

**Karuk Tribe • Yurok Tribe • Klamath Riverkeeper • Pacific Coast Federation of Fishermen's Associations • Institute for Fisheries Resources • Center for Biological Diversity • California Trout • American Whitewater • Friends of the River • Environmental Law Foundation • Friends of Trinity River • The Butte Environmental Council • Northern California Council, Federation of Fly Fishers • The Sierra Fund • California Tribal Business Alliance • California Association of Tribal Governments • Environmental Justice Coalition for Water • Klamath-Siskiyou Wildlands Center • Rogue Riverkeeper • Environmental Protection and Information Center • Northcoast Environmental Center • California Sportfishing Protection Alliance**

December 3, 2009

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

Dear Mr. Stopher:

The Commenters who worked collaboratively on this document appreciate the opportunity to submit these written comments. 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 should be considered as additions to comments submitted by the Karuk Tribe and others in response to the October, 2007 Public Notice by the Department (submitted on December 17, 2007) and comments submitted by the Karuk Tribe and others to the State Water Resources Control Board in June 2007 regarding suction dredge impacts on water quality.

These comments are submitted on behalf of the following groups and governments: Karuk Tribe, Yurok Tribe, Klamath Riverkeeper, Pacific Coast Federation of Fishermen's Associations, Institute for Fisheries Resources , Center for Biological Diversity, California Trout, Friends of the River, Environmental Law Foundation, Friends of Trinity River, The Butte Environmental Council, California Associations of Tribal Governments, Northern California Council of the Federation of Fly Fishers, The Sierra Fund, California Tribal Business Alliance, Environmental Justice Coalition for Water, American Whitewater, Klamath-Siskiyou Wildlands Center, Environmental Protection Information Center, Northcoast Environmental Center, Rogue Riverkeeper, and California Sportfishing Protection Alliance.

Sincerely,

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## **I. BACKGROUND**

California's native fish and wildlife populations are in steep decline and the majority of the state's waterways are suffering from poor water quality. The factors contributing to these declines are varied and range from activities such as urban development, irresponsible resource extraction practices, agricultural operations, global warming, and more.

Declines in fish and wildlife populations and impairments to water quality have a broad range of negative impacts to Californians' quality of life. For example, all Californians are dependant on naturally clean waterways for fisheries, recreation, and affordable drinking water. For others, declines in commercially valuable fish stocks have led to fisheries closures and concomitant losses in jobs and associated economic hardships. For others, the loss of a particular species of plant or animal and degradation of water quality in specific waterways affect religious and spiritual practices or otherwise affect cultural traditions. The latter is particularly true of California's Indigenous Tribes.

Indeed, many activities contribute to the aforementioned negative impacts to the environment, economy, and culture of Californians for many diverse walks of life. Many local, state, and federal laws are designed to evaluate many of these factors individually and establish rules and regulations as appropriate.

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, Klamath Riverkeeper, the Sierra Fund, Friends of the North Fork, Friends of the River, California Trout, the California Tribal Business Alliance and more to support legislation resulting in a statewide moratorium on suction dredge mining until the court order was fulfilled (SB 670, Wiggins).

## **II. COMMENTS**

### **COMMENT # 1: THE DEPARTMENT MUST ASSURE THAT AN APPROPRIATE CEQA ANALYSIS OCCURS WHEN ISSUING PERMITS**

#### ***Reasoning***

The stated intent of the Initial Study is to develop suction dredge mining regulations that comply with the 2006 Order and Consent Judgment (*Karuk Tribe v. California Department of Fish and Game*, Alameda Superior Court, Case No. 05211597, dated December 20, 2006) and Fish and Game Code §§5653(b) and 5653.9. The commenters unequivocally contend that compliance with Fish and Game Code §§5653, 5653.9 and CEQA require two discretionary acts: (1) the adoption of regulations that comply with CEQA and the APA, and (2) a determination upon the issuance of each permit that the permitted activity will not cause deleterious impacts to fish.

In addition to amending the regulations for the suction dredge mining program pursuant to Fish and Game Code sections 5653 and 5653.9, the Department must assure that the future issuance of suction dredge permits complies with individual CEQA review. The SEIR and regulations must be explicit in requiring CEQA review for each individual permit issued under the new regulations for the suction dredge mining program.

As recognized by the legislature and the courts, each individual permit issued by the Department is subject to independent CEQA review and must be analyzed independently due to the unique circumstances that surround each permit. The Supreme Court has repeatedly held that CEQA must be interpreted to “afford the fullest possible protection to the environment.”<sup>1</sup> In order to carry out that objective CEQA applies to all “discretionary projects proposed to be carried out or approved by public agencies.”<sup>2</sup>

The issuance of individual suction dredge permits constitutes a project requiring review under CEQA. “CEQA defines a ‘project’ extremely broadly.”<sup>3</sup> The issuance of a permit by the Department to conduct mining operations in jurisdictional waterways that results in potentially significant environmental impacts falls within CEQA’s statutory purview. Importantly, the legislature has specifically recognized that individual suction dredge permits are subject to CEQA.<sup>4</sup>

The Department’s issuance of a suction dredge permit is a discretionary act. A discretionary action is one that “requires the exercise of judgment or deliberation” on the part of a public agency in deciding whether “to approve or disapprove a particular activity.”<sup>5</sup> In determining whether to issue a suction dredge mining permit the Department must make an individual determination on permit applications that “the operation will not be deleterious to fish.”<sup>6</sup> In ruling on the Department’s decision making under Fish and Game Code § 5653, the Alameda County Superior Court found:

“...that issuance of a suction dredge permit without a discretionary determination that the operation proposed by the license applicant is not deleterious to fish is a direct violation of the duty imposed on the DFG.”<sup>7</sup>

Thus, each permit requires the Department’s discretion. This requirement is independent from the requirement to issue regulations under Fish and Game Code § 5653.9 and assures that the regulations implementing the program comply with CEQA.

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<sup>1</sup> *Wildlife Alive v. Chickering*, 18 Cal. 3d 190, 206 (1976)

<sup>2</sup> Pub. Res. Code § 21080(a).

<sup>3</sup> *Azusa Land Reclamation Co. v. State of California*, 52 Cal. App 3d 415, 434 (1988).

<sup>4</sup> Fish and Game Code § 5653.1(a), “The issuance of permits to operate vacuum or suction dredge equipment is a project pursuant to the California Environmental Quality Act.”

<sup>5</sup> CEQA Guidelines § 15357.

<sup>6</sup> Fish and Game Code § 5653(b).

<sup>7</sup> Order Granting Plaintiff’s Preliminary Injunction, *Hillman v. Department of Fish and Game*, Alameda County Superior Court, Case No. 09434444 at 10 (July 10, 2009).

The courts have further determined that the issuance of individual suction dredge permits is an independent discretionary project triggering CEQA. Looking specifically at whether the Department was violating CEQA in issuing suction dredge permits the Honorable Frank Roesch found that:

“...each permit granted by the DFG involves a discretionary approval triggering a CEQA review. The DFG must exercise its discretion each time it issues a suction dredge permit”<sup>7</sup>

Moreover, the unique factual circumstances of each suction dredge mining application and permit require an independent review of the environmental effects of issuing the permit. Each permit constitutes a different set of site specific conditions involving, but not limited to, differences in ecology, biology, hydrology, water quality, and geology. The range of suction dredges with varying levels of impacts requires a unique analysis of each dredge’s potential to cause environmental impacts.<sup>8</sup> Also, the extent, duration, and variability of the suction dredge activity will vary by permit and individual and must be considered. A weekend miner, who only deploys his dredge over a limited time period, will have a different impact than a full-time miner who runs a dredge over a long period.

Within this complex factual environment the Department must make an individualized showing that the permit will not have deleterious effects on fish.<sup>9</sup> As the legislature and courts have made clear this determination must be made in concert with the CEQA process for each permit.

### ***Recommendation***

The Amended Regulations and EIR must make clear that each individual permit is subject to separate CEQA review in order to analyze the potentially significant impacts of the Department’s issuance of a permit and to assure that “the operation will not be deleterious to fish.”

**COMMENT # 2: THE SCOPE OF THE REVIEW SHOULD FOCUS ON WHICH RIVER SEGMENTS THE DEPARTMENT CAN AFFIRMATIVELY PROVE THAT ANY SUCTION DREDGE MINING WILL NOT CAUSE DELETERIOUS IMPACTS TO FISH.**

### ***Reasoning***

As stated above, the Commenters contend that the Department must review each individual permit to determine that the permit applicant’s suction dredge mining operation will not cause deleterious impacts to fish. However, from the Department’s description of its obligations in the Initial Study, it appears the Department is taking the position that the adoption of new regulations is the only discretionary act required under the Fish and Game Code and CEQA.

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<sup>8</sup> Initial Study, pps 12-16.

<sup>9</sup> Fish and Game Code § 5653(b).

While the Commenters do not sanction the Department's interpretation of its duties, we suggest the following alternative approach because we believe it could provide an equivalent level of protection to California's rivers and wildlife that was intended when the Legislature amended the Fish and Game suction dredge mining statutes in the early 1990s.

Commenters believe that the permitting program should be limited to include only those rivers in which the Department can affirmatively prove that no deleterious impacts will occur to fish. This position is consistent with the baseline established by the Department for the review; specifically that it "is one that assumes no suction dredging in California."<sup>10</sup> Commenters are pleased that the Department adopted this baseline and agree that it is appropriate.

Under the approach, a river segment would not be allowed to be dredged if, after the Department considers the body of literature and any other evidence, it finds either: (1) that suction dredge mining would result in negative impacts to fish and their habitat, (2) the evidence fails to conclusively determine that no negative impacts would occur, yet suggests such impacts are likely or possible; or (3) there simply is a lack of evidence or other data regarding a particular river segment.

The Department would not be allowed to make a determination that suction dredge mining would be allowed on large sections of rivers, particularly where no studies have been conducted or no other evidence exists to definitively establish a no deleterious impact result.

*Recommendation:*

As an initial matter, Commenters believe the following rivers should be excluded from the suction dredge mining program because dredging is particularly likely to result in deleterious effects:

1. All river segments with historical gold mining activities in which mercury was utilized;
2. River segments listed as impaired under 303(d) of the Clean Water Act due to turbidity, water temperature, sediment, or mercury;
3. All river or stream segments designated as components of the National Wild and Scenic Rivers System or deemed eligible for protection by federal agencies. Federal 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 protected rivers must meet or exceed federal criteria or federally approved state standards for aesthetics, fish and wildlife propagation, and primary contact recreation<sup>11</sup>

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<sup>10</sup> Initial Study, p. 22.

<sup>11</sup> Public Resources Code, Chapter 1.4 (commencing with Section 5093.50) of Division 5.

(Commenters note that the Initial Study contains an incomplete list of State and Federal Wild and Scenic Rivers on page 7);

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;<sup>12</sup>
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, fuel spillages, or handling of hazardous materials.

In addition, the Department’s regulations must clearly state that the Department has the right to revoke, suspend, or refuse to be renew a permit should it discovery evidence showing that deleterious impacts will occur to fish.

Lastly, since the CEQA review includes a review of water quality issues (and, particularly because the State Water Board is likely to use the findings for its own permitting program), Commenters believe that the Department should conduct an anti-degradation analysis. This would require a river-by-river analysis of the baseline water quality, a study of the impacts from suction dredge mining, and the requisite analysis to determine whether any degradation will occur to water quality from suction dredging activity. If the answer is in the affirmative, suction dredge mining cannot be allowed. The point of this analysis is determine *beforehand* whether suction dredging in a particular area will degrade water quality – rather than have it occur and try to fix it later. (*See, also*, Comments #4 and #5 below.)

**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***

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<sup>12</sup> Public Resources Code Section 5093.61.

The Department should limit the scope of its suction dredge program on the basis of what its finances allow under the current fee structure. In other words, it should limit the program to what it can honestly and pragmatically enforce and manage. If the Department only has the means to monitor the impacts of suction dredge mining on a limited number of river segments and streams throughout the state, then it must limit the river segments and streams in which it allows suction dredge mining to occur. This is the only approach allowable in order for the Department to be able to conclude that each operation will not cause deleterious impacts to fish.

### ***Recommendation***

The SEIR should provide an economic analysis and policy proposal based on what river segments the Department can afford to adequately manage and enforce regulations.

### **COMMENT #4: THE EIR MUST COMPLY WITH THE DEPARTMENT'S DUTY UNDER CEQA TO INFORM THE PUBLIC OF HOW THE REVIEW WILL NOT CONFLICT WITH EXISTING LAWS AND THE FACILITATION OF OTHER PERMITTING PROGRAMS**

### ***Reasoning***

The EIR must fully disclose and analyze the Project's potential conflicts with existing laws and regulatory programs. An EIR is required to be an informational document from which the public can properly weigh any adverse effects presented by a project.<sup>13</sup> In conducting this analysis, the agency "must use its best efforts to find out and disclose all that it reasonably can" and cannot simply hide behind its failure to gather and analyze the necessary information.<sup>14</sup>

### ***Recommendation***

A key component of the informational requirements of CEQA is the full disclosure and analysis of conflicts with other environmental laws. Indeed, CEQA requires the EIR to analyze whether the Project will "[v]iolate any water quality standards or waste discharge requirements."<sup>15</sup> 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. To that end the EIR 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 and the national Endangered Species Act.

### **COMMENT # 5: THE INITIAL STUDY IS NOT CLEAR AS TO WHAT LEGAL AUTHORITIES ARE APPLICABLE.**

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<sup>13</sup> 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.

<sup>14</sup> Guidelines § 15144.

<sup>15</sup> Appendix G § VIII, relied upon in the Initial Study at p. 70.

## ***Reasoning***

On page 4 of the Initial Study one stated program objective is to:

*“Promulgate regulations as necessary that effectively implement Fish and Game Code section 5653 and 5653.9 and other applicable legal authorities.”*

The Commenters assert that "other applicable legal authorities" must include compliance with the Clean Water Act and any additional applicable laws typically enforced by the California State Water Resources Control Board (Water Board) such as the Porter-Cologne Act. According to the Water Board:

*“The Water Boards are currently working with the CDFG to include water quality protection measures in its regulatory program.”<sup>16</sup>*

Furthermore, it is the understanding of the Commenters that this SEIR is partially funded by the State Water Quality Control Board so that the Board can use its findings to determine whether the resulting DFG regulations satisfy the various water quality statutes enforced by the Board.

In addition, the Program Objectives fail to reflect the Department’s obligation to comply with Fish and Game Code Section 1600 regarding Streambed Alteration Agreements. As noted by the Friends of the North Fork, the Department’s failure to require suction dredge permittees to comply with the state’s Streambed Alteration Agreement statutes violates the courts’ long-standing presumption against “implied repeals.”<sup>17</sup> The courts have regularly and consistently stated that all laws on a similar subject must be given full force and effect, unless it is impossible to rationally do so. The state’s laws regarding suction dredging and streambed alteration agreements are not so fundamentally incompatible that one must be preempted by the other.

## ***Recommendation***

The SEIR should specifically describe how the project will comply with the Clean Water Act and all rules and regulations of the Water Board as well as those of Cal EPA. These agencies should be listed as additional legal authorities for the purposes of this rule making process. In addition, Cal EPA should be added to the list of “Other Public Agencies whose Approval or Input May be needed.”<sup>18</sup>

Furthermore, the program objectives should include compliance with Fish and Game Code Section 1600 regarding Streambed Alteration Agreements as well as the California Endangered Species Act and the national Endangered Species Act.

**COMMENT # 6: DESCRIPTION OF UPDATED REGULATIONS DOES NOT ADEQUATELY EVALUATE THE FULL RANGE OF ACTIVITIES TO WHICH NEW REGULATIONS MAY APPLY.**

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<sup>16</sup> [http://www.waterboards.ca.gov/water\\_issues/programs/cwa401/docs/suctiondredge/2008\\_faq.pdf](http://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/suctiondredge/2008_faq.pdf)

<sup>17</sup> Letter to Department Director Ryan Brodderick from Friends of the North Fork, June 21, 2007.

<sup>18</sup> Initial Study, p. 28.

## ***Reasoning***

The Initial Study provides a list of activities not considered suction dredging for purposes of the Proposed Program, as they are not subject to the Department's permitting authority under Fish and Game Code section 5653, subdivision (b). These activities include high banking outside of the existing water line; use of a suction dredge with its intake pipe removed but still using a pump to move water through the sluice box; and power sluicing for gold.<sup>19</sup>

The initial study adopts these existing exclusions with no consideration of the in-stream impact of these activities and with no analysis of whether or not these activities meet the definition of suction dredging as defined by Fish and Game Code Section 5653 or California Code of Regulations Section 228. Indeed, California Code of Regulations Section 228 states:

*“For purposes of these regulations, suction dredging (also called vacuum dredging) is defined as the use of a suction system to remove and return material at the bottom of a stream, river, or lake for the extraction of minerals.”*

The Commenters note that this definition does not define suction dredges as having gas or diesel powered vacuum pumps or motors or any particular type. Commenters therefore assert that many of the activities listed on page 5 of the Initial Study may meet this definition. After all, many of these activities involve sucking up the river bottom and there is nothing in the statute that justifies the narrow definition assumed in the Initial Study.

Nor does CCR 14 Section 228 define a suction dredge by specifying any particular type of pump technology or vacuum system design. The Initial Study, however, limits the definition of a suction dredge to those devices utilizing a vacuum hose operating through the Venturi effect.<sup>20</sup> The Initial Study's definition is erroneously inconsistent and narrower than that of Section 228's superseding definition. By requiring a Venturi jet in order to be considered a suction dredge pursuant to the regulations, the Department is creating an incentive to switch to a different type of pump jet to avoid regulation.

The SEIR must also fully disclose and analyze the reasonably foreseeable direct and indirect environmental effects of the activities associated with suction dredge mining. CEQA requires that the Department analyze “the whole of an action” directly undertaken, supported, or authorized by a public agency “which may cause either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment.”<sup>21</sup> As noted above, and in the Initial Study at 17-20, there is a range of reasonably foreseeable activities that result from suction dredge mining that have potentially significant environmental effects.

## ***Recommendation***

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<sup>19</sup> Initial Study, pps. 6-7.

<sup>20</sup> Initial Study, p. 5.

<sup>21</sup> Pub. Res. Code § 21065; CEQA Guidelines § 15378(a).

The SEIR should consider and evaluate the entire range of activities and technologies that meet the definition of suction dredging under California Code of Regulations Section 228 that should be governed by the new regulations. The SEIR must also fully disclose and analyze the reasonably foreseeable direct and indirect environmental effects of the activities associated with suction dredge mining.

**COMMENT # 7: THE INITIAL STUDY INAPPROPRIATELY DEFINES “DELETERIOUS EFFECT.”**

***Reasoning***

The Initial Study defines ‘deleterious effect’ as follows:

*“...the Department is guided by a common sense plain meaning of the word deleterious such that deleterious effect generally means a wide-ranging or long-lasting consequence for a fish population that extends beyond the temporal or special context of a specific direct impact. Such deleterious effects could include the following: (1) Catch, capture, kill, or injure a species listed as candidate, threatened or endangered under the state or federal Endangered Species Act; (2) A substantial reduction in the range of any species, and/or extirpation of a population; (3) A fundamental change to the structure of a community or stream ecosystem, including substantial reductions in biodiversity or resiliency to disturbance, resulting in the reasonably foreseeable consequence of (1) or (2) above.”<sup>22</sup>*

Commenters contend that the Department’s definition of “deleterious” is not based on ‘common sense’ as it purports. It should be noted that the statute does not define ‘deleterious’. Therefore, basic canons of statutory interpretation require the Department to adopt the common, lay definition – such as that found in the dictionary. The very high standard referenced in the Initial Study is not supported by the statute, case law, or common usage.

Webster’s Dictionary defines deleterious as *harmful often in a subtle or unexpected way.*<sup>23</sup>

***Recommendation***

Adopt a definition for phrase ‘deleterious effect’ that is consistent with the legally acceptable definition of the word ‘deleterious.’

**COMMENT # 8: DREDGING IMPACTS ON FISH’S ACCESS TO COLD WATER REFUGIAL AREAS JUSTIFIES A COMPLETE BAN ON DREDGING IN THESE AREAS**

***Reasoning***

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<sup>22</sup> Initial Study, pps. 7-8.

<sup>23</sup> <http://www.merriam-webster.com/dictionary/deleterious>

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.

Given that these areas are of monumental importance for fish survival (both juveniles and adults), we urge a very thorough analysis and river by river identification of thermal refugia. For a recent evaluation of the importance of thermal refugia in the Klamath system and a brief preliminary analysis of dredging impacts of such areas, please see Chapter 4 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*.<sup>24</sup>

### ***Recommendation***

The SEIS should thoroughly characterize the location of thermal refugia in each river where dredging occurs and disallow dredge mining in these zones and adjacent buffer zones. Many thermal refugial areas and associated buffer zones have been documented in various Biological Opinions and TMDLs. This evaluation could be included in the section with the heading 'Effects from Habitat Alteration' on page 46 as well as 'Impacts on Juveniles and Adults' subheading 'Behavioral effects' page 41.

### **COMMENT # 9: THE HYDROLOGY AND WATER QUALITY SECTION FAILS TO ADEQUATELY ADDRESS THE MANY HAZARDS ASSOCIATED WITH MERCURY AND SUCTION DREDGE MINING**

### ***Reasoning***

Under the Clean Water Act, states adopt water quality standards for their rivers, streams, lakes, and wetlands. These standards identify levels for pollutants, including mercury, which must be met in order to protect human health, fish, and wildlife. No person may discharge pollutants, including mercury, into waters unless the person has a permit.

The National Pollutant Discharge Elimination System (NPDES) is the permit system established by the Clean Water Act (CWA) to regulate direct wastewater discharges from wastewater treatment plants and industry. Wastewater dischargers may be required to comply with a specific mercury discharge limit (concentration and/or mass limit) or may only be required to monitor their discharges for mercury. Local discharge limits in California for mercury range from 0 to 0.1 ppm (or mg/l). The Total Maximum Daily Load is a calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards. TMDLs determine what level of pollutant load would be consistent with meeting water quality standards. The TMDL regulatory process also allocates acceptable loads among sources of the relevant pollutant.

A single recreational such dredge operating at 8 hours per days for 30 days disturbing 1-10sq/meters of stream bed in an area with a background concentration of mercury in the stream bed of 30ppb-1ppm would be responsible for mobilizing more mercury than the

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<sup>24</sup> [http://www.swrcb.ca.gov/northcoast/water\\_issues/programs/tmdls/klamath\\_river/](http://www.swrcb.ca.gov/northcoast/water_issues/programs/tmdls/klamath_river/), particularly Chapter 4.

amount of mercury mobilized over the course of an entire year for an entire watershed. NPDES permits have not been given to recreational suction dredgers nor have TMDL's been developed for the waterways in which recreation suction dredging currently takes place in California. As such, recreational suction dredging in areas with mercury contamination is likely in violation of the Clean Water Act.

Recreational suction dredging exacerbates the existing mercury contamination problems in water bodies and increase the levels of mercury contamination in fish:

- **Recreational suction dredging takes place during the warm summer months of heightened biological activity.** Recreational suction dredges disturb and release mercury primarily in the summer months when the water is warm and the flows are low and there are an abundance of bacteria rich environments where mercury methylation is likely to occur. Once mercury gets into fish it can result in impaired water body listings or 303d listings, and fish consumption advisories. There are numerous fish consumption advisories for fish in mercury impaired water bodies in the Sierra as a result of mercury contamination.<sup>25</sup>
- **Floured mercury is released back into the water body.** The project description of recreational suction dredging acknowledges the fact that miners encounter mercury when operating dredges and begs the question about the mercury that is not captured by the dredge but is instead floured by the dredge and re-released back into the water-body in a form that is more likely to methylate and be incorporated into the food chain.<sup>26</sup> The floured mercury that is released back into the water body has been changed by the dredging activity and is considered more likely to methylate because as it travels through the intake hose, educator, and header box the mercury is disturbed and broken up into very small pieces. These small pieces, or floured mercury, are readily available to bacteria because it is small (high surface area to volume ratio), oxygenated and dispersed.
- **Mercury travels downstream.** The mercury that is not captured by the dredge but is instead discharged into the water-body travels downstream through any number of varied and diverse habitats where it can be taken up by bacteria that live on the banks of the river and form floodplain wetland environments. The floodplain environment of upland rivers includes the entire 100 year floodplain because this is the area that gets inundated by storm events when the rivers swell and overtop the banks. It follows that, as long as the dredge is operating within the 100 year floodplain the dredge effluent that contains mercury is likely to contaminate the aquatic food chain. The literature review states that:

“Dissolved Hg, floured liquid Hg, and fine particle/colloid bound Hg may be transported long distances to environments favorable to methylation, e.g. wetlands, Yolo Bypass, or the Delta. It is well-known that methylation occurs in these environments.”<sup>27</sup>

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<sup>25</sup> OEHHHA, 2009 2009 Update of California Sport Fishing Advisories.  
[http://oehha.ca.gov/fish/so\\_cal/index.html](http://oehha.ca.gov/fish/so_cal/index.html).

<sup>26</sup> Humphreys, R. 2005, RWQCB Staff Report, Mercury Losses and Recovery During a Suction Dredge Test in the South Fork of the American River.

<sup>27</sup> Churchill, R. K. (2000). Contributions of Mercury to California's Environment from Mercury and Gold

It is important to note that mercury may not need to travel long distances to be methylated, in fact methylation is likely to occur in the hypoxic zone, in backwater channels and as benthic exchange in many carbon rich low oxygen environments. The different environments, times of year and extent of mercury methylation has not been studied, nor has the effect of recreational suction dredging on methylation in these different environments occurred. Until the areas with the greatest mercury contamination and methylation potential are known it is prudent to not operate recreational suction dredges, otherwise the mercury contamination problem in California may worsen.

***Recommendation:*** The effect of recreational suction dredging to water quality should be considered first and foremost among the impacts of the project. The impacts of disturbing and re-distributing mercury in the environment, on water quality, wildlife and human health and fish populations need to be fully analyzed in the SEIR.

**COMMENT # 10: THE SEIR SHOULD PROPOSE A MANDATORY PROTOCOL FOR THE TRANSPORT, USE, AND DISPOSAL OF HAZARDOUS MATERIALS INCLUDING BUT NOT LIMITED TO MERCURY, NITRIC ACID, GASOLINE, AND DIESEL FUEL.**

***Reasoning***

Page 19 of the Initial Plan describes the process by which gold can be extracted from ore using mercury and nitric acid. Additionally, the Initial Plan describes the need for miners to refuel mechanized dredges and change the oil.

All of the chemicals used in these activities are hazardous, some such as mercury, dramatically hazardous.

***Recommendation***

The SEIR should propose a mandatory protocol miners must adhere to when transporting, using, dispensing, or disposing toxic chemicals. The Commenters urge the Department to ban the use of mercury and nitric acid in mining camps and instead require that the extraction of gold from ore be done off site in a controlled environment.

**COMMENT # 11: RULES REGULATING DREDGE MINING SHOULD CONSIDER RISKS TO MINERS' HEALTH WHEN DREDGING DURING TOXIC ALGAE BLOOMS**

***Reasoning***

In water bodies throughout California, blooms of toxic blue green algae constitute a potent public health risk. In response to the threat, the California State Water Resources Control Board has organized a Blue Green Algae working group to develop guidelines

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Mining Activities—Insights from the Historical Record. Extended abstracts for the U.S. EPA-sponsored meeting, Assessing and Managing Mercury from Historic and Current Mining.

and recommendations “to provide guidance to local, state, and tribal regulators to protect people, pets, and livestock from the effects of toxic cyanobacteria in non-marine water bodies.”<sup>28</sup>

On the Klamath in particular, blooms of the blue green algae *Microcystis aeruginosa* has led to intensive monitoring for the algae and its associated toxin, microcystin. Microcystin is a potent liver toxin. According to the Blue Green Algae Working Group’s Voluntary Guidance Document:

*“Exposure to microcystins has the potential to cause acute and chronic injury, depending on the dose and duration of exposure. Sub-acute damage to the liver is likely to go unnoticed up to levels that are near severe acute damage (Chorus et al., 2000). Two aspects of chronic damage include progressive injury to the liver and tumor-promoting capacity. The International Agency for Research on Cancer found there was inadequate evidence for carcinogenicity of microcystin LR or Microcystis extracts (WHO, 2006). However like several other liver toxins, microcystins have been shown to promote liver tumors (Falconer & Buckley, 1989).”<sup>4</sup>*

Dredge miners spend hours in the Klamath and other rivers in the summer when algae blooms are at their peak and hours more in camp wearing damp wet suits. This means that as a user group, miners are extremely susceptible to the negative health affects of algal toxins.

### ***Recommendation***

In order to protect the health of miners, the Commenters urge the Department to evaluate the unique risks that toxic algae blooms pose to miners’ health and consider steps to discourage or limit dredging when algal toxin concentrations exceed guidelines developed by the Blue Green Algae working group.

## **COMMENT # 12: THE SEIR SHOULD INCLUDE A SECTION ON ENVIRONMENTAL JUSTICE**

### **Reasoning**

Several California laws require that state agencies, and California EPA in particular, to 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.*”<sup>29</sup>

Indeed, Public Resources Code sections 71110-71113 charges Cal/EPA with the mandate to conduct its programs, policies, and activities that substantially affect human health or

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<sup>28</sup> [http://www.waterboards.ca.gov/water\\_issues/programs/bluegreen\\_algae/docs/bga\\_volguidance.pdf](http://www.waterboards.ca.gov/water_issues/programs/bluegreen_algae/docs/bga_volguidance.pdf)

<sup>29</sup> Government Code section 65040.12

the environment in a manner that ensures the fair treatment of people of all races, cultures, and income levels, including minority populations and low-income populations of the state.<sup>30</sup>

Commenters have already asserted that the California Water Board and Cal EPA should be included as legal authorities for the purposes of this rule making process due in large part to the intrinsic connection the practice of suction dredging has on water quality.

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*.<sup>31</sup>

### ***Recommendation***

Commenters 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.

### **COMMENT # 13: PUBLIC MEETINGS SHOULD BE HELD IN AREAS THAT ENCOURAGE PARTICIPATION BY AFFECTED PARTIES THAT HAVE DIFFICULTY TRAVELLING LONG DISTANCES DUE TO ECONOMIC HARDSHIP**

### ***Reasoning***

As noted previously, the Karuk Tribe is one of the key parties forcing a re-evaluation of suction dredge rules and the Tribe asserts that it is one of the parties suffering most from the adverse impacts of suction dredging. In addition, it should be recognized that Karuk Tribal members most reliant on the described cultural beneficial uses of the Klamath River experience poverty rates of 90%.<sup>32</sup>

The closest scoping meeting to Orleans, the town nearest the Karuk Tribe's dip net fishery, was in Redding California over 3 hours drive away and in the evening. This means that overnight accommodations were necessary in order to attend.

### ***Recommendation***

Hold a public comment meeting on the draft SEIS in Orleans in order to allow a relevant, but economically disadvantaged community to participate in the public process. Hold

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<sup>30</sup> <http://www.calepa.ca.gov/EnvJustice/Documents/2004/Strategy/Final.pdf>

<sup>31</sup> [http://www.swrcb.ca.gov/northcoast/water\\_issues/programs/tmdls/klamath\\_river/090619/Ch\\_2\\_PS\\_090619.pdf](http://www.swrcb.ca.gov/northcoast/water_issues/programs/tmdls/klamath_river/090619/Ch_2_PS_090619.pdf)

<sup>32</sup> <http://karuk.us/press/2005/Health%20Effects%20of%20Altered%20Diet.pdf> (see page 36).

public meetings in coastal fishing communities such as Eureka to allow commercial fishing families to attend.

**COMMENT # 14: THE ODOR EMITTED FROM SUCTION DREDGES SHOULD BE CONSIDERED A ‘POTENTIALLY SIGNIFICANT IMPACT.’**

***Reasoning***

One of the most common complaints Commenters receive from the local public regarding suction dredges concerns the odor and fumes emitted. In small rural river communities, summer means hot afternoons spent beside a favorite swimming hole. Nothing ruins the experience quite like the noise and fumes produced by a dredge. The Commenters assert that this is likely an experience shared by recreational river users statewide whether they are swimmers, boaters, or hikers.

For Tribes, many areas and river reaches utilized by dredge miners are also near prayer spots and ceremonial grounds. The fumes and noise generated by dredges therefore infringe on Tribal members’ ability to freely and meaningfully engage in religious and cultural practices.

***Recommendation***

In the Air Quality section, page 34, consider ‘create objectionable odors affecting a substantial number of people’ to be a ‘Potentially Significant Impact.’

**COMMENT # 15: NOISE AND CHEMICAL IMPACTS TO JUVENILE SALMON SHOULD BE THOROUGHLY EVALUATED**

***Rationale***

The Initial Plan fails to include an evaluation of the impacts to juvenile salmonids by: (1) petroleum fuel spillage into the river from dredging engines; and (2) noise pollution from these engines and the impacts of this noise on the homing and tracking as well as predator avoidance and other survival traits of juvenile salmonids in the water near these in-river dredge operations. Noise alone, being a violent vibration of water in this case for long periods of time, can adversely affect the highly sensitive sound-receptive membranes of juvenile salmonids in many ways, potentially undermining their ability to hear and avoid predators and thus reducing their survival rates. Noise pollution and its disturbing influence on aquatic life generally is a factor that may represent a "potentially significant impact." Indeed, studies of fish response to loud underwater noises in the ocean show that noise can rupture these delicate auditory membranes, making the fish deaf to predators or the signaling from their own kind for mating. Similar deleterious affects could result from suction dredges.

***Recommendation***

The commenters believe that without any evidence to the contrary, suction dredge mining should not be allowed during times when juvenile salmonids are out-migrating. We note that the timing is different watershed to watershed and species to species. The scope of the EIR should include identifying all those time periods in which salmonids are likely to

be present in those areas (as juveniles and spawning adults), and allowing suction dredge operations ONLY in those narrow time periods during which salmonids are least likely to be impacted due to not being present.

**COMMENT # 15: A CONSIDERATION OF THE EFFECTS ON RIPARIAN HABITATS AND SENSITIVE NATURAL COMMUNITIES (PAGE 57) SHOULD THOROUGHLY CONSIDER IMPACTS TO PLANTS WITH CULTURAL AND MEDICINAL USES.**

***Reasoning***

As noted earlier, the Karuk Tribe has provided to the Water Board a report on the cultural beneficial uses of the Klamath River and associated flora and fauna. Many plants found within the riparian zone of the Klamath River have value as basket materials or are used in traditional medicines. This is true for other watersheds and resident Tribes as well.

***Recommendation***

Consider the impacts suction dredging has on riparian zone plants that have been identified as having particular uses in basketry and traditional medicines.

**COMMENT # 16: THE INITIAL PLAN FAILS TO ADEQUATELY ASSESS LOCAL TRAFFIC IMPACTS**

***Reasoning***

In rural areas such as the Klamath River corridor, there are a limited number of pull outs and the shoulders of roads can be non-existent. In the summer, at the height of the tourist season, we observe groups of miners camped in these limited small pull outs along the road. The result is that locals are unable to find safe parking to access the river, and miners maneuver RV's with dredges in tow awkwardly in these turn outs which often are flanked by blind curves. The result is a dangerous traffic situation.

***Recommendation***

Consider under the section for Transportation/Traffic (page 87), that the project constitutes a 'Potentially Significant Impact' for subheadings (a), (d), (e), and (f).

**COMMENT #17: THE INITIAL PLAN DOES NOT ADDRESS AESTHETIC IMPACTS AFTER DREDGING HAS OCCURRED**

***Reasoning***

The Initial Study's identification of aesthetic impacts is limited to those impacts while suction dredge mining is actually taking place or while dredges are in rivers and streams. The study does not identify aesthetic impacts that exist *after* the mining activity has taken place. These include ropes and cables left attached to trees and rocks on the banks, abandoned mining equipment, trash such as discarded vacuum hoses, and the dredge holes and tailings piles in the river itself.

### ***Recommendation***

Analyze residual aesthetic impacts in the SEIR and issue regulations to reduce these impacts.

### **COMMENT #18: THE EFFECTS OF INCREASED TURBIDITY ON WATER TEMPERATURE ARE NOT CONSIDERED**

#### ***Reasoning***

Turbid water absorbs more solar radiation than clear water and, resultantly, reaches higher temperatures given the same amount of solar input. Increased turbidity can dramatically raise water temperatures on streams with relatively low flow. Suction dredge mining takes place primarily in summer during periods of the lowest annual flow on many rivers. It is reasonable to expect that increased turbidity from suction dredge mining may be artificially increasing water temperatures, negatively impacting fish that are already temperature stressed.

#### ***Recommendation***

Analyze the impacts of increased turbidity on water temperature and subsequently on fisheries. Do not allow suction dredge mining on streams already experiencing temperatures stressful to fish or that are listed as temperature impaired pursuant to section 303(d) of the Clean Water Act.

### **COMMENT #19: CUMULATIVE IMPACTS OF THE PROGRAM MUST BE VERY THOROUGHLY EVALUATED AND CONSIDER EFFECTS OF RISING GOLD PRICES ON SUCTION DREDGING'S POPULARITY**

#### ***Reasoning***

The given impacts of a single dredge are multiplied when other dredges operate either concurrently or successively on a stream. The increasing price of gold is likely to result in an increase in the popularity of suction dredge mining as it did in the late 1970's and early 1980's<sup>33</sup>. Although the number of permitted suction dredges in the state has been relatively steady (around 3,200 annually), this must not be considered to necessarily indicate the future situation. An increased number of dredges operating on the state's rivers will magnify their cumulative impact.

#### ***Recommendation***

Provide a thorough analysis of cumulative impacts through time and consider the likelihood of another spike in the popularity of suction dredging and its significance to cumulative impacts. Cap the number of dredges allowed on any given stream reach to reduce their cumulative impacts.

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<sup>33</sup> Initial Study, p. 10.

**COMMENT # 20: THE INITIAL PLAN FAILS TO ADEQUATELY ASSESS THE IMPACT ON OTHER RECREATIONAL ACTIVITIES.**

***Reasoning***

The environmental check list considers recreation impacts to be less than significant. It further states that since suction dredgers appear to be a “very small proportion” to total recreation use, the Proposed Program is not anticipated to impact recreational use or facilities. This reasoning ignores the fact that on some specific segments of the Klamath and East Fork San Gabriel Rivers (for example), suction dredging has become the primary use, dominating and creating significant conflict with other uses, and, in some cases, forcing other users out of the river segments.

***Recommendation***

Identify river and stream segments where the sheer density of suction dredging impacts and conflicts with other uses and adopt appropriate regulations to mitigate and reduce this impact to insignificant levels.