, I would be willing to share it with DFG.)

Let us discuss some other important points in regard to Humphreys' study.

1. If you average the two HG levels in the tails of both tests, you get $(23.4+1.86)/2$ or 12.63ppm average HG levels in tails. Mind you, this is for 2 tests with the same dredge in a serious mercury hotspot. And it is barely over half 20ppm.
2. The 20ppm (20mg/Kg) threshold for safe HG levels in waste products comes from the CA EPA. This level was established as safe in CA because it was the average Hg level in common US soil. Here is the exact quote from the CA EPA Mercury Report 2002 cited by Humphreys.

“The STLC was used as a starting point for the TTLC and was initially multiplied by an attenuation factor of 100 to yield 20 mg/kg. This initial TTLC concentration was compared to mercury concentrations found in soils in the Western United States, to concentrations found in the United States as a whole, and to concentrations found in unusually heavy mercury contamination. The TTLC of 20 mg/kg was found to be in within the median range of concentrations found and was promulgated as the mercury TTLC in 1984.”

It is hard to imagine anyone might think it would be environmentally dangerous to place the amount of Hg in common US soil into a stream, especially when it originated in that same stream.

3. What are the options for CA? Leave all the Hg in CA's streams and rivers to be an ongoing threat to the environment forever? Or allow dredging to remove 98% of it, returning only a safe level of Hg back into the waterway. Thereby reducing the environmental mercury harm by a significant measure every time dredging occurred.
4. MeHg (methylmercury) is a big concern these days, as it eventually ends up in some of the fish we eat. What is not clearly understood by most, is that MeHg is not produced by a dredge. MeHg is produced by a biological process in the stream environment. Where it works its way up the food chain to the top (the biggest fish.). The biggest fish. MeHg is being created all the time day and night especially downstream of Hg hotspots like those in Humphreys' study. What is also not well known is that in these hotspots, the Hg levels are so high that Hg migrates down stream and is eroded out of the banks every time there is a slight increase in stream flow, like after a good rain. This is clearly shown by Humphreys, when he makes this observation shortly after dredging stops, in his Staff Report:

“But post dredge test inspections also showed that mercury had re-deposited on bedrock that had been dredged clean. Higher controlled flows may be moving sediment and mercury over the hump but attempts to observe sediment movement directly at higher flows proved too dangerous.”

So once again, CA has the option of letting MeHg happen 24/7 or fixing it for good.

5. There was no study offered in the DSEIR proving that, during a dredge test, mercury was actually being floured by the dredge. In Humphreys, the pre-dredged source material was clearly stated to contain most of the mercury in the -30mesh size, thereby classifying it as “already floured” before it even went into the dredge. Here is the lab quote.

“The sample classifies as a “clean gravel with sand” under Unified Soil Classification System. Visual inspection of size fractions showed that almost all the liquid mercury rested in the fraction that passed a 30-mesh sieve (0.6mm).”

6. No further proof was offered as to floured Hg coming out of the dredge except to say that -30mesh Hg was observed in the tailings. Hardly proof to anyone.

In addition having stated that “nearly all” the Hg in the Efficiency test was previously floured before dredging commenced, and then showing a 98% recovery rate would indicate that the dredge was not only ‘not flouring’ the HG, but was recovering 98% of the floured Hg. The same floured -30 mesh Hg that was a threat in the stream was actually recovered by the dredge. Never to be a threat to CA waters again. How’s that for a success story? It’s hard to imagine anyone thinking that a high rate of floured Hg recovery was a bad thing. Yet somehow that important fact got omitted from the Staff Report too.

7. A final note on efficiency. There is an ongoing Hg recovery and reclamation project underway at Combie Reservoir on Bear River right now. It is expected to take many years to complete. One of the primary goals is removal of elemental Hg from the fine sediments being dredged up and removed. The amazing recovery efficiency of the Pegasus Mercury Extraction Process being used is claimed to be 93%. Here is the direct quote from a project testing abstract.

“The free Hg(0) in the sand size fraction (> 0.063 mm) that was removed by the Pegasus Mercury Extraction Process® represents approximately 93% of the calculated THg in the head material.”

Makes you wonder why they don’t use a jet flare suction dredge and get over 98% efficiency, doesn’t it? And this is a multi agency approved project. (?)

The Fleck Study

(Fleck 2010)

This study was conducted by the USGS et al again to assess the potential flouting and discharge levels of HG from a dredge operating in an Hg hotspot at the junction of the South Fork of Yuba River and Humbug Creek.

The results were published in an Open Report by Jacob A Fleck and Charles Alpers in 2010. The field work was conducted from 2007-2009 in a well known Hg hotspot.

Two tests were conducted wherein local HG contaminated material was fed into an operating dredge, and a prototype booming device (not a dredge) that used recirculated water in a tank.

The first test was performed by doing using a real in-stream dredge with a 3" suction nozzle.

In the second test, Fleck used a prototype booming device (not a dredge) on a dry gravel bar, and a closed circuit water system incorporating a large tank to simulate stream conditions.

In the earlier 2007 dredge study using a real 3" suction dredge under real operating conditions in the river, the test results showed the remarkable efficiency of the dredge to recover Hg, and also showed barely discernable changes in Hg loading in the discharged tails.

However, the study data in Fleck has so many problems with it, one can only surmise that Fleck's conclusions are mere speculation, as they surely could not be considered scientific proof.

One thing is clear though. The real 3" dredge test in Fleck showed the remarkable ability for a suction dredge to recover and hold Hg in its sluice. In this case, a jet flare dredge performed even better than a crash box dredge in a Hg hotspot.

Let's discuss some of the major flaws in the Fleck study.

1. In the actual 3" dredge test, where are the weighed bulk samples of processed material going into or being discharged from the dredge? Without knowing the weight of the processed and sample materials, it is nearly impossible to do anything but guesstimate total Hg levels in the discharge.

2. Fleck attempts to quantify the dredge test Hg levels in the tails by taking several small discharge samples, but he has to obtain results by measuring in nanograms not milligrams. His highest sample reading for tails Hg levels was 83ng/g. Not mg/Kg as in 20mg/Kg. 83ng/g is 0.000083mg/g. When expressed in Kg's that number would be 1000 times higher, but still only .083mg/Kg. Far below CA limits for Hg waste. (See Appendix C for Table 5 extracted from the Fleck study, showing THg levels in samples taken.)
3. In the second test Fleck attempts to use a prototype device incorporating a recirculating water tank system to simulate actual dredge conditions in a stream. He does not use a sluice, so he does not have a way to assess the recovery potential of a real suction dredge. (See Appendix D for picture of prototype.)
4. The suspended sediments in this closed prototype system are being repeatedly put through the pump impeller further fracturing them to create even smaller particles. The suspended sediments and any Hg were subjected to such high pressures inside the pump as to invalidate any testing of this processed material. This is because a real dredge does not send 'any' part or fraction of the sediments processed through the high pressure pump. Rather, they go through a relatively low pressure system in the jet tube and sluice box.
5. Further, the implication that dredge tailings sediments remain suspended in the water column for 40hrs or more cannot be proven by the prototype test for all the reasons mentioned in 4 above.
6. Despite all the hard work of setting up the tests in Fleck in a remote location, no scientific proof of any harmful levels of Hg contamination was actually shown using a real dredge in a stream. Simulating a dredging operation as was attempted in Fleck is grossly inadequate for representing the true conditions under which suction dredging is conducted.
7. No hazardous levels of Hg discharge were shown by Fleck in his study, yet he attempts to make the argument in his conclusions that suction dredging creates a mercury problem for the environment.

SUMMARY

Neither Humphreys nor Fleck were successful in showing suction dredging does anything but put safe levels of Hg back in the stream after removing nearly all (98%) of the Hg encountered, including floured Hg.

The testing, sampling and calculation methods used led to the misapplication of the CA Haz Mat Standard for safe Hg levels in waste, set at 20ppm.

The very small and safe levels (<20ppm) of Hg actually being returned to the streambed are even lower than the Hg found in common US soil, rendering the tailings virtually harmless.

Methylmercury is not created by a dredge. Methylmercury is only created when mercury reaches the exactly right biological stream conditions to cause methylation. Before that occurs there are several ways Hg is more likely to be put out of play for MeHg formation. It is important to remember mercury and methylmercury exposure to sunlight (specifically ultra-violet light) has an overall detoxifying effect. Sunlight can break down methylmercury to Hg(II) or Hg(0), which can leave the aquatic environment and reenter the atmosphere as a gas. But before that even happens, the tiniest particles of Hg are more likely to settle out and be captured deep in the crevices in sediment gravels and bedrock, or even be diffused by the water column. Every particle of Hg in the water system does not turn into MeHg. Considering how small the amount of Hg leaving a dredge really is, it seems MeHg should not be that big a concern if it can be dramatically reduced by eliminating nearly all the source Hg in an Hg hotspot. In any other place, Hg discharge would likely not even be measurable, since there would be little or no Hg present. MeHg is forming all the time downstream of hotspots due to surface migration of free Hg in the stream or river. The only options are to leave it there forever, or remove it safely and permanently using a gold suction dredge.

CONCLUSIONS

After seeing the remarkable HG recovery efficiency (98%) of an old crash box dredge, proven by a CA Water Boards Study done in 2003, and knowing that the modern jet flare dredge is even more efficient at catching heavy metals, the path forward for CA mercury remediation should be to encourage dredging in Hg hot spots. Get all the accessible mercury removed from the streambed and be done with it as soon as possible. In doing so, all of CA's fish and other related species, as well as man, can move forward to a cleaner environment in the decades to come.

Considering the efficiency of suction dredges, is it even necessary (?) to explain how the remaining 99.9% of CA streams and rivers that are not impacted with HG hotspots would never come even close to causing an Hg discharge problem with a dredge?

Dredges do not create MeHg (methylmercury).

RECOMMENDATIONS

In light of all the above Positive Impacts of suction dredging, even when done in an Hg Hotspot with an obsolete crash box dredge, DFG has no alternative but to change the DSEIR classification in Chapter 6.2.3 for “Re-suspension of Mercury” and it’s “Cumulative Impacts” from “Significant And Unavoidable” to “Less Than Significant”.

In addition, it is recommended that DFG, CA Water Boards, the USGS and/or EPA do a “real dredge” test in an Hg hotspot using a modern jet flare suction dredge with all the appropriate scientific testing procedures set up downstream and upstream for water quality monitoring etc. Then get an experienced dredger to operate the dredge the way it was designed, for recovery of even the smallest particles of heavy substances. It is common for dredges of the flare jet design to retain particles under 100mesh in size. What do you suppose that would do to Hg recovery efficiency? I would guess you could be looking at over 99% recovery of Hg, floured coming in or not. Talk about your environmental clean up project....that would be the ticket!

Respectfully submitted for your consideration,

Joseph A Albrecht

(attachments: Appendices A,B,C,D – 7 pages)

Cited Literature:

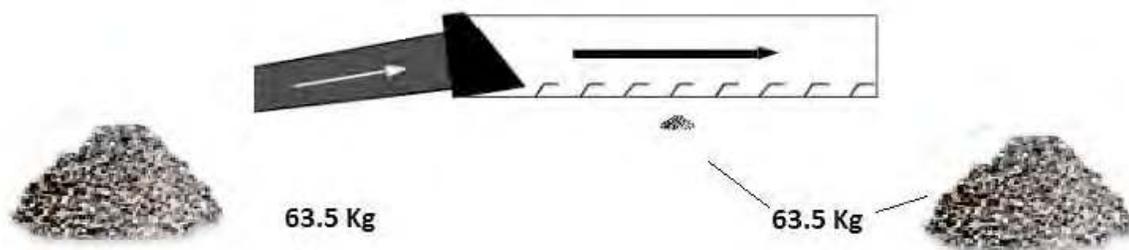
Study - Humphreys 2005

Study - Fleck 2010

CA EPA Mercury Report August 2002

Combie Reservoir Reclamation Project – Abstract

APPENDIX A



(HUMPHREYS 2005)

4" DREDGE EFFICIENCY TEST (not the in-stream test the day after)

The following analysis will show that the Humphreys study for the CA Water Boards which concluded there was a 240ppm HG load in the dredge tailings, is incorrect and too high by a factor of 10.

What is known:

63.5Kg of source material was used in the efficiency test.

The source material was tested to have a 1170ppm (mg/Kg) Hg load.

The Hg concentrations of the dredge recovered material, and the tailings, were offered. But since there were no total mass weights for each segment or the samples taken, those numbers are mostly useless. Here they are anyway:

Dredge Concentrates = 1550ppm HG, and Tails Concentrates = 240-298ppm

The dredge used is said, by Humphreys at the end of his study, to be 98% efficient at recovering Hg.

What can be calculated:

To calculate the total source Hg load (100%)
You need only do the math.

$63.5\text{Kg} \times 1170\text{mg/Kg} = 74295\text{mg}$ Hg in the entire 63.5Kg source material to be used.

Considering a 98% efficiency rating for the dredge
Only 2% of the total Hg load will go out in the tails.

Therefore

$.02 \times 74295\text{mg} = 1485.9\text{mg Hg}$ in the tails

To find the Hg concentration divide by 63.5Kg, the total of material amount processed and returned to the river.

$1485.9\text{mg}/63.5\text{Kg} = 23.4\text{mg/Kg (ppm)}$

These figures show that the actual Hg discharge at this hotspot (using Humphreys' 98% recovery efficiency rating for his dredge) was actually only 23.4ppm.

This is barely above the Hg levels in average US soil, at 20ppm, which is also the CA Haz Mat std for safe Hg waste disposal.

So if a dredge removed 98% of elemental (and floured) mercury in Humphreys' test of a mercury hot spot, and the dredge puts out Hg levels barely higher than average US soil levels, it would seem prudent to have dredgers removing 98% of merc from the soil so it cannot migrate downstream in the next moderate flow event, this year.

While methylation might occur from some of the tails, the amount of Hg that would be available to methylate would be dramatically lower, from the dredge than from natural bank and streambed erosion. The bank material that erodes and moves down the stream bed is 50 times higher in concentration than then the dredge tails.

What would be best to have in a river? The CA Haz Mat safe level is 20mg/Kg. The bank material is 1170mg/Kg. The dredge tail are 24.3mg/Kg. If you were trying to reduce methylation wouldn't you choose the lower level of contamination, while permanently removing 98% of the contaminant forever? Your streambed Hg contamination choices:

1170 ppm or 23.4 ppm (CA says safe at 20mg/Kg)

The next time this same 2% Hg material is processed by a 2nd dredger, the amount in the tails drops another 98%, bringing it down to 2% of 23.4 ppm or .468ppm.

To show that the HG is already on the surface and migrating downstream, consider this statement from Humphresy 2005.

"But post dredge test inspections also showed that mercury had re-deposited on bedrock that had been dredged clean. Higher controlled flows may be moving sediment and mercury over the hump but attempts to observe sediment movement directly at higher flows proved too dangerous."

Check above figures:

If 23.4mg/Kg = 2% Hg in 63.5Kg
Then 100% in 63.5Kg = $50 \times 23.4 \times 63.5 = 74295$

Meaning 74395mg of Hg were in the source material that yielded 23.4mg/Kg in 2% loss.
Correct!

CONCLUSIONS-

All the above figures are based on a Mercury Hotspot with Hg levels that are 58 times higher than CA Haz Mat Hg safe levels for waste.

So your choice is, live with the 58 times than safe Hg levels in the stream, which will be moving and methylating forever.....

OR,

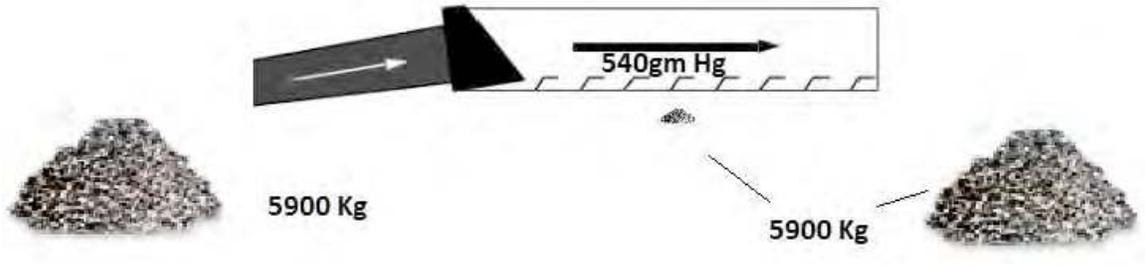
Allow dredging and end up with 1.17 times Hg safe levels in the dredge tailings.

Should be an easy decision for any Hg hotspot.

THIS IS NOT EVEN A FACTOR in the other 99.9% of CA streams that contain not even half of the vey high Hg concentrations found in the Fleck and Humphreys study locations. Meaning, the HG levels in 99.99% of all dredge tails would be less than half of 23.4, putting the dredge discharge well below the CA Haz Mat std of 20ppm. More likely it would be <1ppm in all other rivers/streams.

Thus in 99.99% of all other CA streams and rivers there could not possibly be **any** HG discharge levels that were higher than average US soil levels of 20mg/Kg, or 20ppm.

APPENDIX B



(HUMPHREYS 2005)

IN-STREAM 4" DREDGE TEST (not the efficiency dredge test the day before)

What is known:

540gm of Hg were captured during a 5900Kg in-stream test.

That 540gm of Hg represents 98% recovery of the source material Hg load.
(98% according to Humphreys' concurrent efficiency testing results in the same area.)

What can be calculated:

Thus to calculate the total source Hg load (100%)
You must find the value for "x" which = 100% of Hg

$$540/98 = x/100, 98x = 5400, x = 5400/98$$
$$x = 551\text{gm total Hg in source material}$$

Now find the 2% lost in tails
 $.02 \times 551\text{gm} = 11.02\text{gm}$

Convert to mg
 $11.02\text{gm} \times 1000 = 11,020\text{mg}$

Convert to ppm (mg/Kg)
 $11020\text{mg} / 5900\text{Kg} = 1.86 \text{ ppm (mg/Kg)}$

The CA Haz Mat Hg safe waste maximum is 20ppm.

The tails Hg levels were only 1.86ppm or less than 10% of the 20ppm safe levels, and also less than 10% of average US soil levels which are also 20ppm.

This test was done looking for mercury puddles to dredge.
Study quote:

“Team members used special care to find and dredge large liquid mercury droplets as well as mercury-laden sediment from the site.”

What we learned:

The entire 5900 Kg of source material contained 551gm or 551000mg of Hg (100%)
The dredge caught 540gm or 540,000mg of Hg (98%)
The tails contained 11.02gm or 11,020mg of Hg (2%)

11,020mg in 5900Kg of material processed equals
 $11,020\text{mg}/5900\text{Kg}$

Which means tails had Hg content of

1.8ppm (mg/Kg) well below the 20mg/Kg CA Haz Mat Hg waste limit.

APPENDIX C

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 [†]	95.42	0-2	137	0.022	0.016	1.16	0.84
Concentrate	< 1.0 mm [†]	95.35	2-3	211	nd	nd	1.24	0.59
Concentrate	0.063 to 1.0 mm [†]	95.65	0-2	4,570	< MDL	< MDL	0.93	0.02
Concentrate	0.063 to 1.0 mm [†]	95.70	2-3	10,300	nd	nd	1.66	0.02
Concentrate	0.0003 to 0.063 mm [†]	0.23	0-2	14,300	1.1	0.008	83.2	0.58
Concentrate	0.0003 to 0.063 mm [†]	0.36	2-3	3,210	0.92	0.029	28.3	0.88

[†] Concentrate samples pre-sieved through 20-mesh screen.

APPENDIX D



Figure 11. Photographs of recirculation-tank experiment, (A) Filling with water from South Yuba River and taking "tank blank", (B) taking "first flush" sample, (C) using venturi pump to extract sediment from bottom of Pit 1, and (D) tank after approximately 40 hours of settling.

Joseph A. Albrecht

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May 10, 2011

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

Subject: DFG May Be Exceeding Their Authority And Legislative Intent

[The term 'fish' as used herein has the broader meaning to include fish, amphibians, invertebrates etc.]

Mr. Stopher,

It was clearly not the intent of the Legislature, in granting regulatory authority to DFG, for that agency to prevent any impact whatsoever to any “single fish or individual fish population”.

To the contrary. One of DFG's stated “...basic Program objectives...” is “...fulfilling the legislative intent of the regulation, which does not appear to consider 'deleterious' to mean an impact to a single fish or individual fish population”

The above quotes were taken directly from a section of the DSEIR known as, Chapter 6 – Alternatives, Page 6-15 & 6-16, which is below quoted in its entirety. [underlining added for clarity]

6.4 Alternatives Considered and Dismissed

“Only allow suction dredging in areas with no potential to have deleterious impacts to a single fish or individual fish populations. This alternative was dismissed from further analysis as it does not meet the basic Program objectives of fulfilling the legislative intent of the regulation, which does not appear to consider “deleterious” to be an impact to a single fish or individual fish population. If implemented, this alternative would likely preclude all suction dredging in the state.”

If it were the Legislature's intent to have DFG protect every “fish or single fish population” in a given area, it would clearly be ‘deleterious’ for fishermen to catch fish,

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Mark Stopher
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by any means, under authority of a fishing license issued by DFG. Or, for fishermen to wade along the edge of streams, killing fish eggs, and disturbing juvenile fish and their habitat.

Yet, the Proposed Regulations attempt to prohibit suction dredgers from having a 'deleterious' effect on whole river/stream populations of fish by stopping dredging through a new Class A designation on hundreds more streams and rivers. In addition, they seek to ban dredging in the 3 foot perimeter of every stream in the state.

Further, the new prohibitions on such things as a 4 inch maximum nozzle size, dredging within three feet of a bank, or power winching boulders in a stream, indicates DFG's clear intent to reduce the amount of silt produced by dredging. Using DFG's obvious presumption that silt is bad for streams, and considering the massive amounts of silt pushed into streams by natural rain events many times each year, every stream in this state would be dead and barren of any life. In comparison to nature, the impact of dredging silt up from any part of a stream bed would be miniscule if even measurable, especially since dredging is an irregular and short period event, only happening a few hours a day, causing a silt plume that might travel down stream several dozen yards at most. As such, it is not possible, nor supported by the DSEIR, that such a naturally occurring stream impact as 'temporary silt suspension' being occasionally caused by dredgers could cause a 'deleterious impact' (if one could even be proven) to anything greater than a "single population of fish".

If silt were not a beneficial impact to streams and rivers, why do our streams and rivers thrive despite it. Why do waterways survive frequent natural events causing hundreds of tons of suspended silt to go coursing down them for miles and miles, 24 hours a day, for many sequential days after a storm? Answer...Silt is beneficial to streams and rivers.

Finally, the number of available days to dredge in many rivers and streams has been severely cut back or changed from the 1994 Regulations. Has the breeding cycle of fish or amphibians changed that much in only 17 years? Or, is DFG once again attempting to protect whole fisheries in an entire stream with a broad new restriction? Despite the fact that the localized effect of dredging has never been proven to cause any significant 'deleterious' impact to any "individual fish population" in the immediate area of dredging activity?

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Conclusions -

- In writing the new regulation sections 228-228.5 the DFG has gone way beyond legislative intent, which was merely to protect all species of fish statewide, in the general sense.
- In DFG's own words in the DSEIR "the legislative intent.....does not appear to consider "deleterious" to be an impact to a single fish or individual fish population."
- Further from the DSEIR Chapter 6.2.1, it is DFG's stated Obligation to "...protect, and manage fish, wildlife, native plants, and habitats necessary for biologically sustainable populations of those species....." This program objective does not provide DFG with a mandate or the authority to protect every fish of any kind, in every foot of every river or stream it may happen to live in, but merely provides for "biologically sustainable populations".

Therefore, until the DFG can provide actual scientific evidence that dredgings' temporary and localized impact does have a "deleterious" effect on more than an "individual fish population" in a specific area, the proposed regulations, in the majority part, are not supported or legally warranted.

Considering all the above, it is recommended that DFG drop these proposed new regulations:

Section 228(g) 4000 maximum annual permits.
Section 228(j)(1) Maximum nozzle size 4 inch.
Section 228(k) No motorized winching under standard permit.
Section 228(k)(3) No dredging within 3 feet of the bank.

Or, in the alternative choose the "1994 Regulations Alternative."

Respectfully submitted,

Joseph Albrecht

Subject: (none)

Date: Tuesday, May 10, 2011 4:39:32 PM PT

From: Richard Axton

To: dfgsuctiondredge@dfg.ca.gov

Thanks for agreeing to do this.

You need to send the letter to dfgsuctiondredge@dfg.ca.gov

Type in the subject line Suction Dredge Program Draft SEIR Comments

Then copy and paste this letter & send it. Thanks Carolyn

As a lifelong Siskiyou County resident and coming from a family of gold miners with roots back to 1852 I was greatly disturbed to find out that CDFG is in the process of eliminating or curtailing gold dredging to such a degree that it will be impractical to do so in the future.

First in your unreasonable proposed regulation is to limit dredge size to 4". Anyone who has ever dredged knows that you can't make money with such a small rig except in small creeks which you have determined to be closed waters. On the Salmon River a miner needs at least a 6" dredge in order to make any money.

Next, you eliminated power winches. Working without a power winch is like working with one hand tied behind your back i.e. totally inefficient! This rule change is completely unnecessary.

Then you want to limit the number of dredge permits to anywhere between 1,500 and 4,000. Again this is unreasonable and unnecessary. What happens when my family members from back east come out on vacation and would like to do some dredging? They'd be out of luck as the permits would probably be sold out.

There are a number of other regulation changes that serve no other purpose except to harass miners.

Let's keep the 1994 regulations and don't close any creeks and rivers or parts thereof. Also open up the dredge season to start on June 1st.

Forget the idea of having to list dredge sites and dates in advance. A person can't predict where the gold will be. Also, forget the idea of having to list equipment used because breakdowns do happen and different equipment would be used. Having to notify CDFG of that is inconvenient and time consuming at best.

CDFG should make life easier for miners and not throw so many obstacles in their way.

Peggy Axton

890 Sawyers Bar Road

Etna, CA 96027

SUCTION DREDGE PERMITTING PROGRAM
Draft Subsequent Environmental Impact Report (DSEIR)
Comment Form

Name:	Julianne Babaoka
Mailing Address:	1007 Oakhurst Way Stockton, CA 95209
Telephone No. (optional):	
Email (optional):	jbabaoka@gmail.com

Comments/Issues:	<p>Having been unemployed for the last 4 months prospecting for gold has become a way to spend my time providing a livelihood. Panning by hand and/or with a sluice box is much less time-effective as mining with a dredge. Dredging also provides a less laborious effort to mine for gold for the elder members of our club. Only after experiencing an outing with the Delta Gold Diggers did it become evident how financially helpful prospecting for gold is for those of us who are unemployed. An added benefit that I personally witnessed on such outings was an environmental awareness by the club. Each member takes great care to pack all the trash within sight out of the area not including the junk that we find while digging. Gold panning has not only positively affected my life, but has taught me another resource provided by my home in CA.</p> <p align="right"><i>Julianne Babaoka</i></p>
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Please use additional sheets if necessary.

SUBMIT WRITTEN COMMENTS (POSTMARKED BY 05/10/11) TO:

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

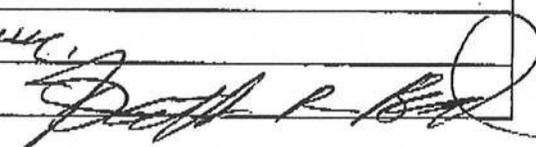
Email: dfgsuctiondredge@dfg.ca.gov

Fax: (530) 225-2391

Questions? Please call us at (530) 225-2275 • More information: www.dfg.ca.gov/suctiondredge

SUCTION DREDGE PERMITTING PROGRAM
Draft Subsequent Environmental Impact Report (DSEIR)
Comment Form

Name:	LOW BEARD
Mailing Address:	9927 RIVER VIEWS CIRCLE
	STOCKTON, CA 95209
Telephone No. (optional):	
Email (optional):	K9RONY@GMAIL.COM

Comments/Issues:	
	I HAVE NEVER USED A SUCTION DREDGE; HOWEVER, I HAVE BEEN INTERESTED IN USING THIS OPERATION WHILE PROSPECTING. I WAS DISAPPOINTED TO LEARN IT WAS OUTLAWED IN 2003. FROM MY PAST EXPERIENCE IN WATCHING A SUCTION DREDGE IN OPERATION, I HAVE SEEN THEM EFFECTIVELY CLEAN THE SINK MATERIAL OUT OF OUR WATERWAYS.
	I AM WRITING THIS TO VOICE MY CONCERN, AS A CITIZEN AND PROSPECTOR, THAT THE STATE OF CALIFORNIA IS LIMITING MY SECONDARY EMPLOYMENT - PROSPECTING/MINING.
	PLEASE RECONSIDER YOUR BAN & RE-LEGALIZE SUCTION DREDGING IN THE STATE OF CALIFORNIA!
	RESPECTFULLY, 

Please use additional sheets if necessary.

SUBMIT WRITTEN COMMENTS (POSTMARKED BY 05/10/11) TO:

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

Email: dfgsuctiondredge@dfg.ca.gov

Fax: (530) 225-2391

Questions? Please call us at (530) 225-2275 • More information: www.dfg.ca.gov/suctiondredge

Subject: Canton Canyon 4" Dredging ?
Date: Tuesday, May 10, 2011 11:20:50 AM PT
From: Eugene Beley
To: dfgsuctiondredge@dfg.ca.gov

Hi Mark,

We met at the Santa Clarita, Public Comment Hearing on March 23rd in regards to the Suction Dredging Program Comments. After the meeting we were able to talk about the possibility of using a 4" dredge after a rain storm at a claim of mine located at Canton Canyon, Los Angeles County. The Claim is several hundred yards from any main water flow and the water that runs through the Canyon dries up completely during the summer months.

There are no fish or frogs because of the lack of water through out the year, this location Canton Canyon is not part of the dredging restrictions on the Preliminary, Proposed Amendments To Regulations on suction dredging.

With the scenario above you mentioned that there should be no reason or problem dredging with a maximum of a 4" dredge when the new dredge permits come out.

The Claim name is Vilda Hiya Claim # CMAC0295360
Los Angeles National Forest/Los Padres National Forest
Sections: 11 and 14
Township: 5n
Range: 18W
Meridian: SBM

The link below shows the approximate center of the claim.

http://www.bing.com/maps/?v=2&cp=prk29d535s1n&lvl=14&dir=0&sty=b&sp=Point.prn0ft534zpk_About%20center%20of%20Vilda%20Hiya%20Claim_About%20center%20of%20Vilda%20Hiya%20Claim_http%3A%2F%2Fwww.bing.com%2Fmaps%2F%3FFORM%3DZ9LH4

Thank You Mark,
I'm looking forward to your response and getting a new dredge permit in the near future.

Eugene Beley
20648 Bassett street
Canoga Park, CA 91306
Cell 1-818-378-8928

Bureau of Land Management Comments to California Department of Fish and Game's Draft Subsequent Environmental Impact Report and California Environmental Quality Act Process Regarding the Proposed Revised Suction Dredging Regulations

The Bureau of Land Management (BLM) offers the following comments/recommendation to California Department of Fish and Game (CA DF&G) Draft Subsequent Environmental Impact Report (DSEIR) and California Environmental Quality Act (CEQA) Process Regarding the Proposed Revised Suction Dredging Regulations.

The following comments/recommendation reflect BLM's multi-use land management mandate; specific programs include: biological resources/habitat conservation, National Landscape Conservation System/Wild and Scenic Rivers, Abandoned Mine Lands/Hazardous Materials, Mining Law/Surface Management, BLM's comments are categorized as General Comments, Specific Comments and Species/Location/Season Specific Comments.

General Comments

- BLM is charged with implement and enforcing federal laws, regulations and policy on public lands. Federal standards may differ from California standards with respect to law such as the Endangered Species Act (ESA) and the Clean Water Act (CWA). BLM comments that the revised Suction Dredging Regulations (RSDR) should inform/encourage suction dredge operators to review federal laws/regulations prior to operation start-up on public lands.
- BLM believes suction dredge operators should be responsible for providing their project information necessary for all applicable agencies to monitor compliance the suction dredging operation. Current suction dredging regulations do not provide the location, land status/ownership or dredge size. Subject information should be conveyed to the respective land management agency(s).
- California Department of Fish and Game (CA DF&G) should provide illustrative maps depicting specific locations/water ways with applicable restrictions regarding closures and seasonal and dredge size restrictions
- BLM has a number of public lands that are withdrawn from mineral entry including operations authorized by The Mining Law of 1872. BLM comments that the RSDR should inform/encourage suction dredge operators to research land status to assure legal access and avoid trespasses prior to entry.
- The Bureau of Land Management (BLM) does not have an MOU or any other agreement relative to suction dredging operations on public lands in California. A suction dredge operator must contact BLM before beginning a suction dredging operation, regardless of

the size of the dredge, intake hose or engine size, to determine whether the operation may be considered casual use or if a notice or a plan is required.

- In order to occupy the public lands under the mining laws for more than 14 calendar days in any 90-day period within a 25-mile radius of the initially occupied site, you must establish a need for occupancy and be engaged in activities Those activities that: 1) are reasonably incident to mining related activities 2) constitute substantially regular work, and 3) are reasonably calculated to lead to the extraction and beneficiation of minerals.
- To assure compliance with federal law, prospective mine operators and prospectors locating mining claims on conducting mining related activities on public lands in California are encouraged to read and become familiar with the use/occupancy and surface management regulations for operations authorized by the General Mining Law of 1872; Title 43 Code of Federal Regulations (CFR) subsections 3715, 3802 and 3809. The intent of BLM's multiple use and surface management regulations relative to the Mining Law are implemented to prevent unnecessary or undue degradation of public lands.

Specific Comments

- Comment Page 4.2-3: The DSEIR discussion on Clean Water Act sections 401, 402 and 404 is not clear regarding possible permitting requirements supplemental to the CA D&FG-issued suction dredge permit. That is, will the permit holder also be responsible for securing a section 404 permit, a section 401 certification, and a National Pollution Discharge Elimination System (NPDES) permit under section 402? If so, case law would suggest a section 401 certificate is only required if a point source discharge of pollution is caused (see *Oregon Natural Desert Assn v Dombeck 1998* and *Greater Yellowstone Coalition et al v Larson 2010*).
- Comment Page 4.2-54 and Pages 4.3-23 through 4.3-47: The DSEIR identifies "Significant and Unavoidable" impacts associated with mercury resuspension in the water quality section of the analysis based, in part, on bioaccumulation of methylmercury in fish, aquatic invertebrates, and other aquatic-dependent fauna. Yet, the conclusions reached for species impacts in Chapter 4.3 are "Less than Significant." Chapter 4.3 analysis should clearly explain why these two seemingly opposing conclusions can be reached.
- Comment Page 4.3-3: The DSEIR discussion on section 7 ESA consultation is unclear as to if and when section 7 consultation with a federal agency would occur. It suggests the BLM may further regulate or manage suction dredge activities beyond the permit conditions issued by the State. If so, what is the mechanism to implement any reasonable

and prudent alternative with implementing terms and conditions that may be part of a biological opinion? The DEIR language may mislead the permit holder into thinking their activity is compliant with the federal ESA, when in actuality a secondary permitting process (section 7(a)(2)) may be required. If this is the case, this may represent a new workload for some BLM field offices.

- Comment Page 4.3-59: The proposed Aquatic Invasive Species (AIS) prevention regulations are not consistent with existing watercraft or firefighting AIS protocols operating within the State. To be consistent, the proposed regulations would require inspection and decontamination of equipment when it is moved from one watershed knowing to contain AIS to another uncontaminated watershed.
- Comment Chapter 2, Pages 2-24 through 60: BLM will need to confirm suction dredge regulations for specific stream systems identified in this Chapter are consistent with closures and withdrawals identified in relevant Resource Management Plans.

Species/Location/Season Specific Comments

- Generally, in streams with the sole action species listed as foothill yellow-legged frog in Appendix L, the classification should always be E. Opening these streams to suction dredging in June (classification C) and July (classification D) cannot be justified based on the species life history. Suction dredging in June and July could cause impacts to the species. BLM supports the more protective E classification for these streams.
- Tributaries in the Red Hills Area of Critical Environmental Concern in Tuolumne County should be classified as “A” (no dredging permitted at any time). These tributaries are identified as Amber Creek, Horton Creek, and Roach Creek in the draft EIR document. In addition to these creeks, Rebecca Creek and Minnow Creek should be added to this classification. This classification would serve to protect not only Red Hills roach, a BLM sensitive fish species, but also Red Hills vervain, *Verbena californica*, a plant species listed by the U.S. Fish and Wildlife Service as threatened under the federal Endangered Species Act. This species is present along the creek, and in the active channel of these creeks. This plant species is also listed under the State Endangered Species Act. There are also several BLM sensitive plant species occurring in the same habitat that would be impacted by suction dredging of any kind, including Red Hills ragwort, *Senecio clevelandii* var. *heterophyllus*, which occurs within the stream, as well.
- Indian Creek, a tributary to the South Fork American, near Coloma, California should be classified as E for the protection of foothill yellow-legged frog. There is a healthy population of foothill yellow-legged frog in this stream.

- Bear River and its tributaries between Lake Combie and Dutch Flat Afterbay should be classified as E for the protection of foothill yellow-legged frog. Steepollow Creek has a particularly healthy population.
- Moccasin Creek (Tuolumne County) in its entirety should be classified as E for the protection of foothill yellow-legged frog. This creek is around 1500 feet, and supports a healthy population of foothill yellow-legged frog. A classification of F below 2000 feet which would allow dredging in July and August may have impacts to foothill yellow-legged frog. BLM supports the more protective classification of E.
- Rose Creek and Knight Creek (Tuolumne County) should be classified as E for the protection of foothill yellow-legged frog, even below 2000 feet. A classification of F below 2000 feet which would allow dredging in July and August may have impacts to foothill yellow-legged frog. BLM supports the more protective classification of E.
- Third Brushy Canyon (Placer County) should be classified as E for the protection of foothill yellow-legged frog. There is a healthy population of foothill yellow-legged frogs on this creek. Per BLM historical records (1979), there were sightings of California red-legged frog, as well.
- There are certain creeks in Mariposa County below 2,000 feet, namely Hall's Gulch and Sherlock Creek, which support foothill yellow-legged frog. These creeks should be classified as E versus the proposed classification of F, which would allow suction dredging in July and August. Suction dredging during this period may have impacts to foothill yellow-legged frog. BLM supports the more protective classification of E.
- Creeks within the BLM designated Ione Manzanita and Ione Tertiary Oxisol Soils Areas of Critical Environmental Concern (ACEC) should be classified as A. The Ione Manzanita ACEC was established to protect the Ione Manzanita, *Arctostaphylos myrtifolia*, a plant species listed by the U.S. Fish and Wildlife Service as threatened under the federal Endangered Species Act. A spore, *Phytophthora cinnamomi*, is causing a disease in the manzanita. *P. cinnamomi* root and crown rot causes large contiguous patches of mortality in stands of *A. myrtifolia*. Infected plants desiccate rapidly at the onset of hot weather. *P. cinnamomi* root and crown rot has the potential to both eliminate entire *A. myrtifolia* populations and prevent recolonization of infested sites by *A. myrtifolia*. Successful conservation of this species will not be possible unless spread of this disease into noninfested stands can be stopped. BLM has made efforts to limit access, including fencing, to stop the spread of the disease into the Ione Manzanita ACEC. All streams in both of these ACECs should be closed to suction dredging to assist with containing the disease. Streams affected include Willow Creek in the NW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 33, T. 7 N., R. 9 E., MDM, tributaries of Jackson Creek in the NW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 16 and NE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 17, T. 5 N., R. 10 E., MDM, and tributaries of Mokelumne River (Camanche Reservoir) in the SW $\frac{1}{4}$ of Sec. 32 and the SW $\frac{1}{4}$ NW $\frac{1}{4}$ and NW $\frac{1}{4}$ SW $\frac{1}{4}$ of Sec. 33, T. 5 N., R. 10 E., MDM.

- In Placer County, the North Fork American River from Lake Clementine upstream to Big Valley Canyon is proposed for classification as G. Further upstream is proposed for classification as H. From a point 1,000 feet upstream of the Colfax-Iowa Hill Bridge and then upstream to a point 0.3 miles upstream of Heath Springs at the section line common to Sec. 15 and 16, T. 16 N., R. 14 E., MDM this river segment is classified as a Wild segment of the North Fork American Wild and Scenic River (WSR). The use of motorized land and water vehicles and suction dredges on BLM public lands and on national forest lands is prohibited within the WSR River Management Zone. Suction dredging in the private in-holdings would impact water quality (an outstandingly remarkable WSR value), would not be compatible with the wild classification and would be in violation of the WSR Management and Development Plan summarized at FR vol. 45, no. 173, pp. 58634-36 (9/4/80). Where classified as Wild and Scenic, the North Fork American River should be classified as A. No suction dredging should occur in this WSR.
- Generally, there are some areas due to threatened and endangered species, ACEC status, or W&SR status where the BLM will not allow suction dredging. Within the revised CDFG regulations it should be made clear that even though dredging may be allowed under state law, all dredgers must contact the local BLM Field Office before dredging on BLM public lands.

SUCTION DREDGE PERMITTING PROGRAM
Draft Subsequent Environmental Impact Report (DSEIR)
Comment Form

Name:	MIKE BRAY
Mailing Address:	3024 ROSS DR
	VALLEY SPRINGS, CA 95252
Telephone No. (optional):	
Email (optional):	

Comments/Issues:	SINCE I RETIRED, I HAVE BEEN PROSPECTING TO SUPPLEMENT MY INCOME. EACH YEAR THERE ARE MORE AND MORE AREAS CLOSED TO PROSPECTING, AND WITH THE LOSS OF THE ABILITY TO USE A DREDGE IT HAS GREATLY CUT INTO MY INCOME, AND WITH THE COST OF LIVING GOING UP, IT IS GETTING VERY HARD TO MAKE IT FROM MONTH. PROSPECTING IS MORE THAN A HOBBY, IT IS MY PROFESSION. CURRENT RESTRICTIONS MAKE THAT NEARLY IMPOSSIBLE

Please use additional sheets if necessary.

SUBMIT WRITTEN COMMENTS (POSTMARKED BY 05/10/11) TO:

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

Email: dfgsuctiondredge@dfg.ca.gov

Fax: (530) 225-2391

Dear Fish & Game:

In regards to your proposed Saction Dredging Regulations I am apposed to Many Issues.

- 1) Limit on number of Permits is not Fair because I have heard Several Environmental Groups are goin to Buy all the permits so Dredgers won't Be able to get them. & I don't see a Limit on Fishing Permits in the same rivers.
- 2) the 4" Nossel Limit is too Small it should Be at Least 6" with permits For Larger ones. Also manufactures Exaggerate the Volume of Yardage a dredge can move of Loose, Sand not normal river material with rocks. Most 6" Dredger can only process about 2 yards of material through the Dredge Because most of the Time they are moving rocks!
- 3) the pump intake screen size should Be a minnum of ~~1/4~~ 1/2" of an Inch as they will not Function properly with any Smaller one, $\frac{3}{32}$ is too Small
- 4) the 3' Ban on the material near the Edge of the river is Bad Because the river Level Flactuates seasonly & Daily. Some of the creeks are not much wider than 6 Feet and Some are narrower. I see no restriction on Fisherman, rafters, tubers and Kyackers on where they wade, walk, & Paddle through Fish reds and Frog Habitat!

→ 5) The creeks + Streams Listed as September 1st opening should be moved to July 1st as Tahoe & Plumas county USFS Biologist letter to you on their web page & your web page shows they feel the season opening should be moved from the 4th weekend of May to the 4th weekend of June to protect the rainbow trout and yellow legged frogs +

→ 6) Motorized winches should not need special permits the make our work Safer!

→ 7) Remember: Fisherman Kill Fish! F&G Sells them Licenses To Tubers, Boaters & Fisherman walk & Drift through Reds!

Farmers Divert water from the river & water table and the rivers run lower & warmer

Suction Dredgers Remove Mercury

Lead

Glass

Fish weight

Fish Hooks + Lures

Suction Dredgers Do not Remove water

from the River as some Dams Divert

it like Trinity River water to Wiskeytown

Ruins the Trinity River Salmon Population

Lastly I don't believe you will have enough F&G Agents to do the on site inspections. They should be catching poachers!

Thank You For Your time Don Bruechle

Don Bruechle
530-862-1307

Box 362 Sierra City, Ca.
96125

Murphy & Buchal LLP

2000 S.W. First Avenue, Suite 420
Portland, Oregon 97201

James L. Buchal

telephone: 503-227-1011
fax: 503-227-1034
e-mail: jbuchal@mblp.com

May 10, 2011

BY E-MAIL AND FIRST CLASS MAIL

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

Re: *Comments on Draft SEIS and Proposed Suction Dredging Regulations*

Dear Mr. Stopher:

These comments are submitted on behalf of North Star International Ship Traders, Inc. and individuals owning numerous placer gold mining claims affected by the proposed new suction dredge mining regulations. All of these claims contain valuable discoveries of gold of a scale that can only be mined with suction dredges. We have already suffered very substantial injury as a result of the moratorium on suction dredge mining, and the new regulations make this baseless seizure of our private property even worse.

Closure of Horse Creek

Most importantly, the proposed new regulations would bar all mining on at least three claims registered to us: the Gold Hill Placer claim (BLM CAMC #296931), the Long Sluice claim (CAMC296932), and the Horseshoe Nugget claim (CAMC296930). All of these claims are located on Horse Creek in Siskiyou County. Forbidding all mining on these claims is both illegal and senseless. With respect to legality, this claim is located within National Forest boundaries and is subject to the paramount requirements of federal law that it be open for mineral development, and not subject to regulation which materially interferes with such mineral development.

The draft states the following rationale for “Class A” closures: “any level of dredging activity in suitable or occupied habitat would have the potential to result in a deleterious effect to the species”. Closures on this basis violate state law as well, for the agency has no evidence of any actual harm to fish analyzed on any population-level scale—or even individual fish. In the case of Horse Creek, there is no data presented concerning adverse effects; there is only a chart suggesting that restrictions are present

because of “SONCC Coho”. There is not even any evidence presented that coho are present on these claims.

The only available evidence concerning impacts of suction dredging on coho salmon show a number of positive effects, including improving spawning beds, providing lower-temperature refuge holes for adults,¹ and providing additional feed for juvenile coho. Given these positive effects, it is irrational for the agency to issue any blanket prohibition on suction dredging; evidence would support, at most, restrictions aimed at dredging into salmon redds.

Impacts on Fish

More generally, there is no credible evidence of any appreciable adverse environmental impact from suction dredge mining under longstanding restrictions against dredging into salmon redds. Indeed, from a historical perspective, claims of adverse impacts to fish populations in particular are far-fetched. California enjoyed strong anadromous and other fish runs through decades of mining with far higher stream impacts, including such activities as sluicing entire hillsides into the bodies of water. Oregon became concerned in the early 1930s about potential impacts from such large scale mining that it literally discolored the entire Rogue River. An honest fish biologist, Ward, concluded that even such large scale mining had no appreciable adverse impact.

It was only the advent of higher-technology fishing equipment, such as fish finders and radar, that permitted deliberate harvest of fish to send fish populations to precarious levels in some cases—a process sanctioned by your agency.

Moreover, environmental agencies throughout the West have recognized that even extremely large sediment releases have no appreciable impact on fish populations in river such as the Klamath System. They have done so by repeatedly approving dam removals that release hundreds of thousands of tons of sediment downstream at once.

The environmental planning for such releases correctly recognize that even releases of such a magnitude are typical dwarfed by natural sediment transport processes. Dam removal exercises, including the removal of Savage Rapids Dam on the Rogue River, Marmot Dam on the Sandy River, and many others have shown no appreciable adverse effect on fish populations, even in the short run. For the agency to concern itself over tiny holes hand dug and vacuumed by suction dredge miners is a profoundly hypocritical exercise. Your agency is involved in ongoing efforts to secure removal of

¹ The agency should be mindful of the testimony of its own former biologist in the Alameda County litigation that holes left by miners are often the only available habitat in which adults can survive in hot weather. From this perspective, any requirement on miners to fill such holes is not only unnecessary, but positively inimical to salmonid survival.

the Klamath River dams, and we demand that your assessment of the environmental impacts of sediment releases be consistent across these activities.

The Mercury Issue

Particular concern is expressed in the SEIR about the possibility that suction dredge miners may encounter pockets of mercury. Here the report's conclusions are utterly irrational. The Klamath and other California rivers are highly dynamic systems, and mercury that has accumulated in spots along the river has done so by virtue of transport processes that move it continuously, albeit slowly and episodically, downstream. None of it was put in its present locations by miners.

It is well-documented that suction dredgers will remove 98% of this mercury if they attempt to vacuum it up. Concern has focused upon the remaining 2% discharged off the back of the dredge; the report suggests that this mercury consists of smaller particles and speculates without any evidence that the dredging process may have made the particles smaller. Even if this is true, there is no evidence to suggest that such mercury does anything other than settle quickly to the bottom of the stream along with the rest of any emitted turbidity plume. Nor is there any evidence to suggest that the resulting process results in a larger total volume of mercury being downstream.

The agency should recognize that the net environmental impact of suction dredging on mercury is positive, not negative, because as a result of suction dredging a greater quantity of mercury will be removed from the environment than under any "no action" alternative, and indeed, a lesser quantity of mercury will migrate downstream to more biologically-active areas. We agree with those, however, who have demonstrated that actual adverse effects of mercury presence on human or animal health are insignificant under any reasonable set of assumptions.

The agency may be tempted to assume that it would be better to employ extraordinarily expensive closed cycle removal protocols, with multiple layers of filtering, so as to remove essentially 100% of the mercury, but this sort of conclusion ignores the secondary environmental costs of high energy consumption and the generation of large amounts of toxic waste—as opposed to a simple process that recycles the mercury in commercially-usable form. As a general matter, higher costs are associated with higher environmental impacts, and remediation requirements that cost thousands of times more than simple suction dredging cannot be assumed to be environmentally benign.

Moreover, the high-cost removal alternative presumes that responsible authorities *know* where the mercury spots are and remove them. Unless suction dredge miners find them, the spots will be largely unknown and continue to migrate slowly downstream. A

less restrictive alternative would be to work cooperatively with suction dredge miners, requiring them to report known hotspots for official action, such that responsible authorities could obtain an inventory and prioritize those in the most dynamic stream environments for remediation first.

Total Permit Limitations

As mentioned above, North-Star holds a number of federally-registered mining claims, which constitute a federally-protected possessory property right. There are no grounds whatsoever for limiting the total number of suction dredge permits issued, but to the extent that you do so, you must find a means to “grandfather-in” those exercising property rights with respect to established claims. Property rights are not properly subject to destruction by the lottery of insufficient permits to use them. Whatever cap you set—and you should set none—existing claim holders, and their operators, should be exempt from it.

Finally, information about existing claims is already in the files of the State of California through filing with county recorders, and is also available through the Bureau of Land Management’s GIS and other systems. In a context where you propose seriously to interfere with existing private property rights, elementary concepts of due process of law require that you provide specific notice to the affected rights holders. A system of assignable permits automatically issued to such claim holders would be more consistent with preserving property rights.

Suction Dredging and Tourism

Tourists come from all over the world to suction dredge in California rivers and streams. Unfortunately, the proposed regulations are written in a way that could be interpreted to require a U.S. passport and other U.S.-based information (proposed regulations page 4). These provisions should be allowed to provide for foreign passports as a form of identification, to permit foreign tourists to enjoy suction dredging. Alternatively (or in addition), the provision allowing driver’s licenses should be amended to permit using a license “from the licensee’s state *or country* of domicile”.

Conclusion

The draft SEIR and accompanying regulations fail to transcend speculation and opinion and achieve a rational quantification and assessment of environmental impacts. By allowing speculation about *potential* impacts that *could* occur under circumstances that bear no reasonable relationship to actual conditions to drive agency decisionmaking, the agency discredits the very concept of environmental impact review. This is contrary to California law

requiring environmentally-based restrictions on economic activity to bear some reasonable relationship to environmental impact.

Sincerely,

A handwritten signature in black ink, appearing to read 'J. Buchal', with a stylized, cursive flourish extending to the right.

James L. Buchal

Subject: Comments on proposed dredging regulations

Date: Tuesday, May 10, 2011 1:05:35 PM PT

From: Bob Burger

To: Mark Stopher

These comments will have the experience of nearly thirty years dredging with 3-6" dredges in the Coffee Creek area of Trinity County. It's been my observation that despite the temporary water discoloration that occurs when actively dredging, it is actually beneficial to fish and their food supply. Dredging immediately provides food by dislodging insects that would be otherwise unavailable and the tailings are an enhanced environment for insect growth. When dredging, fish come near the nozzle to snatch insects as they are uncovered, and to the back of the sluice box to get them when they return to the stream. The loosened and classified tailings provide protection for insect incubation and are inhabited by many species within days, thus greatly increasing the food supply for fish. The tailings also provide increased spawning gravel. Concerns regarding sedimentation affecting eggs are moot because of the season limitations imposed and are temporary until the next high water event. In actuality the same effect occurs naturally when a sudden localized thundershower muddies small tributaries and seems to have no effect. In an aggraded stream, dredging can be tremendously beneficial by providing deep pools with cooler temperatures where water temperature is a concern. There is virtually nothing within the power of a suction dredge, no matter what the size, that compares with the natural forces of high water that occur every year and completely obliterates all sign of activity each season. I'm not aware of a single negative accumulative affect of suction dredging.

That said I have numerous concerns that the regulations as presented impose many unnecessary burdens on the dredger and seem more intended to harass and provide opportunity for violation than provide real protection for the various resources.

I don't understand the necessity of identifying down to a quarter section where you might want to dredge. I assume if you want to modify your locations it requires a trip to DFG office during business hours which could be several hundred miles roundtrip. Since there is no apparent suggestion in the regulations to limit the number of dredges in an area, what is the point? Fisherman and hunters don't have to declare within a quarter section where they will fish or hunt.

The size of the pump screen is especially onerous. All organisms in the stream have a natural ability to avoid being sucked where they don't want to go. Seems to me that an organism that inadvertently gets sucked onto a screen would be far better off going on thru the pump and out the sluice that it would be pasted up against the screen until the dredge is shut off. A screen of the proposed size would be

continuously clogged with moss, leaves and other waterborne debris.

Since there are no approved fuel containers that will spill by simply being knocked over unless the lid is off, the requirement to store fuel 100 feet from the stream is silly. Where I dredge it's far more likely to rupture rolling back down the hill than it is sitting in a convenient nearby location. Other persons that may have fuel near a stream, such as dirt bikers, campers, hunters, etc. don't have this requirement, so why dredgers? Since it is already illegal to dispense fuel in a waterway, if the department feels the need to micromanage it may be more beneficial to regulate that the lid be firmly in place when not in use than where to store the container.

Why the necessity to level tailings piles? They are only temporary as the next high water event will obliterate and redistribute them anyway.

Disturbance of cultural artifacts are prohibited by many other statutes and regulations. Seems to me that it is extremely unlikely to find undisturbed cultural sites or objects within active stream gravels, certainly not a campground or burial ground. I can't imagine what sort of cultural site would be found dredging, so what's the point of including this in the dredging regulations. Again, hunters and fishermen aren't burdened with this, and hunters are far more likely to discover a cultural site than is a dredger.

Displaying a permit number on your dredge 4.8 times the size of the numbers on an State ATV license is ridiculous. Especially when you consider that each permit is actually a combination person/machine. I assume that every person that may operate a machine during a season must have their permit number displayed. I don't know how many digits a permit number will be but displaying them all could be quit challenging. Again, hunters and fishermen don't have to display their numbers on their equipment, and fishermen don't even have to display their license anymore.

The requirement of permitting combinations of persons/machines is difficult to understand and is burdensome. If it's necessary to change an engine during a season the proposed regulations seem to require a modification of permit. If a person has two or more dredges for various stream conditions the proposed regulations seem to require two or more permits. Then each must be permitted for every person that may help during a season. Conversely, if a person wants to help several friends during a season he must be permitted for each machine he may want to work with. Again, hunters and fishermen don't have to permit each rod or reel or firearm they may use, so why dredgers? This is especially troublesome when taking into consideration the proposed limitation on permit numbers. I'm not aware of a limitation on number of fishing or hunting licenses sold so why dredgers? Comparing historical permit numbers issued to the current proposal is comparing apples to oranges as previously a dredge permit would cover all machines a person owned, and all

assistants he may have. Additionally, with a number limitation, it is possible for anti-dredging activists to buy a significant number of permits in order to disrupt dredging.

I don't see any provisions in the regulations for seasonal streams that may only have water from January to April for instance. I own property in Shasta County with a small gold bearing seasonal creek, never has fish, and can't ever legally dredge it. I'm sure I'm not unique statewide.

The most troubling of the proposed regulations has to do with equipment and allowable dredging restrictions.

The four inch nozzle restriction seems arbitrary and makes most streams impractical to work for the serious dredger. Most of my experience is in a relatively small stream but still a five inch is most efficient. It's doubtful if the DFG will have enough personnel to expeditiously do site inspections in order to allow for special, undefined circumstances that would allow larger sizes. If a size limit is somehow justified, I would suggest six inch. I would prefer no size restriction, leaving that decision to the dredgers experience and dredging conditions. Perhaps a fee difference for eight inch and larger would be appropriate. My understanding is that when regulations devalue property a person is entitled to compensation. Certainly if dredges are limited to four inches then many dredges in California would be devalued or useless.

Even more troubling is the restriction not to dredge within three feet of the waters edge or instream gravel bars. I understand it is to prevent disrupting vegetation, but most streams do not have vegetation growing to waters edge, certainly not continuously. All material accessible from water level should be considered dredgible, as it is all subject to re-orientation naturally anyway by seasonal high water events. In other circumstances the DFG actually encourages the "migration" of large woody debris into the stream channel. This restriction makes any stream less than six feet in width impossible to work, and any stream less than 12 or 14 feet in width impractical. I don't disagree with the previous restriction of not introducing material into a stream channel by sluicing from a streambank but all material accessible from current water level and subject to seasonal re-orientation should be dredgible. Again, mineral rights are private property and restrictions of this sort are uncompensated takings. Even small scale alteration of stream flow within the seasonal high water marks should be allowed as they are only temporary, the stream has been there before, and will be eventually again, perhaps with the next high water event.

I'm also concerned about restrictions on how/where oversize material can be moved. What difference does it make if a boulder is moved by a power winch or hand come-along? Afterall, everything encountered in a stream got there by water deposit and will be subject to

re-orientation soon by the next flood stage. I see many amazing collections of oversize material inexplicably piled high naturally by stream action. There should be no restrictions as long as material is not moved beyond the high water marks.

Thanks for your work trying to bring common sense and practicality to suction dredging regulations.

Best Regards,

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