

Appendix G

PUBLIC ADVISORY COMMITTEE MEETING SUMMARIES

Suction Dredge Permit Program Public Advisory Committee

Date: February 11, 2010, 10:00 am – 4:00 pm
Location: Department of Fish and Game Office of Training and Development, 1740 N. Market Blvd., Sacramento, CA

MEETING ATTENDANCE:

Public Advisory Committee Members

Name	Organization
Alison Harvey	Friends of the North Fork and California Tribal Business Alliance
Carrie Monohan	Sierra Fund
Chip Hess	The Miners Cache
Christine Nota	US Forest Service
Claudia Wise	retired U.S. EPA Physical Scientist
Craig Tucker	Karuk Tribe
George Wheeldon	Registered Geologist, El Dorado County
Izzy Martin	Sierra Fund
Jeff Shellito	Friends of the North Fork
Jerry Hobbs	Public Lands for the People
Jim Alvarie	Public Lands for the People
Jim Foley	The New 49'ers
John Buckley	Central Sierra Environmental Resource Center
Joseph Greene	Retired research scientist
Ken Oliver	Siskiyou County
Marc Springer	Bureau of Land Management, California State Office
Pat Keene	Keene Engineering
Petey Brucker	Salmon River Restoration Council
Rachel Dunn	The New 49'ers
Ray Nutting	El Dorado County
Ric Costales	Siskiyou County
Steve Evans	Friends of the River
Walt Duffy	Leader, California Cooperative Research Unit, US Geological Survey, Cooperative Research Units
Walt Wegner	Keene Engineering

Department of Fish and Game and Consultants

Mark Stopher	Department of Fish and Game
John Hanson	Department of Fish and Game
Bernie Aguilar	Department of Fish and Game
Randy Kelly	Department of Fish and Game
Rick Humphreys	State Water Resources Control Board
Michael Stevenson	Horizon Water and Environmental
Joe Merz	Cramer Fish Sciences
Tom Trexler	Theta Consulting Services
Austin McNerny	Center for Collaborative Policy
Jodie Monaghan	Center for Collaborative Policy
Christal Love	Center for Collaborative Policy

Action Items

1. DFG will provide a description of what triggers a NPDES permit.
2. DFG will provide PAC members with a copy of the dredge permit including any attachments.
3. DFG will provide a copy of the 1994 EIR.
4. The consultant team will create a glossary to define terms such as:
 - a. “power sluicing”
 - b. High banking
 - c. Suction Dredging
5. Jerry Hobbs will provide PAC members with a Forest Service Study comparing suction dredge material movements compared to nature.
6. The Consultant team will make the PowerPoint presentation available online.
7. Allison Harvey will provide a list of court cases that reference deleterious to fish.
8. Carrie Monohan will provide a list of studies that look at the direct effect of suction dredge mining on fish habitat.
9. At the next meeting, DFG will make a short presentation on why the 1994 regulations will not work today.
10. DFG will make available a larger version of Pat Keene’s chart from the PowerPoint.

Meeting Summary

Mark Stopher, Department of Fish and Game (DFG), welcomed participants and explained the development and selection process of the public advisory committee (PAC). The purpose of the PAC is to build shared understanding of overall purpose of advisory committee and intended use of ideas generated.

Introductions

Facilitator Austin McInerny, Center of Collaborative Policy (CCP), welcomed the group and reviewed the meeting agenda. Mr. McInerny then asked committee members to introduce themselves and share why they are interested in participating in the PAC. PAC members expressed the following reasons for participating:

- Help the State to implement workable regulations
- See DFG update regulations
- Contribute to new regulations that protect fish
- Bring science to the table
- Maintain economic diversity
- Gather information and get facts
- Protect aquatic resources and land based activities
- Protect public health and the environment.
- Create regulations that permit activities that are not deleterious to fish
- Protect mining and small business
- Look at the social and economic pros and cons of suction dredging
- Protect public lands from being closed
- Create a DFG regulation that is compatible with the federal mining laws and protect private property rights
- Take care of Salmon River and Klamath River, assess and protect river system with active participation from the community and protect species of concern
- Ensure the Indian regulations are consistent with State and Federal laws
- Protect water and all wildlife (not just fish)
- Ensure this process is done legally and fair
- Ensure the history of hydraulic mining is taken into account
- Reduce fear based accusations
- Keep facts right
- More input from people on the ground
- Ensure that new regulation will allow suction dredge mining and protects resources
- Conduct an objective analysis of suction dredge mining

Process Overview

Mr. McInerny reviewed the charter and stated that he was seeking to get agreement on the broad concepts of the charter. He asked group members to be honest, share information, ask questions, and let CCP know if their needs are being met.

PAC members had the following questions and comments:

- One member mentioned they anticipated there would be PAC members representing water, amphibians, aquatic mammals, recreation, and suction dredging. They observed that the majority of non-agency members in the room appear to support suction dredging. They were concerned that the PAC may not be able to address the full breadth of issues.

Mr. Stopher replied that while DFG did invite independent scientists, DFG also employs experts on the resources just identified. The PAC members also bring additional expertise on geology, physical processes and mining. The goal is get a broad range of perspectives. Part of this balance includes representation from the variety of geographic areas of suction dredging and different types of mining.

- Another member mentioned that some members have a different perspective on the definition of deleterious to fish. A question was asked: when PAC members sign the Charter, does that mean everyone needs to agree on this definition of deleterious? Mr. McNerny replied that DFG is asking for commitment from PAC members to participate in good faith, recognizing that there may be various perspectives on the definition of deleterious.
- A question was asked: how does this process interface with what the State Water Quality Control Board (SWRCB) is doing? Mr. Stopher replied that he did not mean to suggest that the Clean Water Act or the Federal mining laws are not relevant. They are - those laws are part of the regulatory environment in California. That said, the state does not have the authority to interpret Federal law.

The SWRCB has contributed financial resources towards this process. This meeting today is an example of what DFG was able to do with the additional resources. Additionally, there will be five meetings to take comments on the Draft EIR. The SWRCB has continued to provide insight during this process. The SWRCB will take what regulation is created and decide if they need to take any regulatory actions.

- One member commented that they do not want the SWRCB to have to do an additional California Environmental Quality Act (CEQA) review. They would rather include the Clean Water Act in this Supplemental Environmental Impact Report (SEIR). Mr. Stopher replied that at this point, DFG would be guessing how a National Pollution Discharge Elimination System (NPDES) permit would work as a result of this regulation.
- A comment was made that it would be useful to have a clear understanding of what triggers a NPDES permit (see **Action Item 1**)
- Another member was concerned about the wording in the Charter under the heading Collaborative Scope. It needs to include a discussion of wildlife or user conflicts. Is there a way to revise this Charter so that these issues are mentioned? Mr. McNerny replied that the definition of fish does include some of the animals mentioned. CCP can work with PAC members to add additional text to the Charter. He stressed that the Charter was not meant to be a legally binding document. Mr. Stopher added that the SEIR will discuss all of these topics as well.
- A question was asked about whether this process is a discretionary or ministerial process for CEQA? Mr. Stopher responded that it will be discretionary.
- Will the SEIR have a no project alternative? Mr. Stopher responded that no project is considered the baseline condition.

In response to a question seeking agreement, many PAC members expressed concurrence with the way the Charter is written.

Context for PAC Discussions

Referring to the PowerPoint, Michael Stevenson, Horizon Water and Environmental (CEQA consultant), reviewed the following items:

- History of recent legal actions
- CEQA process and timeline
- Overview of F&G Code 5653
- Overview of 14 CCR 228
- Definition of a Suction Dredge
- Definition of “Deleterious to Fish”

The following questions and comments were made:

- DFG was willing to settle a few years ago regarding the issue of suction dredge mining; there was an agreement with the Karuk Tribe that listed limits on specific rivers in the Klamath area. However, several mining groups intervened and the settlement did not go forward. As a result, the judge intervened and required the SEIR.
- Please provide a copy of the full regulations, not just a summary (see **Action Item 2**).
- How do these regulations apply on federal land? Mr. Stevenson replied that the law says that the suction dredge permit does not allow you to ignore other State or Federal laws.
- Please provide a copy of the 1994 EIR (see **Action Item 3**)
- How does this program relate to the 303d listed streams for Mercury and other changing conditions? Mr. Stevenson replied that DFG will have to think about this as conditions change.
- What is the definition of impoundments? Mr. Stevenson replied that DFG authorizes alterations to the streambed and any substantial impoundment is prohibited without a Streambed Alteration Agreement (SAA). The interaction between those two laws is complicated but this group can come back to this topic.
- Suction dredge mining removes overburden; it is not correct to say it necessarily removes sediment. The group should use the term stream substrate rather than sediment.
- The definition of suction dredging is captured in Fish and Game Code 14268; it does not say it has to be a suction pump.
- A comment was made that by personal observation, some people clearly high bank. If you are looking at the environmental impacts and you pretend that high banking is not happening, it would result in an inaccurate analysis. Mr. McNerny responded that if an activity has an environmental effect and is not included as suction dredge, it will be looked at under the cumulative analysis section of the SIER.
- A suggestion was made to define power sluicing (see **Action Item 4**).

Suction Dredge Basics

Using the PowerPoint presentation, Mr. Stevenson reviewed the following items:

- Overview of Suction Dredging Activity
- Geomorphology
- Water Quality
- Biological Resources
- Other Topics?

The PAC had the following comments and questions regarding the basics of suction dredge:

- Only water goes through the pump; aquatic life does not come in contact with the pump.
- Some of us are not just collecting gold, but also gem minerals. The specific gravity settings on the suction dredge are going to change depending on what you are looking for.
- The technology has changed greatly since the picture shown. The same type of equipment is used to mine for diamonds. There are some screening devices in the suction dredge and undercurrents with two layers of riffles. This allows things such as mercury to sort out. Almost all the mercury settles out in the first 6-8 inches of the sluice box. The undercurrent traps the finer gold.
- All the pilings the miners have to move by hand. There is a tremendous amount of handwork involved.
- Mercury has so many different forms and sizes; you can not see some of the potentially harmful forms.
- A good suction dredge would collect 98% of the visible mercury. Nothing is going to collect the micron sized mercury.
- The suction dredge permit does not require information on where a miner is operating. DFG could monitor where suction dredging is occurring using section/township/range information from a topographic map.
- A question was asked: if a miner is earning income, don't they have to report it? Mr. Stevenson replied that they have to report the income and amount only if they sell the gold and have a taxable transaction. However, gold sales are reported in the "other category" on tax forms. The "other category" captures other things as well.
- Between 1860 and 1875, 18 thousands tons of mercury were brought to the Mother Lode. A substantial amount is believed to still be there.
- With a 6 inch dredge, a miner can probably only move 2-3 cubic yards of material. It is a tedious process. When the catalogue is republished, it will reflect the real numbers.
- Snow melt in the rivers and high flow can do far more damage than dredging. We allow massive releases of water for recreation. Mr. Stevenson commented that the SEIR needs to evaluate the effects of both natural flows and human effects.
- On an annual basis, there is a lot of accumulation that builds up. In the last 150 years, there have about 5 scouring events where all material plus eroded bedrock is moved downstream. There is a natural effect about every 30 years.

- What is the role of staff in terms of overriding considerations? Mr. McInerney replied that this process is not there yet.
- There is a study done by the U.S. Forest Service comparing suction dredge material movements compared to nature (see **Action Item 5**).
- Need a thorough understanding of where mercury comes from.
- If dredging occurs all summer long, a fish that comes to that area during the fall will be exposed to the way miners left it, not the winter storms.
- Suction dredging impacts the food web. Have seen areas that have been intensely dredged that look like dead zones for several weeks.
- There was a study done in the 1960's that found there was no effect from suction dredging from one season to the next.
- The effects of a suction dredge, on average, 15-20 feet downstream.
- The noise and disturbance of suction dredging should be looked at.
- A mile of river with 50 dredges could have a positive effect (see San Gabriel River.)
- Dredging can have a positive effect on fish and does not harm wildlife
- Does riparian vegetation get impacted when getting the dredge in the river?
- Can the PowerPoint presentation be made available online (see **Action Item 6**).

Regulatory Update Overview

Mr. Stopher presented an overview of the regulatory system. He informed the group that several documents are available online on the DFG website. He then explained the purpose of the survey currently being sent out to a random selection of suction dredge permit holders.

The PAC had the following comments / questions regarding the regulatory update overview:

- Will members be able to see the results of the survey? Mr. Stevenson replied that they would, but the results will not be available in time for the PAC meetings.
- Several people are concerned that if they fill out the survey incorrectly, they will not be allowed to dredge. Mr. Stopher replied that DFG wants to use the survey information for background conditions. The survey will not be used against anyone.
- Future surveys should have a box that says "I don't want to fill this out."
- There are a lot of survey questions that are bothersome.
- Is this an anonymous survey? Mr. Stevenson replied that the intent is to track responses so a follow-up request is only sent to those who have not yet responded. He stressed that no personal information would be used.
- Is deleterious to fish referenced in an existing statute? Mr. Stopher replied that it was not. A PAC member informed him that there are court cases to look at (see **Action Item 7**).
- Deleterious in this context is broad; could also be called harmful or toxic.

- One of the challenges is that each individual has a different picture in mind of what suction dredging is. There are worst examples and best examples.
- How many alternatives will DFG have? Does this group have input? Mr. Stopher replied that DFG does not have a preferred alternative yet. One alternative could be no suction dredge; another could be the return to old regulations (although unlikely). DFG has put off the drafting of the regulations until the PAC is done.
- Need to address if DFG has jurisdiction on Federal land.
- The economic impacts of halting suction dredging are diverse; it affects not just the miners, but also those who supply the equipment and services.
- If this group is going to talk about lost business impacts for mining, it also needs to review the impacts of fishing.
- By observation, the mining clubs seem to increase the number of dredgers in one particular spot.
- What is the capacity for enforcement over the next 5 years? No matter what the PAC comes up with, how many DFG wardens will be there to enforce it?
- An offer was made to bring in a DVD on underwater dredging.
- Can you separate out impacts on habitat from impacts on fish?
- The SEIR should also look at river infrastructure and how it relates to habitat.
- There are studies that look at the direct effect of suction dredge mining and fish habitat (see **Action Item 8**).
- A short presentation on why the 1994 regulations will not work today was requested for the next PAC meeting (see **Action Item 9**).
- Do not see the effects on fish and stream systems as completely negative. Some years tailings are unstable and some years they are not.
- It would be useful to consult with top scientists that specialize in the species of concern being discussed. Mr. McNerny replied that the PAC does not have time to do that at this point and asked that members review the literature review.
- Does the literature review use peer reviewed studies? Mr. Stevenson replied that the authors of the literature review looked at references that were cited in 1994 EIR, and looked at comments submitted in 2007. Authors tried to select the most robust information available, but included more than peer reviewed journals.

Brainstorm on Regulatory Approaches

The group discussed the pro's and con's of breaking into small groups or staying in one large group. The general desire was to stay in a large group this time. Mr. McNerny asked the group to identify topics for group review both at this meeting and during the next two PAC meetings. Members were then given a set of dots to place next to those discussion topics they felt were most important. Mr. McNerny stressed that this was not a vote, but rather an attempt to prioritize the order of the topics to be addressed. All topics will be discussed eventually. The results were as follows:

Breakout Topic	Number of dot votes
Economic Impacts	15
Enforceability of Regulations	14
Cultural Beneficial Uses	8
Fish: effects on eggs, larvae, juveniles, adults	20
Effects on stream benthic community	8
Habitat Alteration	8
Water quality (turbidity, temperature, fuel spills, oil)	11
Mobilization of mercury / other constituents	18
River conflicts	1
New scientific info / legal issues	0
Utility of special dredge permit	0
Keep 1994 regulations	0
Possible Regulatory Tools	
Which Streams	1
Time of Year	0
Equipment Types	0
How Equipment is used	0
# of dredges per stream	1
Monitoring, Reporting, Enforcement	0
All Group Topics	
“Deleterious”	0
“Suction Dredge”	1

Mr. McNerny suggested that during the next meeting, the PAC all talk about the same topics in small groups and then come together and share what was discussed with the full group.

Next Steps and Meeting Recap

Mr. McNerny asked the group for suggestions for the agenda for the second PAC meeting. He received the following feedback:

- Please send materials out a week in advance.
- Provide a larger version of Pat Keene’s chart (see **Action Item 10**).
- Each small group should have balanced interest group participation.
- Define the following terms:
 - Equipment
 - High banking

- Power sluicing
- Incidental take
- Stream
- Should have a scientist speak next time. Mr. McInerny replied that a scientist could be brought to the next meeting to speak, but that the role of this group was not to debate the science. Mr. Stopher added that DFG cannot wait for all the science before making decisions. There is going to be some scientific uncertainty. He mentioned that he has had an offer from USGS to make a presentation to this group regarding the Yuba and Bear rivers and asked what kind of other specific topics the group wanted to address. The following suggestions were made:
 - 10 minute presentation to talk about the misconceptions of Indian fishing
 - What were the decisions that made the judge require a SEIR.

A PAC member gave a brief review of the triggers citing Fish and Game Code 653. Coho Salmon were listed (and others). Litigation was introduced asking for DFG to update the regulations since the status of these species had changed. The Tribes negotiated a settlement with DFG that put temporal and geographic restrictions on suction dredge mining. That settlement would have been implemented if the New 49ers had not intervened. DFG was told they needed to do CEQA, but had limited resources. AB 1032 was lobbied against by the mining interests and did not pass. The legislation evolved into SB 670 bringing this group to where it is today. Mr. Stopher added that information relied on in 1994 has changed. Also, once the CEQA process is initiated, all resource topics need to be considered.

The PAC had the following additional comments and questions:

- Is the SIER taking into consideration the gill netting and foreign counties fishing within 12 miles of the California coastline? Mr. Stopher replied that those issues would be considered as part of the baseline conditions (except commercial fishing within 12 miles).
- Three meetings may not be enough time.
- The science may apply differently depending on what kind of fish lives in the stream and the impoundment of water.
- The state contains many different types of systems. There is not going to be a single easy answer.

Mr. McInerny reiterated that what DFG is asking of the PAC is to try to craft some ways to regulate activities that are deleterious to fish. There is not enough time to debate the science here. The department is asking for help in defining the term “deleterious to fish”. A member added that the requirements are to find that suction dredge mining is not harmful - not if it is beneficial or harmful.

- Have to prove what its not. It’s a challenge given the diversity of geographic areas.
- Should provide the PAC members with a copy of the dredge permit and attachments (see **Action Item 2**).
- CEQA is clear that when conditions change an entity has to redo the EIR. That is what triggered the EIR; it was solely the judge saying that changes have occurred. This group

is the public advisory committee not the scientific committee. All we can so as citizens is give DFG the best advice based on our experience and knowledge.

- The activities of suction dredging have the potential to result in a significant impact, otherwise there would have been a negative declaration required instead of the SEIR.

Mr. McInerny thanked the PAC members for attending. The meeting was adjourned.

Draft Meeting Summary

Suction Dredge Permit Program Public Advisory Committee

Date: February 25, 2010, 10:00 am – 4:00 pm
Location: Department of Fish and Game Office of Training and Development, 1740 N. Market Blvd., Sacramento, CA

MEETING ATTENDANCE:

Public Advisory Committee Members

Name	Organization
Alison Harvey	Friends of the North Fork and California Tribal Business Alliance
Carrie Monohan	Sierra Fund
Chip Hess	The Miners Cache
Christine Nota	US Forest Service
Claudia Wise	retired U.S. EPA Physical Scientist
Craig Tucker	Karuk Tribe
George Wheeldon	Registered Geologist, El Dorado County
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Kevin Fisher	Horizon Water and Environmental
Joe Merz	Cramer Fish Sciences
Tom Trexler	Theta Consulting Services
Austin McNerny	Center for Collaborative Policy
Jodie Monaghan	Center for Collaborative Policy
Christal Love	Center for Collaborative Policy

Action Items

1. DFG will provide all of the PowerPoint presentation materials with the exception of Charlie Alpers.
2. DFG will provide PAC members with a copy of the Klamath Salmon Report.
3. DFG will collect additional geological studies to add to the literature review.

Meeting Summary

Mark Stopher, Department of Fish and Game (DFG), welcomed participants and thanked them for coming and remarked that one measure of success is that all the PAC members decided to come back to the second meeting.

Introductions

Facilitator Austin McNerny, Center of Collaborative Policy (CCP), welcomed the group and asked committee members to introduce themselves. Mr. McNerny then reviewed a summary of the interests expressed at the first meeting.

PAC members had the following questions and comments:

- One member mentioned the while it was obvious that deleterious means harmful, this group should try to establish an order of magnitude. Need to know what the significant level of an action would be.
- Another member mentioned that if DFG is trying to manage suction dredge mining they need to also look at other issues, such as conflicts with other uses.

Reiteration of Advisory Committee's Purpose

Mr. Stopher reviewed the purpose of the PAC and stated that the process was limited by time and resources. He stated that at a minimum the PAC provides the opportunity to hear from people regarding the way they see the regulations unfolding. Mr. Stopher mentioned the Federal court hearing that was occurring the same day regarding a SB 670 dismissal motion. He stressed that he wanted to maintain a dialogue during the PAC meeting regardless of what was happening outside of the room. He mentioned that the group was going to hear a number of presentations that were meant to increase everyone's level of understanding.

PAC members had the following questions and comments:

- Several members mentioned they did not feel as though the Karuk Tribal fishing presentation was relevant to a suction dredge meeting or the California Environmental Quality Act (CEQA) process. Mr. Stopher replied that DFG brought forth all the groups that have a stake in this regulation, which includes the tribal interests and that one of the goals of this PAC process was to increase the level of understanding between various parties as to what and how various interests conduct their business. Thus, to this end, the presentation on the Karuk fishing practice is relevant.

Agenda Review and Meeting Summary

Mr. McNerny reviewed the meeting agenda and handouts and asked if there were any proposed edits to meeting summary 1. No comments were provided.

Informational Presentations

- Tom Trexler, Horizon Water and Environmental and Charlie Alpers presented an overview of mercury.
- Craig Trucker presented a history of tribal fish allocations and harvesting.

Mr. McNerny stated that all presentation materials except Mr. Alper's presentation would be distributed to the PAC after the meeting (see **Action Item 1**).

Mr. Trexler presented an overview of mercury, stated the purpose of his presentation was to get all the PAC members on the same page regarding the effects of mercury in the environment. Mr. Trexler described the following forms of mercury and their effects on humans and the environment: elemental mercury, mercury gas, and methylmercury (MeHg).

The following questions and comments were made:

- Is there a time of the year when the bacteria that convert mercury into MeHg are more abundant? Mr. Trexler replied that the bacteria are typically seen during times when there is more of an opportunity for anaerobic environments to be created such as wetlands.
- The U.S. Food and Drug Administration (FDA) have a different standard for MeHg than the U.S. Environmental Protection Agency (EPA). The FDA has a level of 1 parts per million (ppm) but the actual effect is 10 ppm.
- If you leave MeHg frozen in a freezer does it affect the half life?

Mr. Alpers, U.S. Geological Survey, then presented his recent mercury study results.

- General Issues: sediment plume of fine grained material encountered, mercury may oxidize to mercury II. There is a potential for methylation of mercury II downstream.
- Historical mining: approximately 100,000,000 kilograms (kg) of mercury have been produced in California. 33, 000,000 (kg) of mercury have been lost to the atmosphere from furnaces at mercury mines. 12,000,000 kg of mercury has been used in gold mining. 3,600,000 kg of mercury has been lost in hydraulic mining.
- Results: the material that was recovered in the sluice still have anywhere from 100 to 10,000. The sluice is concentrating mercury. The sluice is removing the material that is not reactive. The fine grain material is much more likely to be transported, and the likelihood of transportation is higher in the first 2 hours but then lowers in hour 3.
- Found a significant amount of MeHg by environmental standards.
- Did in stream testing, measuring suspended solids Saw a measureable increase during the test, and no evidence of the plum a day later.
- Size matters:
 - Oxidation reactions occur on the surface of mercury beans
 - Small particles have larger surface area to volume ratio
 - Smaller mercury particles = more reactive mercury in the environment

The following questions and comments were made:

- How much material did you move with a 3 inch dredge? Mr. Alpers replied that no specific measurement was made, but he estimated between 1 to 10 cubic yards was moved.
- Several members expressed concern that they would not have chosen to dredge at the site shown in Mr. Alpers study.
- How did you calculate the total sediment load? Mr. Alpers replied that the researchers would go out to the site during storm events and on regular monthly intervals.
- A members cited a study that concluded that the totally amount of mercury discharged was 32 kg per day and that streams draining the mother load were not the highest source of mercury.
- Several members expressed a concern that the material moved figures were incorrect because they were based on incorrect equipment charts and estimated the time in the water actually moving material through the dredge to be greater than what is reasonable.
- This study should include 10, 20, and 50 year flood data to improve its accuracy. Mr. Alpers replied that the study includes wet year data that includes past flood events.
- The study should include sampling the plum itself.

- Did you say the first flush is almost 50 nanograms per liter? If the reactive portion can increase, is that what the dredge is doing with that material? The tank experiment suggests that particles stay suspended for 2 days.

Mr. Trucker then presented a history of tribal fish allocations and harvesting.

- According to Mr. Trucker, Native American Tribes have subsisted on salmon since time immemorial. Tribes pre-contact had the technology to catch every fish in the river, but they had a devote commitment to resource management. All the tribes in the Klamath area are really different. Karuk fish by dipping. The right to fish is protected by Ca state law. It is the position of the Karuk tribe that they have the right to fish.
- In the 1970s there were the fish wars. Federal marshals shut down Indian fisheries at the mouth of the Klamath. Ray Matz was arrested took his case to the Supreme Court and won fishing rights for Indians of the Hoopa Valley Reservation.
- Mr. Tucker then presented how the fish are split up by the Pacific Fishery Management Council.
- Mr. Trucker explained that different Karuk families have the right to fish behind certain rocks. Their fishing practices are gear limited. Today the Karuk catch hundreds of fish, rare that they get over a 1000 fish in one year.
- Harvesting fish is the best way to maintaining healthy populations of fish. This is described by fishery biologists as the Ricker Curve. You can find the maximum sustained curve. There is a huge amount of variability by year, but can make the curve. Manage the spawning floor to have 35,000 spawners. If there are too many fish instances of disease increase.
- Hear from both sport fishing communities that there is no regulation of Indian fishing. That assumption is untrue, Indian fishing is a highly regulated industry. There is a very strong cultural commitment to be good stewards of the resources. Karuk religious practices act as resource management plan.

The following questions and comments were made:

- How does this apply to a suction dredge mining and CEQA? Mr. Trucker mentioned that Karuk fishing practices are protected by California law, but they are protected by DFG regulations not a law. Please cite the law referenced.
- Does the Indian fishing right override the endangered species act? Mr. Trucker replied that since the Karuk use non-lethal fishing methods they throw back the Coho Salmon and therefore do not harm them.

- This group needs to understand that the current litigation is coming from the Karuk Tribal Government not the members themselves. Several members are being affected by the new suction dredge rules along with everyone else.
- Provide the PAC members copies of the Klamath Salmon Report (see **Action Item 2**).

Informational Presentations – continued

The following additional presentations were made:

- Techniques of Power Sluicing, High-Banking, and Dredging (P. Keene)
- DFG Enforcement History and Capabilities (R. Kelly)
- What Changed Since 1994 Regulatory Conditions (M. Stevenson)

Patrick Keene, Keene Engineering, presented an overview of suction dredge mining and showed pictures of his mining operational practices and an underwater video of a suction dredge operating. The general points Mr. Keene touched upon were as follows:

- It is important to have the right water plus material ratio while operating a suction dredge, otherwise a clog could result.
- A very healthy miner may be able to mine for 6 hours a day, but a large portion of that time is not spent moving material through the dredge. Most of the time miners are moving about 70% rocks and 30% material.
- Northern California communities have been economically impacted by the restriction on suction dredge mining.
- Power sluicing is done out of the stream. A miner places a water pump from the stream to the shore. Rinse material is captured in a settling pond. Power sluicing is just a spray bar to wash away material. High banking removes sediment at certain layers. Suction dredge miners rarely do power sluicing or high banking because it is often not economically viable.

The following questions and comments were made:

- Have seen more evident plum discharges on smaller rivers. Does the size of the plum depend on the material in the river or the way the suction dredger is being operated? Mr. Keene replied that the plum usually dissipates after 15-20 feet. The material going through the dredge is going to affect the size of the plum, and sediments can vary from river to river.
- Has there been a survey that says all rivers were scoured down to bedrock?
- Have experienced turbidity on the North Fork of the American River for 5 straight hours.
- What are the interactions between rafters / kayakers and suction dredge miners? Mr. Keene replied that all of his interactions were positive.

- What do miners do with the mercury they find? Mr. Keene responded that the gold is further processed to remove the mercury.
- In a typical year, how many days do you dredge, and for how many hours? Mr. Keene responded that most prospectors are out at their site for approximately 60-70 days a year for 4-6 hours per day (with weekends off).
- Do miners typically set up in a different area each year? Mr. Keene replied yes, miners typically move around the river unless there was a recent major flood that deposited a large amount of material.
- Do you have to use mercury to process your concentrates? Mr. Keene replied that he does not use mercury.
- How many divers can mine in one area? Mr. Keene replied that it depended, but as long as each one was looking out for the other miners while they were moving material several people could mine the same area.
- Do miners work a whole cross section of the river or just the center? Another member replied that a miner typically looks for the gold line, which is typically in the deepest part of the river, and once they find it they work the line up river.

Randy Kelly, DFG, presented an overview of DFG Enforcement History and Capabilities. Mr. Kelly disclosed the number of DFG wardens over the past few years and spoke about how the decline in warden numbers has affected the departments' ability to enforce regulations.

The following questions and comments were made:

- DFG should collect information on violators and the consequences of the violations. Mr. Kelly responded that DFG is in the process of developing a new computer tracking system that will track tickets but acknowledged that it is difficult to prosecute environmental cases in certain counties.
- Regulations are only as good as enforcement.

Michael Stevenson, Horizon Water and Environmental, presented an overview on what has changed since the 1994 Regulatory Conditions. His presentation centered on the following changes:

- Physical regulatory conditions
- Variety of new species listings
- New critical habitat designations
- New Total Daily Maximum Load (TMDL) listings.

The following questions and comments were made:

- DFG should collect additional geology studies for the literature review (see **Action Item 3**).

Developing Potential Regulatory Approaches

Mr. McInerny asked each PAC member to take 2 minutes and describe the basic elements they would like to see in a state-wide regulation.

The PAC proposed the following regulatory approaches:

- It would make sense to eliminate suction dredging in all areas that are list on the 303 D list of the Clean Water Act for either sediment or mercury or have listed species living in the vicinity. There should be an update process outlines in the regulation.
- Clarify areas that are open to suction dredge mining and those areas that are closed. Regulations should address areas that are closed to mineral entry.
- Need to have density limits in certain areas and site specific permits so DFG knows where a suction dredger is going to be mining. Need a biological assessment and adequate compliance monitoring. Need to understand how to encourage improvements to equipment (propane vs. gas suction dredge motor).
- Should revisit regulations for standing water and flowing water. No winching should be allowed. Should vet regulations with county governments.
- Should focus on local control. Regulations need to consider river operations. Keep the 94 regulations in the aspects of how their regulated differently by county.
- Regulations should address and provide protection for federally listed species and species of special concern.
- Need to develop realistic regulations that reflect the actual harm being done.
- No winching should be allowed. Would like to see people paid more for mercury than gold as an incentive to get mercury out of the river.
- Eliminating winching would decrease miner safety. Do not need to make the regulations more restrictive.
- Create a licensing program for suction dredging similar to a hunting license.
- Individuals could be regulated differently than a mining club.
- Should not be special permits that deviate from the standard. The complexity of streams and schedules is such that it is too complex for suction dredgers.
- Regulation and permit process should consider incidental take. Allow larger suction dredge nozzles.
- Regulations should be reasonable and practical, not conflict with federal laws and included an order of magnitude.
- DFG needs to determine if suction dredging is deleterious to fish. Only after the determination should a permit be issued.
- More site specific area closures are a good tool, but the process should be simplified. There should be clearly stated reasons for why certain rivers or areas are closed. Should build in an adaptive management strategy.

- Support the 1994 regulations with limited resources. Suction dredging is ‘de minimis’ or at least does very little harm. New regulation should say that using a 6 inch or less hose is ‘de minimis’.
- Want regulations to reflect the positive affect dredging has on the environment. Would like suction dredging to be identified as a best management practice.
- Do not think the 1994 regulations should be changed. Need to include a mercury program where people can turn their mercury in.
- The 1994 regulations are a good starting place, but should be made more dynamic. Need to take into consideration where people are dredging. California should create a suction dredge mercury removal program.

Possible Presentations for the Next PAC Meeting

Mr. McNerny asked the group for feedback regarding what presentations should be made during meeting 3. The following presentation topic suggestions were made:

- Fish
- Mercury
- Miners Rights
- Differences between individual miners and a mining club
- Water quality, turbidity, effects of scale.

The group then agreed to begin the next meeting at 9am. Mr. McNerny thanked the PAC members for attending. The meeting was adjourned.

Draft Meeting Summary

Suction Dredge Permit Program Public Advisory Committee Meeting #3

Date: March 11, 2010, 9:00 am – 4:00 pm
Location: Department of Fish and Game Office of Training and Development, 1740 N. Market Blvd., Sacramento, CA

MEETING ATTENDANCE:

Public Advisory Committee Members

Name	Organization
Alison Harvey	Friends of the North Fork and California Tribal Business Alliance
Carrie Monohan	Sierra Fund
Chip Hess	The Miners Cache
Claudia Wise	retired U.S. EPA Physical Scientist
Craig Tucker	Karuk Tribe
George Wheeldon	Registered Geologist, El Dorado County
Izzy Martin	Sierra Fund
Jeff Shellito	Friends of North Fork
Jerry Hobbs	Public Lands for the People
Jim Aubert	Public Lands for the People
Jim Foley	The New 49'ers
Joseph Greene	Retired research scientist
Ken Oliver	Siskiyou County
Pat Keene	Keene Engineering
Petey Brucker	Salmon River Restoration Council
Rachel Dunn	The New 49'ers
Ray Nutting	El Dorado County
Ric Costales	Siskiyou County
Rich Teixeira	US Forest Service
Steve Evans	Friends of the River
Tim Carroll	Bureau of Land Management, California State Office
Walt Duffy	Leader, California Cooperative Research Unit, US Geological Survey, Cooperative Research Units
Walt Wegner	Keene Engineering

Department of Fish and Game and Consultants

Mark Stopher	Department of Fish and Game
John Hanson	Department of Fish and Game
Bernie Aguilar	Department of Fish and Game
Randy Kelly	Department of Fish and Game
Rick Humphreys	State Water Resources Control Board
Kevin Fisher	Horizon Water and Environmental
Tom Trexler	Theta Consulting Services
Austin McNerny	Center for Collaborative Policy
Jodie Monaghan	Center for Collaborative Policy
Christal Love	Center for Collaborative Policy

Action Items

1. DFG will provide a copy of Claudia Wise's PowerPoint presentation materials.
2. CCP will provide PAC members with a high level aggregate meeting summary of the three meetings.
3. Ken Oliver will provide mining safety regulations.

Meeting Summary

Mark Stopher, Department of Fish and Game (DFG), welcomed participants and thanked them for coming and remarked that one measure of success is that the Public Advisory Committee (PAC) members decided to come back for the third meeting. He said that DFG considers the PAC to have been a success. He announced that at the end of the meeting each PAC member would be asked to state what the regulations should or should not include.

Introductions

Facilitator Austin McNerny, Center of Collaborative Policy (CCP), welcomed the group and asked committee members to introduce themselves. Mr. McNerny then reviewed the meeting agenda, meeting goals, and meeting materials, adding that Claudia Wise's presentation would be distributed after the meeting (see **Action Item 1**). He announced that all three draft meeting summaries and a high level aggregate meeting summary will be distributed and comments solicited from the PAC members (see **Action Item 2**).

PAC members had the following questions and comments:

- A member suggested moving the deleterious discussion to the end of the meeting so that the members could benefit from all of the education presentations. Mr. McNerny replied that he would take the suggestion under consideration.

- A member remarked that they realized they had forgotten to include two regulatory approaches after the previous meeting. Mr. McInerney replied that members are welcome to send in additional ideas via email and / or propose corrections to the draft meeting summary.
- Another member announced that he was in the process of locating the regulations on mining safety practices to help inform the decision regarding whether or not to allow winching (see **Action Item 3**).

Information Presentations

A series of informational presentations were made by various PAC members. The purpose of the presentations was to share relevant information with one another and help inform the definition of deleterious discussion.

Tom Trexler, Horizon Water and Environment, presented an overview of geomorphic considerations relevant to suction dredge activities. PAC members had the following questions and comments:

- A member asked for more information regarding high water flows and sediment transport and what happens to the river bed during a major storm event. Mr. Trexler replied that during a high flow event there would be less sediment moved per unit of water, but a greater amount of sediment would be moved overall. He added that during a massive storm some material on the riverbed is tumbled around the river bed and some of it is moved downstream.
- A member stated that the information presented during the presentation was not fact, but rather, someone's opinion based on their education. Mr. Trexler responded that the factual science presented was based upon physics.
- A question was raised as to whether the Environmental Impact Report (EIR) would conduct bank-fold discharge studies for the rivers in their area. Mr. Trexler responded that the EIR would not conduct studies for each individual river throughout California.
- A member asked where they would be able to find more information regarding whether streams reset themselves. Mr. Trexler responded that that information would be included in the EIR.
- A member stressed the importance of considering which species are present when decided how to evaluate a stream.
- Another member suggested evaluating each river reach rather than evaluating on a statewide level.

Walt Duffy, U.S. Geological Survey, then presented an overview of the potential influence of recreational gold dredging on fishes in California Rivers. The following questions and comments were made:

- Can you explain the life history and spawning methods of fish in the Sierra Nevada Mountains? Mr. Duffy replied that genetics has not been able to distinguish between Sierra rainbow trout and steelhead. The spawning behaviors can be specific to the type of fish.

- A member asked when the redds will be in the river. Mr. Duffy replied the redd location has more to do with the size of the fish than the time of the year.
- A member asked if there has been any analysis related to the noise of the suction dredge and its effects on fish. Mr. Duffy replied that fish have something called a lateral line, which makes them sensitive to noise.
- A member stressed that some aquatic invertebrates vary and the cumulative effect of suction dredge mining on fish is unknown.
- A member suggested considering net effect numbers. Mr. Duffy replied that there is not a comprehensive study statewide on the net effect of suction dredging, but there is information for particular creeks.
- A member pointed out the many of the fish studies are conducted in a lab where fish are unable to leave the experiment vicinity.

Claudia Wise, Retired Physical Scientist, presented information on Selenium antagonism to mercury, and whether it causes significant harm to fish and human health. The following questions and comments were made:

- Can anything break the selenium and mercury bond? Ms. Wise responded that it would be difficult to break because the bond forms a new molecule.
- The statement that there have never been any studies showing mercury to have had caused negative effects to fish is in contradiction with the 10 years of DFG public health warnings. Several members agreed that making that conclusion seemed to be in contradiction with their current understanding of mercury in the environment and pointed to mercury hot spots within in Delta and weak eggshells in bird species.
- A member asked where selenium is distributed in California. Ms. Wise responded that selenium can be found throughout California.
- A member expressed concern that the selenium sampling study presented by Ms. Wise sampled an area in the Central Valley where selenium is plentiful rather than up in the gold country where it is scarce. Ms. Wise replied that she understood selenium to be plentiful throughout California.

Joseph Green, retired biologist / ecotoxicologist, presented a summary of studies done on turbidity and the effect of scale. Mr. Green's conclusions were:

- Turbidity does not cause the water to warm and takes away nothing fish require.
- Chemicals suspended in water fall out of suspension a short distance below the dredge.
- Small-scale gold suction dredging temporarily affects a very small area in the environment relative to the entire area in which all dredges operate.
- Excavations from dredging can result in temporarily formed pools (refugia) or deepen existing pools which may improve fish habitat.
- Studies do not indicate any strong cumulative effects from multiple placer mining operations.
- Few redds are constructed upon suction dredge tailings and usually only when natural substrates are in short supply.

The following questions and comments were made:

- The principle source of mercury is volcanic rather than mining.
- A member asked if salmon had been observed using the holes created by suction dredge mining. Mr. Green replied that they had.
- Another member added that during one spring survey the only place they found fish was in the suction dredge holes. A member responded that fish behave differently depending on the yearly conditions and that there are both pros and cons to the suction dredge mining holes.
- A member questioned the conclusion that turbidity does not cause the water to warm. Mr. Green replied that the turbidity from a dredge does not heat the water nor does it hurt the fish.
- A member observed reaching a different conclusion after reading one of the cited studies, stating that the sample study used was not robust enough to make the statistical findings. Several members agreed and suggested that the same literature has been used to present two different sides of the issue.
- A member expressed a desire for DFG to look at the material moved tables very carefully and take into account human limitations.
- Members discussed stream composition and agreed that it would have an effect on the sediment plume and the potential impact to fish.
- A member asked whether any of the data presented was collected from the Sierra Nevada Mountain range. Mr. Green said there was not.

Foothill Yellow Legged Frog Discussion

Kevin Fisher, Horizon Water and Environment, presented a brief overview of the Foothill Yellow Legged Frog and asked the group to consider how regulatory tools can be applied to suction dredging in areas inhabited by the frog.

The following questions and comments were made:

- A member asked if the frog eggs are mobile right after they hatch. Mr. Fisher replied that the young frogs stay very close to the same place for a period of time after they hatch and that their habitat is restricted to the stream throughout their life.
- An inconstant waterline creates an environment where Yellow Legged Frogs cannot survive.
- The regulations should be site specific and take into account whether or not the species exists in that location.
- Rather than site specific, seasonal closures could be considered.
- Need to add the concept of incidental take.
- DFG should allow special use permits again.
- A human doing anything in the stream has the potential to impact the frog. If there are several million frogs and 3,200 suction dredge miners DFG needs to consider the scale of the regulation.

- DFG should map the critical habitat for Yellow Legged Frogs and allow special use permits.
- The timing of Yellow Legged Frog egg laying varies by location. The sensitivity range covers the full suction dredge mining window.
- Site specific surveys would need to be built into the special use permit and would be costly.
- The special use permit should track the mining location and size of equipment being used.
- Need to look at the effect of sediment on the Yellow Legged Frog eggs.
- The special permit would be a project under CEQA.
- If the goal is to preserve frogs, the management action would be to prohibit suction dredge mining within their range.

Mr. Stopher added that one of the reasons why DFG chose this species for this discussion is because it is widely distributed throughout California and its population is declining for several reasons. Yellow Legged Frogs do not exist in many of the places they used to.

Mr. Fisher then presented an overview of life history requirements, distribution and potential concerns related to dredge mining for Santa Ana Sucker. He then asked the group how regulatory tools could be applied in areas inhabited by the Santa Ana Sucker.

The following questions and comments were made:

- The Santa Ana Sucker does very well in the dredge holes.
- Noticed the protected habitat expanded over time on the map shown, does that mean the Santa Ana Sucker population has grown? Mr. Fisher replied no, that the expansion does not indicate an increase in population.
- The Santa Ana Sucker population decline is linked to water quality.
- Suction dredge mining has a de minimis impact on the Santa Ana Sucker. There could be as many as 20 dredgers on the river reach.
- Should defer to fishery experts such as Peter Moyle who does good science.

Developing a Definition of Deleterious

Mr. McInerny reviewed initial DFG definition and the input received to date from the PAC members regarding their input on how 'deleterious' should be defined. Mr. Stopher added that he would like the definition to address issues of space and time.

The following questions and comments were made:

- Would like to use Fish and Game Code 5650 as the basis of the definition. Mr. Stopher replied that Fish and Game Code 5650 states that things that are bad for fish must be kept out of the water. He referred the group to Fish and Game Code 5653 which relates directly to suction dredge mining.
- Would like to draw on the appeals court ruling and Webster's dictionary definition.

- Several members expressed concern that suction dredge mining does not deposit anything into the water and should not be regulated like it does.
- The PAC members generally fell into one of two groups: those that support the dictionary basis for the definition and those that want a more narrow definition.
- A member stressed the importance of proving harm before defining ‘deleterious’.
- A member observed that if suction dredging is releasing mercury into the waterway that would otherwise be captured in the river bed that action would be considered harmful.
- The regulation has an obligation to manage species other than those that are listed. The Endangered Species Act should not be part of the definition.
- Do not think DFG has the authority to interpret the term ‘deleterious’.
- A member referred to the presentation Charlie Alpers made in the previous meeting and cited his findings as an indication that suction dredge mining can create water quality impacts. Several other members disagreed and expressed concern regarding the location where Mr. Alpers chose to take samples.
- A member suggested that ‘deleterious’ has different thresholds for different species at different times. Site specific considerations will need to be made.

Final Thoughts for DFG’s Consideration

Mr. McInerny then asked each PAC member to summarize their main issues / concerns and provide their opinion on what DFG should consider when developing the potential regulatory options. The PAC proposed the following regulatory approaches:

- Keep the original regulations from 1994, have a special use permit, longer dredging season, and bigger nozzles.
- Need to consider more than just the impact of a single dredge operation. We have a changing world, global warming, Endangered Species Act, and modified regulations. The regulation need to look at the long-term impacts.
- Have to consider the no project alternative. Do not think DFG can permit something that causes serious issues for another agency. There are serious enforcement problems related to the suction dredge permit. How can the current fees cover the cost of the special use permit?
- Should address the Clean Water Act, and look at high-banking. Enforceability is an issue because wardens are limited.
- Note the CEQA definition of significance; dredging cannot have sig environmental effect. Should stay with the 1994 regulations and add special use permits.
- Have not seen any new evidence of harm. Should stay with the 1994 regulations and add special use permits. Prohibition is not a legal option.
- Should stay with the 1994 regulations and relook at the river reaches that have been closed to suction dredge mining. Reasons for stream closure should be stated.
- Should stay with the 1994 regulations and collect needed information via the special use permit.
- Permits need to be for specific locations. Need to coordinate regulations with other regulatory agencies. Could require a plan of operations as part of the permit. Need to

understand the difference between what happens during a subsistence miner operation and mining club.

- Should differentiate between mining clubs and individual miners.
- Need to carefully consider fish habitat and population numbers.
- The suction dredge application needs to be equitable.
- Do not think special use permits are reasonable or enforceable under the current fee structure.
- Consider suction dredge mining to be a best management practice compared to previous methods.
- Should differentiate between recreational and commercial suction dredge mining and consider the geographic differences throughout the state. The special use permit will pose an enforcement problem.
- The definition of deleterious should not conflict with the Surface Mining and Reclamation Act of 1975 (SMARA).
- Definition should be consistent with fed regulations.
- Mining is a paramount use of the river, and the safe ecological way of mining is suction dredging. Incidental take allowances need to be given to the dredgers. Public education is a critical component.

Recap and Next Steps

Mr. McInerny thanked the PAC members and stated that he felt as though the group was better off then they were before the meetings. Mr. Stopher added that there were several things DFG heard loud and clear, some of which they had already thought about and some they had not. He then reviewed the next steps in the EIR process and thanked the group for attending. The meeting was adjourned.