Central Sierra Environmental Resource Center
Box 396, Twain Harte, CA 95383 • (209) 586-7440 • fax (209) 586-4986
Visit our website at: www.cserc.org or contact us at: johnb@cserc.org

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

Comments on Draft SEIR for Suction Dredging

Introduction

To cut to the chase, as you and your staff are aware, suction dredging mining has the potential to cause varying degrees of environmental impacts depending upon how aggressive the suctioning is done, depending upon which stream or river is being suctioned and under which conditions the mining occurs, and also depending upon whether or not there are at-risk aquatic species in that particular stream or river reach, the degree of mercury in stream sediments, and other factors. Thus, **because State Fish and Game has absolutely no capacity to carefully monitor each and every suction dredging mining operation or even a large percentage of active operations taking place in a given year, the agency must err on the side of resource protection when establishing policies for suction dredging across the incredible diversity of stream and river reaches in the state.**

The small, but highly vocal and enthusiastic minority of Californians who engage in suction dredging mining are strong, well-organized advocates for the State adopting suction dredging policies containing the least regulations, the most freedom from restrictions, and the greatest possible amount of streams and rivers open to suction dredging.

In contrast, **our Center, with these comments, represents the majority of Californians who believe that protecting water quality and protecting aquatic species should be given a high degree of prioritization when it comes to government policies.**

The current proposed program fails to ensure that water quality and at-risk aquatic species will be spared from significant environmental impacts caused by suction dredging mining as it would be allowed under the proposed program. Accordingly, as proposed, it fails to comply with CEQA and must be revised along with a corrected, improved EIR (which presently also suffers from a variety of legal deficiencies).

Executive Summary of CSERC Comments:

The DSEIR document authors openly acknowledge the multiple potential environmental impacts and varying kinds of harm to aquatic resources that can and does occur from the cumulative and direct impacts of suction dredging. Yet the agency then sidesteps its responsibility to serve as the State agency that is mandated to protect wildlife species and habitat essential to those species.

The DSEIR and the Proposed Program clearly violate CEQA due to the inadequate range of alternatives available to the public and decision-makers for consideration as well as due to the limited ability of the Water Quality alternative, the Reduced Intensity Alternative, or any action alternative to require available, feasible mitigation measures to avoid significant resource impacts that would result from the proposed action.

Put simply, CA DFG has failed to provide a Proposed Program or an action alternative that would allow widespread suction dredging to take place in a ecologically acceptable manner and within appropriately restricted periods so that there can be assurance that significant negative environmental impacts would be greatly reduced or eliminated. Instead, CA DFG has apparently chosen a politically safe strategy -- insisting that it does not have the necessary legal authority to require stringent suction dredging restrictions or strong regulatory requirements tied to enforcement and monitoring that would be sufficient to effectively protect Special Status species, water quality, or aquatic resources at a high level of protection.

CSERC respectfully expresses strong frustration that DFG is failing to serve the interests of the overwhelming majority of California residents and aquatic resources. Instead, DFG promotes a Proposed Program that does not restrict suction dredging to those specific stream and river segments and those specific time periods where environmental risk is low.

CEQA conflicts and an inadequate range of alternatives

As acknowledged in the DSEIR's description of alternatives – the purpose of the EIR is to provide a reasonable range of alternatives that meet program objectives, but that avoid major significant environmental impacts.

Page 6-3 of the DSEIR spells out that the key objectives for the program include (1) managing fish, wildlife and habitats for their ecological values, (2) fulfilling DFG's obligation to conserve fish, wildlife, plants, and habitats, (3) ensure that suction dredging mining will not be deleterious to fish/aquatic species, and (4) ensure that the regulations consider practical considerations for implementation.

Yet on page 6-4 of the DSEIR the document fully acknowledges that **the proposed program of allowing suction dredging as proposed will have significant and**

unavoidable negative impacts for effects on special-status passerines associated with riparian habitat, effects on wildlife species and their habitats, and various other substantial adverse changes affecting water quality, noise exposure to the public, turbidity, and impacts on historic and archeological resources.

Obviously, if the State chose to eliminate all suction dredging, that outcome would avoid those significant impacts, as identified under the No Program Alternative. But eliminating all suction dredging would unfairly penalize responsible suction-dredging miners and likely lead to extensive litigation.

Thus, **an action alternative is needed that will reduce or eliminate the significant impacts caused by suction dredging.** But the so-called Water Quality Alternative is exactly the same as the Proposed Program except it would close to dredging certain water bodies listed as impaired pursuant to 303(d) sediment or mercury non-attainment classifications. The Water Quality Alternative makes no effort at all to apply additional feasible mitigation measures to reduce or eliminate the other significant and unavoidable impacts identified in the DSEIR that the Program would cause.

THIS IS A VIOLATION OF CEQA. CEQA REQUIRES THE ADOPTION OF ALL FEASIBLE MITIGATION MEASURES IN ORDER TO REDUCE THE SIGNIFICANCE OF AN ENVIRONMENTAL IMPACT. FOR AN ALTERNATIVE TO BE CONSIDERED WITHOUT INCLUDING FEASIBLE, AVAILABLE MITIGATION MEASURES TO REDUCE SIGNIFICANT IMPACTS OF THAT ALTERNATIVE FAILS TO COMPLY WITH CEQA.

Similarly, the so-called Reduced Intensity Alternative would be highly similar to the Proposed Program except it would restrict the total number of permits issued and would limit some methods of operations. While this Alternative at least moves in the direction of adopting feasible mitigation measures, this Alternative also conflicts with CEQA by failing to consider or incorporate a long list of feasible, reasonable, and available mitigation measures and conditions that would greatly reduce the extent of significant and unavoidable impacts.

CEQA Guidelines §15126.4 specifies that an EIR must identify feasible mitigation measures to mitigate significant environmental impacts. Under CEQA, *"public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects..."* Pub. Res. Code 21002.

Accordingly, to be in compliance with CEQA guidelines, State DFG must describe and adopt feasible mitigation measures to reduce the significant impacts acknowledged in the DSEIR. Yet the State has failed to do so.

As one clear example, there is presently no alternative that prohibits suction dredging in all stream segments where Special Status or Threatened and Endangered species are known to exist and where there is potential for those species to be affected by suction dredging. Eliminating suction dredging in those specific stream reaches with Special Status or T & E

species is a feasible mitigation measure that would greatly reduce the impact identified as CUM-2 (effects on wildlife species and their habitats).

Another example of a feasible mitigation measure ties to riparian bird species. The DSEIR acknowledges that Special Status passerines associated with riparian habitat are primarily migratory species that arrive in mid-to-late spring and breed/raise young during the early to mid-summer season. In order to reduce noise and disturbance impacts to those passerines, State DFG could restricting suction dredging in lower elevation streams and rivers during the months of April-July and in middle elevation (2,000'-5,000') streams and river segments during the months of May-August. Those exclusions would avoid any significant impact from suction dredging on Special-Status passerines associated with riparian habitat. Yet the State has failed to propose this feasible, reasonable mitigation measure. This is a second clear example of a feasible mitigation measure that is readily available for State DFG to apply. Those streams or rivers could then be available to suction dredging after the risk to passerines has passed, but the activity would no longer be a threat due to that reason.

In clear conflict with CEQA, the DSEIR fails to describe numerous such feasible, available mitigation measures. Even more important, **no "action" alternative that would allow suction dredging incorporates the many available feasible mitigation measures/conditions that would reduce or eliminate the list of significant and unavoidable impacts described in the DSEIR.**

By failing to provide feasible mitigation measures for acknowledged impacts that the State identifies as significant and unavoidable, the State is inviting a lawsuit that will certainly prevail given the clear language in CEQA and the Public Resource Code.

There is another clear legal deficiency in the DSEIR. On page 6-16, the document dismisses the ability of State DFG to mitigate for all significant impacts that are not deleterious to fish because the document claims it is not within CDFG's regulatory authority to implement those mitigations. That is an outright false claim that is reprehensible for CDFG to make. Pages earlier on page 6-3, the DSEIR spells out that CDFG has a legal mission to conserve, protect, and manage fish, wildlife, native plants, and the habitats necessary for biologically sustainable populations of those species. That same page spells out that CDFG has a legal mission to manage fish, wildlife, and plant resources and the habitats on which they depend for their ecological values and for their use and enjoyment by the public. It could not be more clear that the State DFG has legal responsibility to protect wildlife, fish, and habitats in order to provide for their use and enjoyment by the public.

Thus, just as one example, CDFG has a state-mandated mission and a legal responsibility to fully protect Special-Status passerines (BIO-WILD-2) and to adopt feasible mitigation measures to reduce the significant impact created by suction dredging. Likewise, for Impact CUM-2 (Effects on Wildlife Species and their Habitats) and Impact CUM-6 (Turbidity/TSS Discharges from Suction Dredging), CDFG has a direct responsibility to reduce impacts of suction dredging on wildlife species and their habitats, including reducing turbidity and TSS discharges.

As another example of a feasible mitigation measure that would be applicable across all action alternatives, suction dredging should be prohibited in all 303(d) listed stream segments (to reduce turbidity impacts in already stressed streams/rivers). Suction dredging could also be conditioned to be restricted in all stream/river segments where identified at-risk wildlife species can reasonably be shown to be disturbed by not just the in-stream suction dredging operation, but by the cumulative impacts of both the dredging and the associated vehicle use, gasoline filling of the pump, noise of the operation, etc.

In the Final EIR, it is essential that the State DFG provide all action alternatives with clear, feasible mitigation measures sufficient to reduce the intensity of the identified significant impacts spelled out on page 6-4 of the DSEIR.

Furthermore, it is necessary for the State to correct the misinformation on page 6-16 that State DFG does not have the regulatory authority or statutory authority to identify mitigation for all environmental resource issues in order to avoid, minimize, or offset impacts to the greatest extent possible. This is a direct conflict with CEQA and the Public Resource Code. To the contrary, the State DFG must identify mitigation for all environmental resource issues in order to avoid, minimize, or offset impacts to the greatest extent possible.

An Alternative That Must Be Given Full Consideration:

To meet the requirements of CEQA and to provide for an alternative that avoids, minimizes, or offsets significant impacts to the greatest extent possible, at a minimum at least one alternative in the FEIR must legally consider the following feasible, reasonable mitigation measures or consider similar or comparable mitigations to protect resources:

Such a Low Impact Alternative would feature:

1) Suction dredging would not be allowed "year-round" in any stream or river segment so as to ensure a period of respite for aquatic resources or riparian species that face risk of disturbance from the cumulative effects of suction dredging and associated activities. Suction dredge use would be allowed pursuant to Class A-G. Class H would be eliminated.

2) Suction dredging would be prohibited in all 303(d) listed stream/river segments (to reduce turbidity impacts in already stressed streams/rivers and to avoid cumulative impacts to aquatic species already affected by water quality problems).

3) Suction dredging would also be conditioned to be restricted in all stream/river segments where identified at-risk wildlife species can reasonably be shown to be disturbed by not just the in-stream suction dredging operation, but by the

cumulative impacts of both the dredging and other impacts such as associated vehicle use, gasoline filling of the pump, noise of the operation, etc.

4) In order to avoid or minimize any significant impact of suction dredging on Special-Status passerines associated with riparian habitat, suction dredging in lower elevation streams and rivers would be prohibited during the months of April-July and prohibited in middle elevation (2,000'-5,000') stream and river segments during the months of May-August. Since riparian migrants arrive in the lower elevations in March and April and in middle elevation riparian habitats in April and May, adopting the prescribed prohibitions on suction dredging during April-July at the low elevations and May-August at the middle elevations would avoid or minimize significant conflicts with passerine species as well as reduce negative impacts to a variety of other riparian species during breeding season.

5) In order to avoid or minimize any significant impact of suction dredging on foothill yellow-legged frog, all stream and river segments currently shown as open for suction dredging in the DSEIR and having foothill yellow-legged frog as an action species will be only be open to suction dredging from ~~September 1~~ - October ~~31~~ Nov 30. Foothill yellow-legged frogs lay egg masses from April until July and the tadpoles transform in 3-4 months. By delaying suction dredging until September 1st the risk to eggs and tadpoles would be avoided or minimized. Allowing 60 days for suction dredging would provide two months of a window for extensive suction dredging activity on these specific stream or river segments. Closing suction dredging as of October 31st would allow streams and river segments to avoid disturbance during the rainy fall/winter season. As noted in the DSEIR on pages 4.3-34 and 4.3 36, avoidance behavior exhibited by amphibians when disturbed by humans can push them into marginal or unsuitable habitat or into a new, already occupied territory, potentially impacting the relocated individual and the defending individual, expending critical energy reserves. In addition, as noted on page 4.3 36, movement for amphibians can be impeded if suction dredgers are active within a season within a stream corridor. Accordingly, movement from the main channel into small tributaries (which does often occur in the fall season) may be impeded. Thus, limiting suction dredging to a period of two months in streams/rivers occupied by foothill yellow-legged frogs reduces the cumulative threats and reduces the significance of suction dredging impacts if dredging is allowed within an occupied stream reach or river.

6) No suction dredging would be permitted in streams or rivers already identified as containing moderate to high levels of mercury that could be re-suspended or discharged due to suction dredging.

7) No suction dredging would be permitted to occur in any stream or river managed by the State of California as a state designated Wild and Scenic river segment . Similarly, no suction dredging would be permitted to occur on federal lands in any stream or river segment managed by a federal agency as a Wild and Scenic River.

8) No suction dredging would be permitted within any State Park, State Wildlife Area, State-designated Ecological Reserve, National Park, National Recreation Area, or National Wildlife Refuge, Congressionally designated Wilderness area, or Bureau Of Land Management designated Area of Environmental Concern.

9) Consistent with the portions of the Proposed Program that list rivers and streams as Class A where Sierra Nevada yellow-legged frog, Yosemite toad, Lahontan cutthroat trout, and Paiute cutthroat trout populations exist, the Low Impact Alternative would designate all streams and rivers containing those species off-limits to suction dredging (Class A). The fact that gold is rarely even found in those higher elevation streams and rivers further justifies establishing those streams and rivers as closed to suction dredging.

10) For protection of anadramous fish species, those key river or stream segments identified by agency scientists as important for anadramous fish species and most sensitive to impacts from suction dredging would be designated as off-limits to dredging.

11) Wherever a stream or river segment lies within a distance of ½ mile upstream of a city, county, or utility district domestic water supply intake site, no suction dredging would be allowed within that segment.

12) And finally, to implement this alternative in a manner that can provide assurance that regulatory requirements are actually followed and resources protected, the California Department of Fish and Game shall only allow suction dredging to be done each year in river or stream segments where previous year monitoring determines that frequent resource impacts or dredging violations do not occur. DFG shall, as part of the approval process for this management plan, be responsible for monitoring to the extent feasible, documenting the locations and kinds of dredging violations taking place, and providing public transparency for that data.

BIOLOGICAL RESOURCES AND DREDGING IMPACTS/MITIGATION

Section:
4.3 Biological Resources
4.3.5 Environmental Impacts

Impact BIO-FISH-1: Direct Effects on Spawning Fish and their Habitat (Less than Significant)

Loss tailings left after dredging could have substantial adverse effect on fish eggs and developing fish.

"Although dredge tailing may be attractive to spawning Fish, they may be less suitable for spawning than natural gravels. The loose substrate often found in dredge tailings may be too unstable; embryos may experience reduced survival under these conditions due to increased scouring (Thomas, 1985; Harvey and Lisle, 1999), which can be exacerbated as embryo development frequently coincides with periods of high flow which mobilizes streambeds (Holtby and Healey, 1986); Lisle and Lewis, 1992). Hence, loose tailing could have a substantial adverse effect on eggs and developing Fish unless this material is allowed to disperse before spawning commences (page 4.3-24)."

The findings conclude that the impact will be "less than significant" because the Proposed Program has spatial and temporal regulations that are suppose to minimize the potentially significant deleterious environmental effects that are cause by suction dredging. *"If left unrestricted, impacts of suction dredging on spawning Fish would be potentially significant with respect to Significant Criteria A & D. However, suction dredging will have a "less than significant" effect because of temporal restrictions and the following Proposed Program regulations (page 4.3-24)."*

However, the regulations are not enforceable and CDFG even expects illegal activity to occur under the proposed program.

- *Section 228(c)(2): requires dredgers to provide CDFG with info regarding the location of their dredging operation(s). This will allow CDFG to monitor and manage areas with high dredging use, and potentially modify regulations if deleterious effects are identified.*

How is this information compiled and monitored for area specific deleterious effects? How much monitoring actually occurs? How will deleterious effects be identified and how long will it take to modify regulations when deleterious effects are identified?

- *Section 228(k)(15): requires dredgers to level all tailing piles prior to working another excavation site or abandoning the excavation site. This will minimize the potential for Fish to spawn on unstable substrate.*

This regulation is meaningless as it is not enforceable and CDFG has no way of knowing how many dredgers do or do not follow this suggestion. Since CDFG has no way of knowing

the extent to which this regulation is being followed or ignored, the regulation would not reduce the "potentially significant" effect to "less than significant".

- *Section 228(k)(16): requires dredgers to avoid the disturbance of redds and adult fish.*

This regulation is also meaningless, not enforceable, and CDFG should assume that any redds present near a dredger will be disturbed and nearby adult fish will definitely be disturbed by dredgers. It is ridiculous to assume that avoiding the disturbance of redds and adult fish is even possible after dredging has commenced and visibility is limited from the murky water caused by the proposed activity.

The proposed regulations for the "Best Management Practices" pamphlet are not legally enforceable by CDFG (like Section 228(k)(15) and Section 228(k)(16) [discussed above]. These regulations are not enforceable, and CDFG already knows that illegal activity occurred in the past and is likely to occur in the future under the Proposed Program. Therefore, CDFG and the public cannot assume that the environmental effect will be "less than significant" for any of the following *Impacts* discussed below. What would the environmental impact be if 20% or 50% or 90% of suction dredgers did not follow the suggestions in the BMP pamphlet? Would the effect to spawning fish be significant?

"Instead, CDFG will use this information to inform the development of a "Best Management Practices" pamphlet which will be given to each permittee under the Proposed Program. Though some of the guidance contained in this pamphlet would not be legally enforceable by the CDFG, it is designed to support the proposed amendments to the regulations by offering suggestions to further reduce or avoid potential environmental effects and inconveniences to others (page 2.76)."

"While the Proposed Regulations prohibit suction dredge activities into streambanks, similar regulations were previously in place and it has been observed that some illegal activity occurred that caused bank erosion and instability (McCleneghan and Johnson, 1983; USFS, 2007); this is also likely to occur under the Proposed Program (page 4.3-46)."

Impacts BIO-FISH-2: Direct Entrainment, Displacement or Burial of Eggs, Larvae and Mollusks (Less than Significant)

Suction dredging has been shown to be lethal to fish eggs, developing fish, mollusks and gastropods, amphibian eggs, and tadpoles by the direct entrainment by suction dredge or lethally effected if covered by dredge tailings.

Entrainment of Fish Eggs, Fry and Larvae:
"Suction dredging as been shown to cause high mortality among eggs and developing fish through the direct effects of entrainment, or by predation following entrainment (page 4.3-25)."

Entrainment of Mollusks (Bivalves and Gastropods)
"Mollusks (bivalves such as clams and mussels) and gastropods (snails and limpets) can suffer mortality during suction dredging entrainment. Many mollusks are not broadly abundant in river streams, may not have high dispersal rate, and may be influenced by local events as suction dredging. A considerable percentage of mussels died after being displaced by suction dredging on their sides or covered with tailings (page 4.3-26)."

Entrainment of Amphibian Eggs and Tadpoles:
Amphibian eggs would not likely be able to withstand the mechanical action of transport through a suction dredge. The foothill yellow-legged frog is an obligate stream breeding ranid frog. They attach their eggs to small or large cobbles in the run, to large cobbles and small boulders on the bar, to bedrock along portion of the streambanks and in pools (Kupferberg et al., 2009) (page 4.3-26).

"Increased water velocities (as low as 10 cm/sec) caused negative reactions from foothill yellow-legged frog, and caused 25% of the tadpoles studied to be displaced, with recently hatched tadpoles lethally affected (Kupferberg et al, 2009)(page 4.3-26)."

"FYLF tadpoles would not be able to escape a suction dredge. Neither behavior nor speed would allow a tadpole to escape if subjected to the near-field velocity of a suction dredge. The tadpole would likely be entrained, flushed downstream, and displaces from its natal area. If the young were to survive the passage through the dredge they would most likely suffer from predation and physiological stressors (page 4.3-27)."

"Dredging between April and August had a negative effect on the presence of amphibian larvae due to the fact that amphibian larvae are only present during spring and early summer (Twisk et al., 2000). Disturbance during the larval developmental period apparently has a considerable negative impact on the presence of amphibian larvae (Twisk et al., 2000) (page 4.3-27)."

The findings conclude that the impact will be "less than significant" because the Proposed Program has spatial and temporal regulations that are suppose to minimize the potentially significant deleterious environmental effects that are cause by suction dredging. *"If left unrestricted, direct entrainment, displacement or burial of eggs, larvae and mollusks by suction dredging would be potentially significant with respect to Significant Criteria A and D. However, the Proposed Program incorporated spatial and temporal restrictions to protect the most vulnerable early life stages of Fish action species (Table 4.3-1) (page 4.3-28)."*

However, the temporal restrictions do not to protect FYLF eggs or tadpoles from being lethally effected by suction dredging and the proposed regulations do not guarantee any real protection as they are not enforceable:
The Class C Restriction does not protect FYLF eggs or tadpoles as it opens dredging on June 1, which directly overlaps with both the time when eggs and tadpoles can be present in the water from April to October.

The Class D Restriction does not protect FYLF tadpoles as it allows dredging to start July 1, which directly overlaps with the time when tadpoles are present in the water from July to October.

The Class E Restriction also allows dredging too early to protect FYLF tadpoles as it allows dredging to start September 1, when FYLF tadpoles could be present through October.

FYLF eggs can be present from April to July. Eggs hatch in 5-37 days depending on water temperature. Tadpoles transform in 3 to 4 months and can be present from July to October (http://www.californiaherps.com/frogs/pages/r.boylii.html).

The following regulations are also insufficient to protect against the direct entrainment, displacement or burial of eggs, larvae and mollucks by suction dredging as they are not monitored, enforceable, and CDFG is already aware that violations will occur.

- Section 228(c)(2): requires dredgers to provide CDFG with information regarding the location of their dredging operation(s). This will allow CDFG to monitor and manage areas with high dredging use, and potentially modify regulations if deleterious effects are identified.

How is this information compiled and monitored for area specific deleterious effects? How much monitoring actually occurs? How will deleterious effects be identified and how long will it take to modify regulations when deleterious effects are identified?

- Section 228(k)(13): prohibits dredging in mussel beds.

This regulation is meaningless as it is not enforceable and CDFG has no way of knowing how many dredgers do or do not follow this suggestion. Since CDFG has no way of knowing the extent to which this regulation is being followed or ignored, the regulation would not reduce the "potentially significant" effect to "less than significant".

- Section 228 (k)(14): requires dredgers to take reasonable care to avoid dredging silt and clay materials that may result in increased turbidity and deposition of fines on the gravels.

This regulation is meaningless as it is not enforceable and CDFG has no way of knowing how many dredgers do or do not follow this suggestion. Since CDFG has no way of knowing the extent to which this regulation is being followed or ignored, the regulation would not reduce the "potentially significant" effect to "less than significant".

- Section 228(k)(15): requires dredgers to level all tailing piles prior to working another excavation site or abandoning the excavation site.

This regulation is meaningless as it is not enforceable and CDFG has no way of knowing how many dredgers do or do not follow this suggestion. Since CDFG has no way of knowing the extent to which this regulation is being followed or ignored, the regulation would not reduce the "potentially significant" effect to "less than significant".

- Section 228(k)(16): requires dredgers to avoid the disturbance of eggs, redds, tadpoles and mollusks.

This regulation is also meaningless, not enforceable, and CDFG should assume that any eggs, redds, tadpoles and mollusks present near a dredger will be disturbed and likely lethally so. It is ridiculous to assume that avoiding the disturbance of eggs, redds, tadpoles and mollusks is even possible after dredging has commenced and visibility is limited from the murky water caused by the proposed activity.

Since these regulations are not enforceable, and CDFG already knows that illegal activity occurred in the past and is likely to occur in the future under the Proposed Program (see pages 2.76, 4.3-46). CDFG and the public cannot assume that the "potentially significant" environmental effect will be "less than significant" under the Proposed Program. What would the environmental impact be if 20% or 50% or 90% of suction dredgers did not follow the suggestions in the BMP pamphlet? Would the direct entrainment, displacement or burial of eggs, larvae and mollusks by suction dredging be significant?

Impact BIO-FISH-3: Effects on Early Life Stage Development (Less than Significant)

Direct entrainment has been shown to be lethal to fish eggs, developing fish, mollusks, amphibian eggs, and tadpoles by direct entrainment of a suction dredge and can also be lethally effected if covered by dredge tailings.

Effects on Fish:
"While the severity of these effects would likely vary depending on the species or they hydrologic conditions of the watershed, dredging may have a substantial negative effect on the spawning grounds and on the developing eggs and larvae of many fish species. Excessive sedimentation from a variety of activities, including mining and road construction may also smoother substrates and impair egg-laying or survivorship of eggs or young mollusks (Duncan, 2005) (page 4.3-29)."

Effects on Amphibians:
Increased suspension of solids in the water column can affect the development of amphibian embryos and tadpoles in several ways. First, suspended solids can result in decreased amounts of dissolved oxygen in the water column. Dissolved oxygen is critical for the survival of developing amphibian eggs (McDiarmid and Altig, 1999), which may suffocate when water become oxygen-depleted (page 4.3-29)."

"In CA, several amphibian species have been identified as being directly impacted by the increase in sedimentation that results from suction dredging. .... Changes to hydrologic conditions and associated sediment loads during the spring breeding and summer larval rearing season are the principal threat to the conservation of Foothill Yellow-Legged Frog (Kuperfberg et al., 2009) (page 4.3-30)."

"Finally, tadpole growth and development can be significantly reduced by increases of sediment and activities in catchments that increase sediment loads in streams. Sedimentation downstream of the dredging area coats the sand and gravel supporting interstitial algae, bacteria and diatoms upon which tadpoles feed. In additions, suction dredging may reduce the abundance of tadpole prey resources through the direct scour or entrainment of periphyton (i.e., algae, microbes and detritus) in the vicinity of the dredging activity. Although this may be a temporary effect, it may occur at a critical developmental stage, and therefore, have negative impacts on the organisms (page 4.3-30)."

The findings conclude that the impacts from suction dredging to early lifestage will be "less than significant" because the Proposed Program has spatial and temporal regulations that are suppose to minimize the potentially significant deleterious environmental effects that are cause by suction dredging. *"If left unrestricted, impacts of suction dredging on early life stages of Fish would be potentially significant under Criteria A and D. However, the Proposed Program incorporates spatial and temporal restrictions on suction dredging where necessary to protect the development of critical early life stages of Fish action species (Table 4.3-1) (page 4.3-30)."*

However, the temporal restrictions do not to protect fish eggs or young, young mollusks, FYLF eggs or tadpoles from being lethally effected by suction dredging and the proposed regulations are not enforceable:

The Class C Restriction does not protect FYLF eggs or tadpoles as it opens dredging on June 1, which directly overlaps with both the time when eggs and tadpoles can be present in the water from April to October.

The Class D Restriction does not protect FYLF tadpoles as it allows dredging to start July 1, which directly overlaps with the time when tadpoles are present in the water from July to October.

The Class E Restriction also allows dredging too early to protect FYLF tadpoles as it allows dredging to start September 1, when FYLF tadpoles could be present through October.

FYLF eggs can be present from April to July. Eggs hatch in 5-37 days depending on water temperature. Tadpoles transform in 3 to 4 months and can be present from July to October (http://www.californiaherps.com/frogs/pages/r.boylii.html).

When the temporal restrictions fall short of protecting the early lifestages of *fish,* by allowing dredging to overlap with fish eggs, young fish and mollusks, amphibian eggs and tadpoles. The following regulations are insufficient to protect against the deleterious effects that will occur to the early lifestages from suction dredging, as these regulations are not monitored, enforceable, and CDFG is already aware that violations will occur.

- Section 228(k)(3): prohibits dredging within 3 feet of the lateral edge of the current water level. This regulation would protect against streambank destabilization that could result in release of fine sediment.

Violations of this regulation have already been documented in the past and are expected to occur in the future. *"While the Proposed Regulations prohibit suction dredging activities into streambanks, similar regulations were previously in place and it has been observed that some illegal activity occurred that cause bank erosion and instability (McCleneghan and Johnson, 1983; USFS, 2007); this is likely to occur under the Proposed Program (4.3-46)."* If violations of these regulations are expected to occur, then what are they protecting?

- Section 228(k)(4): prohibits dredgers from damaging or removing stream site vegetation. This regulation would protect against streambank destabilization that could result in release of fine sediment.

Same concern as above, if violation of these regulations are expected and there isn't any monitoring or enforcement, then this and all other regulations that are not enforceable are meaningless.

- Section 228(k)(14): requires dredgers to take reasonable care to avoid dredging silt and clay materials that may result in increased turbidity and deposition of fines on the gravels. This will reduce the potential for eggs and larvae to be impacted by increased turbidity and fine sediment.

Same concern as above, if violation of these regulations are expected and there isn't any monitoring or enforcement, then this and all other regulations that are not enforceable are meaningless.

- Section 228(k)(15): requires dredgers to level all tailing piles prior to working another excavation site or abandoning the excavation site. This regulation will ensure that large piles of fines are not left in the stream that could later blanket embryos.

Same concern as above, if violation of these regulations are expected and there isn't any monitoring or enforcement, then this and all other regulations that are not enforceable are meaningless.

- Section 228(k)(16): requires dredgers to avoid the disturbance of eggs, redds, tadpoles and mollusks.

Same concern as above, if violation of these regulations are expected and there isn't any monitoring or enforcement, then this and all other regulations that are not enforceable are meaningless.

Impact BIO-FISH-4: Direct Entrainment of Juvenile or Adult Fish in a Suction Dredge (Less than Significant)

As with every proposed regulation in the sections discussed above, the regulations that are suppose to reduce the "potentially significant" to "less than significant" are completely useless.

- *Section 228(j)(3): requires that the intake for the suction dredge pump be covered with screening mesh, which effectively eliminates the potential for entrainment of juvenile salmonids into the pump intake.*

There isn't any monitoring, enforcement, or guarantee that this regulation will be followed. Therefore, there is no reason to assume that the impact would be "less than significant."

- *Section 228(k)(16): requires dredgers to avoid the disturbance of fish.*

Seriously, this one is ridiculous. There is no possible way that dredgers can avoid the disturbance of fish. This reflects how illogical the DSEIR is in terms of mitigation.

Impact BIO-FISH-5: Behavioral Effects on Juvenile or Adults (Less than Significant)

Disturbances in the water such as those caused by suction dredging, can lead to behavioral responses that leave the fish more susceptible to predation. On land disturbances can lead to frogs abandoning suitable habitat, possibly moving into areas of unsuitable habitat or occupied habitat.

Effects on Fish:
"Fish behavior can be altered as a result of numerous environmental changes and stimuli. Silt deposition as a result of mechanized activities, such as suction dredging, can have adverse effects on invertebrates and fish, including clogging of respiratory structures, reduced feeding rates, increased invertebrate drift, disruption of courtship displays and spawning behavior, and reduced hatching rates in fish (page 4.3-33)."

"If animals avoid a refuge area as a result of a disturbance or perceived predation (Frid and Dill, 2002), these animals may experience greater predation by other predators (Crowder et al., 1997; Sih et al., 1998; De Goeij et al., 2001). If forced to relocate to new feeding areas, fish may experience increased stress due to predation, exposure to sub-optimal conditions, and increased competition with other fish for food and space, as well as stress from agonistic behavior (i.e., contests for dominance)(page 4.3-34)."

Effects of Amphibians:
Human visitation along streambanks resulted in 80 to 100 percent decrease in frog use with a five-fold and 12-fold increase in direct disturbance (Rodriguez-Prieto and Fernandez-Juricic, 2005). Avoidance behaviors by frogs to humans, including suction dredgers, could remove individuals from an existing established territory, and push them into either marginal or unsuitable habitat or into new, already occupied territory, potentially impacting the relocated individual and the defending individual, expending critical energy reserves.

The findings conclude that the impacts from suction dredging to juvenile or adult *fish* will be "less than significant" because the Proposed Program has spatial and temporal regulations that are suppose to minimize the potentially significant deleterious environmental effects to action species that are cause by suction dredging. "If left unrestricted, impacts of suction dredging on the behavior of juvenile and adult *Fish* would be potentially significant under Criteria A and D. Behavior impacts are of particular concern during mating, spawning and early life stages. The Proposed Program regulations incorporate spatial and temporal restrictions on suction dredging in the period immediately before spawning/breeding and during critical early lifestages of *Fish* action species (i.e., incubation, development, early emergence) (Table 4.3-1) (page 4.3-34)."

However, the temporal restriction often allow suction dredging to overlap with the critical lifestages of many action species, such as the: mountain sucker, mountain whitefish, Lahontan cutthroat trout, Foothill Yellow-Legged Frog, hardhead, Chinook salmon, steelhead, and the Red Hill Roach, to name a few (pleas refer to pages _to_for further discussion regarding each of these species).

Furthermore, the proposed regulations (like the one below), are completely useless as they do nothing to protect the at risk biological resources.

- Section 228(k)(16): requires dredgers to avoid the disturbance of fish.

This is in fact, impossible, according to the literature review in the discussion of this section. The physical presence of the suction dredger, silt, noise, and vibrations, from dredging disturbs fish and causes a flight response, and human presence is enough to elicit an avoidance response in amphibians.

Impacts BIO-FISH-6: Effects on Movement/Migration (Less than Significant)

Movement between amphibian populations is important and continued disturbance in an area can lead to local extinctions. Impediments to movement between populations can also lead to local extinctions. Suction dredging can impede amphibian movement.

Effects on Amphibians:
"Movement per generation is of a lower rate in amphibians than in invertebrates, mammals or reptiles, and low recruitment of dispersing individuals probably plays an important role in decline and extinction in amphibian populations in fragmented landscapes (Cushman, 2006). A number of studies have indicated that populations may decline if immigrations is prevented and may not be recolonized following a local extinction (Cushman, 2006) (page 4.3-36)."

"For the smaller vertebrates, such as amphibians, movement could be impeded if suction dredgers are densely active or consistently active within a season within a stream corridor. Movement from the main channel into small tributaries, or vice versa, may be impeded by suction dredging. Suction dredging could also result in the sterilization of a once viable and

active movement corridor along the littoral area (part of the stream that is close to the shore), thus barring movement (page 4.3-36)."

"Interruption of movement or dispersal corridors can be detrimental to small populations of amphibians. The viability of a population is dependent on movements between populations, and without such movements, populations become susceptible to loss of genetic diversity by random drift, ultimately falling to the effects of inbreeding (Beebee and Griffiths, 2005). Connectivity appears to be of particular importance even in unfragmented landscapes, as amphibian populations experience relatively frequent local extinction and turnover (Cushman, 2006). Thus movement and dispersal are critical for recolonization of local populations and maintenance of regional populations (page 4.3-36)."

The findings conclude that suction dredging will have a "less than significant" effect on the movement or migration of amphibians. *If left unrestricted, impacts of suction dredging on movement would be potentially significant with respect to Significant Criterion D. However, the Proposed Program incorporates spatial and temporal restrictions on suction dredging activities within the range of Fish action species. Streams within the state that provide habitat for species that are either very limited in number and/or distribution are proposed to be closed to suction dredging (Clsass A), thus avoiding the potential impacts. These restrictions are intended to maintain the viability of these species, as disruptions of migration or movement may have a substantial effect on the population or range of the species." However,* suction dredging is proposed to be allowed throughout the majority of the geographic range of the Foothill Yellow-Legged Frog, a species of special concern that has already disappeared from much of it's historic range.

- *Section 228(c)(2): requires dredgers to provide CDFG with info regarding the location of their dredging operation(s). This will allow CDFG to monitor and manage areas with high dredging use, and potentially modify regulations if deleterious effects are identified.*

Anywhere dredging is allowed, deleterious effects will ensue.

- *Section 228(k)(6): Prohibits the diversion of a stream into the bank*

This is neither monitored nor enforced and is a useless regulation.

- *Section 228(k)(7): Prohibits:*
- *Construction of permanent or temporary dams*
- *Concentrating flow in a way that reduces the total wetted area of the stream.*
- *Obstructing a stream or lake in such a manner that fish passage is impeded.*

This is neither monitored nor enforced and is a useless regulation.

- *Section 228(k)(16): requires dredgers to avoid the disturbance of fish.*

This is literally impossible and completely useless.

Impact BIO-FISH-7: Effects on the Benthic Community/Prey Base (Less than Significant)

Not only are the early lifestages of fish, amphibians, and mollusks directly at risk from suction dredging, their food sources are also at risk from dredging which can lead to further detrimental effects to the animals.

"Sedimentation downstream of the dredging area coats the sand and gravel supporting interstitial algae, bacteria and diatoms which are important prey resources. Although this effect may be temporary, it can occur at a critical developmental stage, and therefore, have negative impacts on certain organisms (4.3-38)."

"In conclusion, suction dredging can have substantial short-term and localized adverse impacts on local benthic invertebrate abundance and community composition. Benthic communities seem to recover over time frames of 30-60 days after the disturbance ceases and the adverse impacts of suction dredging are not evident after one year (unless there is a very small population that is threatened or endangered). However, when considering the extent of benthic disturbance and its recovery, the extent to which it affects a juvenile salmonid's reliance on the natal stream before emigrating is important, as is larval development of other native species that depend on a healthy benthic invertebrate community (4.3-39)."

While the findings conclude that the impacts of suction dredging on stream benthic communities would be less than significant, the effect on the local *fish* community could have serious negative effects. The following regulations are inadequate to less the impact.

- Section 228(c)(2): requires dredgers to provide CDFG with info regarding the location of their dredging operation(s). This will allow CDFG to monitor and manage areas with high dredging use, and potentially modify regulations if deleterious effects are identified.

What if dredgers decide to go to locations that they did not report to CDFG as they did not want CDFG to know where they were going or they simply change there minds. In that case, this information would be useless and CDFG would have not way of knowing since there is little to no monitoring or enforcement.

- Section 228(j)(1): limits the nozzle size of dredging equipment, which effectively reduces the potential area disturbed by an individual dredger.

Since there is very little to no monitoring of dredging operations, how is this regulation enforced if there isn't a significant fine for violations?

- Section 228(k)(4): prohibits dredgers from damaging or removing stream site vegetation. This regulation would protect against streambank destabilization that could result in release of fine sediment.

This regulation is useless, as there is no way to enforce and CDFG has no way of knowing the degree to which it is followed or ignored.

- Section 228(k)(5): prohibits the cutting, movement or destabilization of woody debris, which is important for macroinvertebrate habitat and production.

Once again this regulation is useless, there is no way to enforce or know how many dredgers follow or ignore it.

Impact BIO-FISH-8: Creation and Alteration of Pools and other Thermal Refugia (Less than Significant)

Suction dredging alters instream pools and fills the pore spaces between coarse gravel and cobble at the bottom of pools, which can have deleterious effects on amphibians, fish eggs, and disrupt the food chain.

"Suction dredging activities have the potential to result in creation, alteration or destruction of pool habitat. The act of dredging often creates pools locally, but these features may not be persistent, nor function hydrologically in a manner similar to naturally formed pools. Suction dredging can alter or destroy pools by redistributing stream substrate in a manner that would destabilize bed form, or simply by filling a pool with dredge tailing (page 4.3-40)."

"Filling of pore spaces between coarse gravel and cobble at the bottom of pools can reduce the use of such habitat by amphibians (Welsh and Olliver, 1998). Suction dredging can lead to sedimentation of pools downstream of the dredging site, thus filling in pool habitat (page 4.3-41)."

"Findings: If left unrestricted, impacts of suction dredging on thermal refugia would be potentially significant with respect to Significance Criteria A, B and D." **Since the following regulations are not enforceable and violations are likely to occur, the impact of suction dredging on thermal refugia would remain potentially significant.**

- Section 228(k)(5): prohibits the cutting, movement or destabilization of woody debris, which is important for pool habitat formation and maintenance.

This regulation is useless, there is nothing preventing dredgers from doing whatever they want to instream woody debris. Therefore, the impact from suction dredging on thermal refugia would remain potentially significant.

- Section 228(k)(15): requires dredgers to level all tailing piles prior to working another excavation site or abandoning the excavation site. This regulation would limit the potential for dredgers to leave tailing that could be easily transported downstream and fill pools, and plug or reduce hyporheic flow in critical areas.

This regulation is also useless. There is no guarantee that dredgers will abide by this regulation. Therefore, it should be assumed that most dredgers will not lecel all tailing piles prior to leaving the area, which means that the related deleterious impacts would remain potentially significant.

Impact BIO-FISH-9: Destabilization/Removal of Instream Habitat Elements (e.g., Coarse Woody Debris, Boulders, Riffles) (Less than Significant)

Boulders and large woody debris are important for maintaining a healthy macroinvertebrate population which is important for the local fish population.

Woody Debris and Large Boulders
"Suction dredgers sometime remove CWD and large boulders from stream channels or reduce the stability of these elements by removing surrounding material (Harvey and Lisle, 1998). The importance of these features for aquatic habitat and stream structure is well documented (page 4.3-43)."

"Many studies provide evidence that CWD and other large elements affect various ecological processes and conditions in streams, including the microbial uptake and transfer of organic matter (Tank and Winterbourn, 1996), the species composition and productivity of benthic invertebrates (Benke et al., 1984), and the density of fish (e.g., Fausch and Northcote, 1992; Crispin et al 1993). CWD and snags are important habitat components for benthic macroinvertebrate communities (Brown and May, 2000). Woody debris is an important refuge and source of macroinvertebrate recolonizers. Loss of wood structure can have a negative effect on macroinvertebrate diversity and production in streams (Hax and Golladay, 1998). Sundbaum and Naslund (1998) demonstrated that the presence of woody debris decreases intraspecific competition through visual isolation, allowing fish to reduce aggressive interactions and energy expenditure (Page 4.3-42)."

The importance of CWD and large boulders was well documented in this section, however the regulations that are suppose to prevent the removal of these important instream features are weak and offer little to no protection.

Findings: "The importance of CWD and large boulders on the formation and maintenance of aquatic habitat structure is well documented in the preceding discussion. If left unrestricted, impacts of suction dredging on the abundance and distribution of CWD in sensitive habitats, including but not limited to USFWS/NMFS designated critical habitat, would be potentially significant with respect to Significance Criterion B. Likewise, displacement of large boulders that are important for formation and maintenance of aquatic habitat and stream structure would be potentially significant with respect to Significant Criterion B. However, the following Proposed Regulations would minimize the potential for suction dredging to destabilize or remove instream habitat freature:

- Section 228(k)(1): prohibits the use of motorized winches or other motorized equipment to move boulders or logs without prior approval and section 1602 notification. This regulation would limit the potential for dredgers to destabilize or alter instream habitat by moving large objects.

However, as with the following two regulations, this one is does nothing to prevent the movement of boulders or logs with or without a motorized winch as it is not enforceable or monitored and there is no penalty for violators. Therefore, the impact is likely to remain

potentially significant and mitigation necessary to reduce the impact to less than significant.

- Section 228(k)(5): prohibits the cutting, movement or destabilization of woody debris including root wads and stumps or logs.

Completely useless regulation, as it is not enforceable and the cutting, movement or destabilization of wood debris is likely to occur under the proposed program regardless of this regulation.

- Section 228(k)(15): requires dredgers to level all tailing piles prior to working another excavation site or abandoning the excavation site. This regulation would limit the potential for dredgers to destabilize or alter riffle and pool habitat.

How many dredgers are really going to do more work than is necessary to get what they want which is the gold? Being that this regulation should be followed after the dredger is done with the site, why should the public believe that they are going to stay to level their tailing piles when they do not get anything out of it?

Impact BIO-FISH-10: Destabilization of the Streambank (Less than Significant)

The streambank vegetation is important for overall stream health. It provides important habitat and food for some species, stabilizes the streambank, and helps regulate the water temperature.

"Physical habitat quality, including streambacks dynamics, play a vital role in the biological condition of aquatic habitat (Barbour, 1991). Streambanks support riparian vegetation, which is important to aquatic food web dynamics, regulation of stream hydraulics (e.g., velocity) and temperature, and storage of alluvial sediment. Destabilization of streambanks can have adverse effects on aquatic and riparian habitats including sedimentation, increased flow velocity, increased water temperatures, reduced cover habitat (e.g., undercut banks), and reductions in allochthonous (originating from outside the stream) organic matter inputs (page 4.3-45)."

"Streambank erosion is one of the primary non-point sources of sediment in a watershed (U.S. EPA, 1999). While streambank erosion is a natural process, excessive erosion caused by human activity can substantially degrade aquatic habitat downstream of the erosion site. Simon et al., (2006) estimated that streambank erosion accounts for about 25% of the total fine sediment load entering Lake Tahoe. The USFS has identified sedimentation of aquatic habitat as a threat to the recovery of listed amphibian species including arroyo toad and California red-legged from (USFWS, 19999; USFWS, 2002). Excessive sedimentation from a variety of activities may also smother substrates and impair egg-laying or survivorship of eggs (Duncan, 2005)."

The importance of streambank vegetation was well documented in this section, however the regulations that are suppose to prevent the removal of these important instream features are weak and offer little to no protection and violations of similar regulations have been observed. *"While the Proposed Regulations prohibit dredge activities into streambanks, similar regulations were previously in place and it has been observed that some illegal activity occurred that cause bank erosion and instability (McCleneghan and Johnson, 1983; USFS, 2007); this is likely to occur under the Proposed Program (page 4.3-46)."*

When violations of the following regulations are expected to occur under the Proposed Program, then the regulations do not provide any assurance that the impact would not be potentially significant. If the impact could be potentially significant then mitigation is required to reduce the impact to less than significant.

Findings: If left unrestricted, impacts of suction dredging on streambank stability would be potentially significant with respect to Significance Criteria A, B and C. Specifically streambank destabilization may result in excessive sedimentation in habitat utilized by Fish species; degradation of sensitive habitat such as riparian areas; and result in adverse effects on federally protected wetlands in or adjacent to streams through direct modification or sedimentation. The following Proposed Program regulations would reduce the potential for suction dredgers to destabilize streambanks:

- Section 228(c)(2): requires dredgers to provide CDFG with information regarding the location of their dredging use, and potentially modify regulations if it identifies deleterious effects.
- Section 228(k)(2): Prohibits dredging within 3 feet of the current water level at the time of dredging. This would greatly reduce the likelihood that a dredger would destabilize a streambank.

This regulation is not enforceable or monitored for compliance, and there are significant deleterious effects when it is ignored. When there is no guarantee that a regulation will be followed, the safe assumption is that violations will occur making mitigations to counteract the negative impact necessary.

- Section 228(k)(4): prohibits the removal of streamside vegetation.

Useless, this regulation will prevent nothing, dredgers will remove whatever they want since they there is no enforcement or punishment for violations.

Impact BIO-Fish-11: Effects on Habitat and Flow Rates Through Dewatering, Damming or Diversions (Less than Significant)

According to the discussion, changes in stream flow can negatively affect *fish* leading to increased predation, can expose eggs and tadpoles, and is the principle threat to the conservation of the FYLF. This is a serious concern as the proposed temporal restriction would allow suction dredging to overlap with when FYLF eggs and tadpoles are present in the water.

The Class C Restriction does not protect FYLF eggs or tadpoles as it opens dredging on June 1, which directly overlaps with both the time when eggs and tadpoles can be present in the water from April to October.

The Class D Restriction does not protect FYLF tadpoles as it allows dredging to start July 1, which directly overlaps with the time when tadpoles are present in the water from July to October.

The Class E Restriction also allows dredging too early to protect FYLF tadpoles as it allows dredging to start September 1, when FYLF tadpoles could be present through October.

FYLF eggs can be present from April to July. Eggs hatch in 5-37 days depending on water temperature. Tadpoles transform in 3 to 4 months and can be present from July to October (http://www.californiaherps.com/frogs/pages/r.boylii.html).

"Channel flow manipulation, such as damming, dewatering and diversion, may adversely impact Fish. Changes in flow patterns and properties (e.g., depth, velocity) can affect fish behavior and migration patterns. Changes to hydrologic conditions (primarily unnatural flow fluctuations from dam releases) and associated sediment loads during the spring breeding and summer larval rearing season are the principal threat to the conservation of foothill yellow-legged from (Kupferberg et al., 2009). Dewatering or diversion of the stream channel may strand fish and expose tadpoles to unnatural conditions and increase predation. Increased water velocities as a result of diversions can create barriers to fish movement and displace tadpoles....(page 4.3-46)."

How is a regulation that is not monitored or enforceable supposed to prevent the dredgers from construction dams or otherwise altering the stream flow? Since the following regulation is not enforceable and violations are expected, mitigation would be necessary to prevent the impact from being significant.

"Findings: If left unrestricted, impacts of modification of flow regimes by suction dredgers would be considered potentially significant with respect to Significant Criteria A and D. More specifically, diversion or dewatering caused by dredgers may strand or impede the movement or migration of Fish species. Section 228(k)(7) of the Propose Regulations prohibits: construction of permanent or temporary dams; concentration flow in a way that reduces the total wetter area of the stream; and obstructing a stream or lake in such a manner that fish passage is impeded. Such activities would require compliance with Fish and Game Code section 1602, which may require a project-specific CEQA analysis. In addition, the Proposed Program regulations incorporate restrictions to protect the development of critical early like stages of Fish action species such that unauthorized diversion, dewatering or damming are not likely to cause significant impacts. Section 228(c)(2) of the Proposed Program regulations, which requires dredgers to provide CDFG with information regarding the location of their dredging operation(s), would enable CDFG to monitor dredging activities and enforce Program regulations that prohibit diversion, dewatering or damming of streams. While some unauthorized channel manipulations are likely to occur in spite of these

restrictions, theses are not anticipated to be widespread because of the Proposed Regulations which prohibit this type of activity. Thus, with respect to Significant Criteria A and D, the impact is considered less than significant."

Terrestrial Wildlife & Non-Riverine Aquatic Invertebrates

Impact BIO-WILD-2: Effects of Special-Status Passerines Associated with Riparian Habitat (Significant and Unavoidable)

Disturbances such as suction dredging during the passerine breeding season March – August can result in nesting failure, nest abandonment, and can lead to egg or nestling mortality.

"Recreational activities, such as suction dredging, may impact special-status passerine species by altering behavior, movements and distributions, which may lead to nesting failure and expenditure of critical energy reserves (Knight and Skagen, 1986). Human activity, including mechanical noise, can alter bird species composition associated with the activity area, causing nest abandonment, increased nest predation, and discouragement of late-nesting birds from settling in disturbed areas (Ellison and Cleary, 1978; LaGory et al., 2001) (page4.3-48)."

"Specific disturbance mechanisms include noise associated with dredge rigs, dredgers accessing streams, direct disturbance of riparian habitat, alteration of prey resource base, and suction dredging encampment activities at night (e.g., lights and noise). Suction dredging activities that occur during the passerine breeding season (typically March through August) may alter behavioral patterns of special-status passerine species such as Bank Swallow (Riparian ripaia), western Yellow-Billed Cuckoo (Coccyzuz americanus occidentalis), Least Bell's Vireo (Virel belli pusillus) and Willow Flycatcher (Empidonax traillii) (Table 4.3-3). In some cases this may prevent individuals from continued nesting in a section of their territory or result in nest abandonment (even temporary), causing mortality to eggs or nestlings (page 4.3-48)."

The easiest way to avoid impact to special status passerine birds would be not to allow suction dredging between March and August. If the young have already fledged then there isn't any risk of mortality due to nest abandonment. Restricting the suction dredging season in special status passerine bird territory would also be beneficial to instream *fish* species.

Finding: "Suction dredging and associated activities may cause impacts to special-status passerines species and their habitats that would be considered potentially significant with respect to Significance Criteria A, B and D."

"Potential for impacts to special-status passerine species would largely be minimized with incorporation of the Proposed Regulations, but not completely avoided. The potential for direct disturbance of nests or adverse behavior modifications due to human activity would remain. For several of these species (e.g., Least Bell's Vireo), even a small disturbance could be substantial considering the restricted population and/or range of the species in question. Thus, for those passerine species listed in Table 4.3-3, the level of impacts would remain potentially significant with respect to Significance Criterion A."

"Mitigation measures are available to reduce impacts to a less-than-significant level for passerines that ma be affected by a project. These mitigation measure include research using the CNDDB and other sources to identify potential locations of species, field surveys by qualified biologists to determine the location of sensitive passerines prior to dredging activities, and implementation of seasonal avoidance measures (e.g., buffers around known nests during the breeding season). Despite the advisory information that will be contained in the "Best Management Practices" packets to avoid such adverse effects, CDFG does not have jurisdictional authority to adopt or enforce mitigation for impacts to non-Fish species under this program. Therefore, impacts to these passerine species are considered significant and unavoidable."

This is clearly inaccurate given the mission and legal responsibility of the agency.

SPECIFIC COMMENTS ON SEASONAL RESTRICTIONS TIED TO ACTION SPECIES

Appendix L: Species Restriction

Below are CSERC's concerns and recommendations regarding the proposed Suction Dredging regulations' Class Restrictions for: Alpine, Amador, Calaveras, Tuolumne, Mariposa, and Stanislaus Counties.

Alpine County:

Water	*Description*	*Class*	*Action Species*	*CSERC Class*	*Reason-Rationale**
Carson River, East Fork	Mainstem and all tributaries from California-Nevada State Line to Carson Falls, unless otherwise noted	G (Open 9/1 – 9/30)	Mountain Sucker, Mountain Whitefish, Lahontan Cutthroat Trout (Recovery)	A (No dredging permitted at any time)	Deleterious impacts from dredging to the Mountain Sucker, Mountain Whitefish, Lahontan Cutthroat Trout
Carson River, West Fork	Mainstem and all tributaries, unless otherwise noted below	G (Open 9/1 – 9/30)	Mountain Sucker, Mountain Whitefish, Lahontan Cutthroat Trout (Recovery)	A (No dredging permitted at any time)	Deleterious impacts from dredging to the Mountain Sucker, Mountain Whitefish, Lahontan Cutthroat Trout

*Reason/Rationale Continued:

Mountain Sucker (*Catostomus platyhynchus*)**:**
According to Table 4.3-1, *the species is in general decline due to dam construction resulting in isolated populations (Moyle, 2002). The mountain sucker spawns in gravelly riffles immediately upstream of deep pools from June to early August. Impacts to spawning adults and early lifestages could result in a deleterious effect.*

The Class G does not protect the early lifestages of the mountain sucker, which Table 4.3-1 states "could result in a deleterious effect." The Class G restriction would allow dredging immediately following the completion of the mountain sucker's spawning season when the young would be present in the waters. To protect the mountain sucker young from suction dredging, CSERC recommends a Class A Restriction to avoid further decline of this species.

Mountain Whitefish (*Prosopium williamsoni*)**:**
The mountain whitefish, spawning period extends from October to early December. Impacts to migrating and spawning adults and early lifestages could result in a deleterious effect (Table 4.3-1).

The Class G Restriction for the above waters does not protect the migrating adults or the breeding habitat of this species as dredging would be allowed the month before this species

spawns. CSERC recommends a Class A Restriction to avoid deleterious impacts to this species spawning adults and early lifestages.

Lahontan Cutthroat Trout (*Oncorhynchus clarkia henshawi*)**:**
The Lahontan cutthroat trout is a Federally Threatened species due to limited species abundance and distribution. According to Table 4.3-1, minor impacts to organisms or suitable habitat could result in a deleterious effect, and that suction dredging has the potential to degrade habitat and entrain organisms. "No seasonal restriction would avoid potential impacts to organism or their habitat. Many restoration projects are underway to restore habitat and distribution."

The Class G Restriction for the above waters does not protect the "recovery habitat" of this species as Table 4.3-1 states that, "No seasonal restriction would avoid potential impacts to organism or their habitat". CSERC recommends a Class A Restriction to avoid deleterious impacts to this species recovery and distribution.

Amador County:

Water	*Description*	*Class*	*Action Species*	*CSERC Class*	*Reason*
Multiple Waters	All rivers and streams in the County unless otherwise noted below	H (Open to dredging throughout the year)	N/A	D (Open to dredging from July 1 through January 31)	To provide a rest and recovery period
Consumnes River, South Fork	Mainstem and all tributaries	C (Open to dredging from 6/1 through 9/30)	Foothill yellow-legged frog	Modified C (Open 10/1 - 11/31)	To protect FYLF eggs and tadpoles
Mokelumne River	Mainstem and all tributaries from Tiger Creek to Salt Springs Reservoir, except Cole Creek)	D (Open to dredging from 7/1 - 1/31)	Foothill yellow-legged frog	Modified C (Open 10/1 - 11/31)	To protect FYLF tadpoles
Mokelumne River, North Fork	Mainstem and all tributaries from Tiger Creek to Salt Springs Reservoir, except Cole Creek	E (Open to dredging from 9/1 through 1/31)	Foothill yellow-legged frog	Modified C (Open 10/1 - 11/31)	To protect FYLF tadpoles

Reason Continued:

Foothill yellow-legged Frog (FYLF) (*Rana boylii*)**:**
The Foothill yellow-legged frog is now extirpated from an estimated 66% of its range in the foothills and middle elevations of the Sierra Nevada and it is a Species of Special Concern. FYLF eggs can be present from April through July, hatch in 5-37 days depending on water temperature, and it takes 3 to 4 months for tadpoles to transform from July to October (http://www.californiaherps.com/frogs/pages/r.boylii.html).

The Class C Restriction does not protect FYLF eggs or tadpoles as it opens dredging on June 1, which directly overlaps with both the time when eggs and tadpoles can be present in the water from April to October.

The Class D Restriction does not protect FYLF tadpoles as it allows dredging to start July 1, which directly overlaps with the time when tadpoles are present in the water from July to October.

The Class E Restriction also allows dredging too early to protect FYLF tadpoles as it allows dredging to start September 1, when FYLF tadpoles could be present through October.

The Class A Restriction would fully protect the FYLF remaining population. However, as that option is not likely to be chosen, **our Center recommends a Modified Class C Restriction where suction dredging is only allowed from October 1 through November 31 after FYLF have transformed and are able to leave the water**.

Restricting the timeframe suction dredging is allowed from overlapping with the presence of FYLF eggs and the time when tadpoles are present is the only way to protect the species young from the activity. According to the DSEIR, suction dredging is fatal for both FYLF eggs and tadpoles.

Dredging kills amphibian eggs, *"would not likely be able to withstand the mechanical action of transport through a suction dredge (pages 4.3-26, 27)."*

Dredging kills or displaces tadpoles, *"Assuming an escape velocity of 12 body lengths/sec, a foothill yellow-legged frog tadpole would be capable of a maximum swim velocity of approximately 10 to 66 cm/sec. Thus, if subjected to the near-field velocity of a suction dredge, neither behavior nor speed would allow a tadpole to escape. Therefore, in the case of foothill yellow-legged frog tadpoles, the animal would likely be entrained, flushed downstream and displaced from its natal area."*(pg 4.3-27)

Entrainment kills tadpoles,"..,*If young were to survive the passage through the dredge they would most likely suffer from predation and physiological stressors* (page 4.3-27)."

Dredging has a considerable negative impact on the presence of amphibian larvae, *"...dredging between April and August had a negative effect on the presence of amphibian larvae due to the fact that amphibian larvae are only present during spring and early summer (Twisk et al., 2000). Disturbance during the larval developmental period apparently has a considerable negative impact on the presence of amphibian larvae (Twisk et al., 2000)* (page 4.3-27)."

The findings for *Impact BIO-FISH-2* states that, "*If left unrestricted, direct entrainment, displacement or burial of eggs, larvae and mollusks by suction dredging would be potentially significant with respect to Significance Criteria A and D. However,* ***the Proposed Program incorporates spatial and temporal restrictions to protect the most vulnerable early life stages of Fish action species*** (Table 4.3-1)." Our Center strongly disagrees with this finding, as the temporal restrictions do **not** protect FYLF, and **the proposed regulations to provide additional protection for *Fish* species are completely unrealistic as they are not enforceable nor legally mandated to be consistently monitored** by DFG staff.

For example: *"Section 228 (k)(16): requires dredgers to avoid the disturbance of eggs, redds, tadpoles and mollusks."*
-This regulation is meaningless, it is unrealistic to expect dredgers to have the applicable knowledge or ability to comply with this regulation, and it is not enforceable by DFG. If dredging is allowed to overlap with *Fish* eggs or their early lifestages, they will likely be entrained, displaced, or buried and will not survive.

Section 228(k)(13): prohibits dredging in mussel beds.
-No one is likely to be monitoring to ensure that dredging does not occur in mussel beds. If there is no definite monitoring, then this "requirement" is unenforceable. Without a major penalty or fine for dredgers who do not follow the regulations, compliance cannot be expected to occur.

Section 228(k)(14): requires dredgers to take reasonable care to avoid dredging silt and clay materials that may result in increased turbidity and deposition of fines on the gravels.
-Again, this is regulation is meaningless as it is not enforceable and is not going to be monitored and there is no set fine for dredgers that do not follow this regulation.

Section 228(k)(15): requires dredgers to level all tailing piles prior to working another excavation site or abandoning the excavation site.
-This regulation is meaningless as it is not enforceable or monitored, and there is no fine for dredgers that don't follow it.

It is unrealistic and legally inconsistent with CEQA for the EIR to expect dredgers to effectively and consistently follow the Proposed Regulations when there is no legally mandated monitoring tied to desired actions, nor clearly identified enforcement requirements, nor significant penalties mandated for infractions.

*"While the Proposed Regulation prohibit dredge activities into streambanks, similar regulations were previously in place and it has been observed that some illegal activity occurred that caused bank erosion and instability (McCleneghan and Johnson, 1983; USFS, 2007); this is also likely to occur under the Proposed Program (*4.3-46)."

Since it is unknown how many if any dredgers will abide by the Proposed Regulations, and it is certain that some or all dredgers will not follow the Proposed Regulations to some extent. Our Center **strongly disagrees that *Impact BIO-FISH-2* will be "Less than Significant,"** when any deleterious impact to the FYLF is significant and every single dredger is having an unknown cumulative level of impact on the FYLF and their habitat. Furthermore, the indirect negative effect from suction dredging (increased sedimentation) on amphibian eggs and tadpoles can be just as serious as the direct negative effect from the entrainment of eggs and tadpoles.

"Increased suspension of solids in the water column can affect the development of amphibian embryos and tadpoles in several ways. First, suspended solids can result in decreased amounts of dissolved oxygen in the water column. Dissolved oxygen is critical for the survival of developing amphibian eggs (McDiarmid and Altig, 1999), which may suffocate when waters become oxygen-depleted. Pre-metamorphic larvae (i.e., those that are at the hatchling development stage [Gosner stage 21 through 24]), are also at risk for suffocation during this period as they are respiring aquatically (McDiarmid and Altig, 1999) (page 4.3-29)."

"In California, several amphibian species have been identified as being directly impacted by the increase in sedimentation that results from suction dredging. ... Changes to hydrologic condition and associated sediment loads during the spring breeding and summer larval season are the principal threat to the conservation of the foothill yellow-legged frog (Kuperfberg., 2009) (page 4.3-30)."

"Sediment increases in a stream in northern California caused significantly lower densities of amphibians (Welsh and Olliver, 1998). Although the sediment effects were species – specific, reflecting differential use of stream microhabitats, the reflected decrease in densities by these species (such as tailed frog, Ascaphus truei) due to increased fine sediments on the streambed matrix for critical life requisites, such as cover and foraging (Welsh and Ollivier, 1998). Other species that may be subject to similar effects and present in location of suction dredging include Arroyo toad (Bufo californicus), as described above, and foothill yellow-legged frog (page 4.3-30)."

"Finally, tadpole growth and development can be significantly reduced by increases of sediment and activities in catchments that increase sediment loads in streams. .... Sedimentation downstream of the dredging area coats the sand and gravel supporting interstitial algae, bacteria and diatoms upon which tadpoles feed. In addition, suction dredging may reduce the abundance of tadpole prey resources through the direct scour or entrainment of periphyton (i.e., algae, microbes, and detritus) in the vicinity of the dredging activity. Although this may be a temporary effect it may occur at a critical developmental stage, and therefore, have negative impacts on the organisms (page 4.3-30)."

Every aspect of suction dredging has a negative impact on the FYLF. To protect this species, suction dredging should not be allowed in FYLF habitat. The Class A Restriction (No suction dredging allowed at any time) is the only option that would protect this species from the negative effects of suction dredging.

Calaveras County:

Water	*Description*	*Class*	*Action Species*	*CSERC Class*	*Reason*
Multiple Waters	All river and streams in the County, unless otherwise noted below	H (Open all year)	N/A	D (Open to dredging from 7/1 - 1/31)	To provide a rest and recovery period
Multiple Waters	All rivers and steams in the County west of Highway 49, unless otherwise noted below	C (Open to dredging 6/1 – 9/30)	Hardhead, CV Chinook (Late Fall-run), CV Steelhead	A (No dredging permitted at any time)	To protect Hardhead, CV Chinook (Late Fall-run), CV Steelhead
Calaveras River, North Fork	Mainstem and all tributaries, except Jesus Maria Creek	D (Open to dredging from 7/1 - 1/31)	Foothill yellow-legged frog	Modified C (Open 10/1 – 11/31)	To protect FYLF tadpoles
Calaveras River, South Fork	Mainsten and all tributaries	D (Open to dredging from 7/1 - 1/31)	Foothill yellow-legged frog	Modified C (Open 10/1 – 11/31)	To protect FYLF tadpoles
Forest Creek	Mainstem and all tributaries	E (Open to dredging from 9/1 - 1/31)	Foothill yellow-legged frog	Modified C (Open 10/1 – 11/31)	To protect FYLF tadpoles
Mokelumne River	Mainstem from Pardee Dam upstream to Highway 49	D (Open to dredging from 7/1 - 1/31)	Foothill yellow-legged frog	Modified C (Open 10/1 – 11/31)	To protect FYLF tadpoles
Mokelumne River, Middle Fork	Mainstem and all tributaries, except Forest Creek	D (Open to dredging from 7/1 - 1/31)	Foothill yellow-legged frog	Modified C (Open 10/1 – 11/31)	To protect FYLF tadpoles
Mokelumne River, North Fork	Mainstem and all tributaries from Tiger Creek upstream to Salt Springs Reservoir	E (Open to dredging from 9/1 - 1/31)	Foothill yellow-legged frog	Modified C (Open 10/1 – 11/31)	To protect FYLF tadpoles
Mokelumne River, South Fork	Mainstem and all tributaries	D (Open to dredging from 7/1 - 1/31)	Foothill yellow-legged frog	Modified C (Open 10/1 – 11/31)	To protect FYLF tadpoles
Stanislaus River, North Fork	Mainstem and all tributaries	D (Open to dredging from 7/1 - 1/31)	Foothill yellow-legged frog	Modified C (Open 10/1 – 11/31)	To protect FYLF tadpoles

Reason Continued:

Foothill Yellow-Legged Frog (FYLF) (*Rana boylii*)**:**
As discussed previously (see discussion below Amador County), FYLF eggs can be present from April through July, hatch in 5-37 days depending on water temperature, and it takes 3 to 4 months for tadpoles to transform from July to October (http://www.californiaherps.com/frogs/pages/r.boylii.html).

The Class D Restriction does not protect FYLF tadpoles as it allows dredging to start July 1, which directly overlaps with the time when tadpoles are present in the water from July to October.

The Class E Restriction also allows dredging too early to protect FYLF tadpoles as it allows dredging to start September 1, when FYLF tadpoles could be present through October.

The Class A Restriction would fully protect the FYLF remaining population. However, as that option is not likely to be chosen, our Center recommends a Modified Class C Restriction where suction dredging is only allowed from October 1 through November 31 after FYLF have transformed and are able to leave the water.

Restricting the timeframe suction dredging is allowed from overlapping with the presence of FYLF eggs and tadpoles are present is the only way to protect the species young from the proposed activity. According to the DSEIR, suction dredging is fatal for both FYLF eggs and tadpoles.

Hardhead (*Myooharodon* conocephalus)**:**
According to Table 4.3-1, *the hardhead is a Species of Special Concern that was once widespread but has become increasingly isolated in foothill streams, which leaves the remaining populations vulnerable to localized extinctions (Moyle, 2002). Impacts to the hardhead spawning adults and early lifestages could result in a deleterious effect for the species. Spawning mainly occurs in April and May; some evidence suggests spawning may occur into August (Moyle, 2002).*

"The hardhead is usually found in clear deep streams with a slow but present flow as they do not prefer low dissolved oxygen. Spawning may occur in pools, runs, or riffles, typically in gravel or rocky substrate. The young larval hardhead upon hatching will remain under vegetative cover along the stream margins (http://calfish.ucdavis.edu/species/?uid=37&ds=241)."

The Class F Restriction would allow dredging to begin July 1, which overlaps with the hardheads breading season that goes into August. Allowing dredging to begin July 1 could have a negative impact on the spawning adults, entrain and kill the eggs, and entrain and kill the young hardhead that are utilizing the streamside vegetation.

The Class A Restriction would fully protect the Hardhead's remaining population. However, as that option is not likely to be chosen, our Center recommends a Modified Class

C Restriction where suction dredging is only allowed from October 1 through November 31 to protect the spawning adults, eggs, and larval young.

Chinook Salmon (Central Valley fall/late fall-run ESU)(Oncorhynchus tshawytscha):

According to Table 4.3-1, *Impacts to spawning adults and early lifestages (i.e., incubation and sac fry periods) could result in a deleterious effect. Peak spawning period is generally October to November, but can continue through January. Fry typically emerge December through March.*

Suction dredging reduces the suitability of Chinook salmon's spawning grounds and can have a considerable negative effect on the developing eggs and young.

To produce viable young, several fish species (including salmonids and lampreys) require uncompacted gravel with high permeability that consists of unclogged interstices which allow for the removal of metabolic wastes (Hausle and Coble, 1976). The availability of intragravel water flow (Vaux, 1962; Cooper, 1965) and dissolved oxygen are also critical for the survival of developing salmonid eggs (Cooper, 1965; Daykin, 1965). Reduced flow and oxygen concentrations (e.g., from higher levels of fine particles [fines] or increased organic matter) can result in a number of negative effects, including the reduced size of embryos at various developmental stages, premature emergence of alevins (newly hatched salmon still attached to the yolk sac), increased alevin development time, and higher pre- and post- hatching mortality (Silver et al., 1963; Shumway et al., 1964; Brannon, 1965; Spence et al., 1996; Merz et al., 2006). Dredging has potential to release fine materials which can clog interstitial spaces and cause such effects. Increased fines in dredged areas may also delay emergence of fry; this may result in smaller fry that are less able to compete for resources than their larger counterparts (e.g., those that have experienced normal emergence) (Everest et al., 1987). While the severity of these effects would likely vary depending on the species or the hydrologic conditions of the watershed, dredging may have a substantial negative effect on the spawning grounds and on the developing eggs and larvae of many fish species. Excessive sedimentation from a variety of activities, including mining and road construction may also smother substrates and impair egg-laying or survivorship of eggs or young mollusks (Duncan, 2005) (page 4.3-29).

The Class C Restriction (Open to dredging June 1 – September 30) does not protect the migrating Chinooks salmon adults or their spawning grounds (or their eggs and young as suction dredging releases fine materials that clog interstitial spaces that are important to their development), as it allows dredging immediately prior to their peak spawning period October to November.

To protect this species, CSERC recommends a Class A Restriction (No suction dredging allowed at anytime) for waters that are utilized by Chinook salmon for breeding.

Steelhead (Central Valley DPS) (Oncorhynhus mykiss irideus):
According to table 4.3-1, *steelhead adults begin to enter freshwater in August, peaking in late-September to October. Adults hold in mainstem drainages until flows in tributaries are high enough to enter for spawning (Moyle, 2002). Peak spawning period is generally December through April. Impacts to spawning adults and early lifestages could result in a deleterious effect*

The Class C Restriction (Open to dredging 6/1 – 9/30) does not protect steelhead young, as they spend the first 1 to 2 years of their lives in their natal stream. During this time, they young would be vulnerable to entrainment by dredgers and could be harmed by increased sedimentation resulting from the activity.

"Steelhead spawn in freshwater streams and rivers, typically spending the first 1 to 2 years of their lives as residents of their natal stream." "During their time as stream residents, steelhead require water that is generally cool, 10-21 ° C, and saturated with oxygen. These requirements are best satisfied in section of stream that have cool and clear water input and are relatively fast-moving. (http://hcp.stanford.edu/trout.html)."

CSERC recommends a Class A Restriction (No dredging allowed at any time) in the river segments containing steelhead in order to protect this species' young while they reside in their natal streams which could result in a deleterious effect to the species.

Mariposa County:

Water	*Description*	*Class*	*Action Species*	*CSERC Class*	*Reason*
Multiple Waters	All rivers and streams in the County from 2,000 to 5,000 feet elevation	D (Open to dredging from 7/1 through 1/31)	Foothill yellow-legged frog	Modified C (Open 10/1 – 11/31)	To protect FYLF tadpoles
Multiple Waters	All river and stream in the County below 2,000 feet elevation	F (Open to dredging from 7/1 through 9/30)	Hardhead, Foothill yellow-legged frog	Modified C (Open 10/1 – 11/31)	To protect FYLF tadpoles and Hardhead

Reason Continued:

Foothill Yellow-Legged Frog (FYLF) (*Rana boylii*):
The Class D and F Restrictions do not protect FYLF tadpoles as they allow dredging to start July 1, which directly overlaps with the presence of FYLF tadpoles from July to October.

The Class A Restriction would fully protect the FYLF remaining population. However, as that option is not likely to be chosen, our Center recommends a Modified Class C Restriction where suction dredging is only allowed from October 1 through November 31 after FYLF have transformed and are able to leave the water.

Restricting the timeframe suction dredging is allowed from overlapping with the presence of FYLF eggs and tadpoles are present is the only way to protect the species young from the proposed activity. According to the DSEIR, suction dredging is fatal for both FYLF eggs and tadpoles (see the discussion below Mariposa County).

Hardhead (*Myooharodon* conocephalus)**:**
According to Table 4.3-1, *the hardhead is a Species of Special Concern that was once widespread but has become increasingly isolated in foothill streams, which leaves the remaining populations vulnerable to localized extinctions (Moyle, 2002). Impacts to the hardhead spawning adults and early life stages could result in a deleterious effect for the species. Spawning mainly occurs in April and May; some evidence suggests spawning may occur into August (Moyle, 2002).*

"The hardhead is usually found in clear deep streams with a slow but present flow as they do not prefer a low dissolved oxygen. Spawning may occur in pools, runs, or riffles, typically in gravel or rocky substrate. The young larval hardhead upon hatching will remain under vegetative cover along the stream margins (http://calfish.ucdavis.edu/species/?uid=37&ds=241)."

The Class F Restriction would allow dredging to begin July 1, which overlaps with the hardheads' breeding season that goes into August.

Allowing dredging to begin July 1 could have a negative impact on the spawning adults, entrain and kill the eggs, and entrain and kill the young hardhead that are utilizing the streamside vegetation.

The Class A Restriction would fully protect the Hardhead's remaining population. However, as that option is not likely to be chosen, our Center recommends a Modified Class C Restriction where suction dredging is only allowed from October 1 through November 31 to protect the spawning adults, eggs, and larval young.

Tuolumne County:

Water	*Description*	*Class*	*Action Species*	*CSERC Class*	*Reason*
Multiple Waters	All river and steams in the County from 2,00 feet to 5,500 feet elevation, unless otherwise noted below	D (Open to dredging from 7/1 through 1/31)	Foothill yellow-legged frog	Modified C (Open 10/1 – 11/31)	To protect FYLF tadpoles
Multiple Waters	All river and streams in the County below 2,000 feet elevation, unless otherwise noted below	F (Open to dredging 7/1 through 9/30)	Foothill yellow-legged frog, Hardhead, Steelhead, Chinook Salmon	A (No dredging permitted at any time)	To protect FYLF tadpoles, Hardhead, Steelhead, Chinook Salmon
Amber Creek (Six Bit Gulch Tributary)	Mainstem	E (Open to dredging from 9/1 through 1/31	Red Hills Roach	A (No dredging permitted at any time)	To protect Red Hills Roach
Horton Creek (Six Bit Gulch Tributary)	If the steam is not flowing in the proposed location of dredging, dredging is limited to no more than 1 pool out of every 4 contiguous pools or submit notifications to CDFG under Section 1602	B (Open to dredging from 7/1 through 8/31)	Red Hills Roach	A (No dredging permitted at any time)	To protect Red Hills Roach
Roach Creek (Six Bit Gulch Tributary)	If the steam is not flowing in the proposed location of dredging, dredging is limited to no more than 1 pool out of every 4 contiguous pools or submit notifications to CDFG under Section 1602	B (Open to dredging from 7/1 through 8/31)	Red Hills Roach	A (No dredging permitted at any time)	To protect Red Hills Roach

Reason Continued:

Foothill Yellow-Legged Frog (FYLF) (*Rana boylii*):
The Class does not protect FYLF tadpoles as they allow dredging to start July 1, which directly overlaps with the presence of FYLF tadpoles from July to October.

The Class A Restriction would fully protect the FYLF remaining population. However, as that option is not likely to be chosen, our Center recommends a Modified Class C Restriction where suction dredging is only allowed from October 1 through November 31 after FYLF have transformed and are able to leave the water.

Restricting the timeframe suction dredging is allowed from overlapping with the presence of FYLF eggs and tadpoles are present is the only way to protect the species young from the proposed activity. According to the DSEIR, suction dredging is fatal for both FYLF eggs and tadpoles (see the discussion below Mariposa County).

Red Hills roach (*Lavinia symmetricus*):
According to table 4.3-1, *the Red Hills roach's distribution is extremely limited. Impacts to organisms and habitat must be carefully managed to avoid deleterious effect. Occupied habitat has the potential to be degraded by suction dredging; entrainment of organisms could also occur. Class E restriction is proposed to minimize potential impacts to spawning adults, early lifestages and occupied habitat.*

To protect the Red Hills roach, suction dredging should not be allowed in any waters where this species resides. The following restriction cannot protect the species as there will not be any monitoring or enforcement to ensure the species is not harmed.

"If the steam is not flowing in the proposed location of dredging, dredging is limited to no more than 1 pool out of every 4 contiguous pools or submit notifications to CDFG under Section 1602 (Appendix L, Tuolumne County)."

This regulation is meaningless, as DFG cannot ensure that no more than 1 pool out of every 4 contiguous pools will be dredged. There is nothing preventing dredgers from dredging every pool in the vicinity since there isn't any monitoring, enforcement, or fines for violation the regulation. Nor does the regulation limit the total number of dredgers that are allowed to dredge these streams. Every pool could end up being dredged more than once; degrading the occupied habitat and causing a deleterious effect that could be significant to the species.

CSERC recommends a Class A Restriction (No dredging allowed at any time) to protect the Red Hills roach. The Class B Restriction (open to dredging from 7/1 to 8/30) would allow dredging during two of the driest, hottest months of the year when the species is already struggling to survive.

Stanislaus County:

Water	*Description*	*Class*	*Action Species*	*CSERC Class*	*Reason*
Multiple waters	All rivers and streams in the County west of I-5	D (Open to dredging from 7/1 through 1/31)	Foothill yellow-legged frog	Modified C (Open 10/1 – 11/31)	To protect FYLF
Multiple waters	All river and stream in the County east of I-5, unless otherwise noted	H (Open to dredging throughout the year	N/A	D (Open to dredging from 7/1 - 1/31)	To provide a rest and recovery period
San Joaquin River	Mainstem	C (Open to dredging 6/1 – 9/30)	CV Chinook, CV Steelhead	A (No dredging permitted at any time)	To protect CV Chinook, CV Steelhead
Stanislaus River	Mainstem	C (Open to dredging 6/1 – 9/30)	CV Chinook, CV Steelhead	A (No dredging permitted at any time)	To protect CV Chinook, CV Steelhead
Tuolumne River	Mainstem	C (Open to dredging 6/1 – 9/30)	CV Chinook, CV Steelhead	A (No dredging permitted at any time)	To protect CV Chinook, CV Steelhead

Reason Continued:

Foothill Yellow-Legged Frog (FYLF) (*Rana boylii*):
The Class does not protect FYLF tadpoles as they allow dredging to start July 1, which directly overlaps with the presence of FYLF tadpoles from July to October.

The Class A Restriction would fully protect the FYLF remaining population. However, as that option is not likely to be chosen, our Center recommends a Modified Class C Restriction where suction dredging is only allowed from October 1 through November 31 after FYLF have transformed and are able to leave the water.

Restricting the timeframe suction dredging is allowed from overlapping with the presence of FYLF eggs and tadpoles are present is the only way to protect the species young from the proposed activity. According to the DSEIR, suction dredging is fatal for both FYLF eggs and tadpoles (see the discussion below Mariposa County).

Chinook Salmon (Central Valley fall/late fall-run ESU)(Oncorhynchus tshawytscha):

According to Table 4.3-1, *Impacts to spawning adults and early lifestages (i.e., incubation and sac fry periods) could result in a deleterious effect. Peak spawning period is generally October to November, but can continue through January. Fry typically emerge December through March.*

Suction dredging reduces the suitability of Chinook salmon's spawning grounds and can have a considerable negative effect on the developing eggs and young (see discussion following Calaveras County).

The Class C Restriction (Open to dredging June 1 – September 30) does not protect the migrating Chinooks salmon adults or their spawning grounds (or their eggs and young as suction dredging releases fine materials that clog interstitial spaces that are important to their development), as it allows dredging immediately prior to their peak spawning period October to November.

To protect this species, CSERC recommends a Class A Restriction (No suction dredging allowed at anytime) for waters that are utilized by Chinook salmon for breeding.

Steelhead (Central Valley DPS) (Oncorhynhus mykiss irideus)**:**
According to table 4.3-1, *steelhead adults begin to enter freshwater in August, peaking in late-September to October. Adults hold in mainstem drainages until flows in tributaries are high enough to enter for spawning (Moyle, 2002). Peak spawning period is generally December through April. Impacts to spawning adults and early lifestages could result in a deleterious effect*

The Class C Restriction (Open to dredging 6/1 – 9/30) does not protect steelhead young, as they spend the first 1 to 2 years of their lives in their natal stream. During this time, they young would be vulnerable to entrainment by dredgers and could be harmed by increased sedimentation resulting from the activity.

"Steelhead spawn in freshwater streams and rivers, typically spending the first 1 to 2 years of their lives as residents of their natal stream." "During their time as stream residents, steelhead require water that is generally cool, 10-21 °C, and saturated with oxygen. These requirements are best satisfied in section of stream that have cool and clear water input and are relatively fast-moving. (http://hcp.stanford.edu/trout.html)."

CSERC recommends a Class A Restriction (No dredging allowed at any time) to protect this species young while they reside in their natal streams that could result in a deleterious effect to the species.

Conclusion

At the Sacramento hearing, hundreds of pro-suction mining advocates jammed into the hearing room. Many openly derided rules to protect threatened amphibians or to protect wildlife or humans from noise created by dredging pumps. Many pro-mining speakers showed that they had not read or comprehended the Proposed Program description or other parts of the DSEIR.

The basic premise behind the Proposed Program is that guidelines will be made available to the suction dredgers, and although the guidelines are not legally enforceable, that somehow possessing a copy of those guidelines will magically result in program compliance by miners and a high level of resource protection due to the sensitivity of suction dredgers.

That is, of course, **pure nonsense**. Without assured monitoring and enforcement, any suggested guideline actions cannot be expected to be consistently followed.

The miners who surrounded me during the three+ hours I waited to testify at the first Sacramento hearing openly joked about sucking up yellow-legged frogs or any other threatened critters they came across, and they openly joked about how they would intentionally defy or ignore new restrictions that would interfere with their operations.

Based on the testimony at the Sacramento and other hearings, the CA Department of Fish and Game must assume that suction dredging miners will NOT fully comprehend or abide by the new regulations that are adopted, and that the miners will NOT have the scientific background nor ecological interest to painstakingly avoid sucking up tadpoles or avoid egg masses or other sensitive resources. Accordingly, river and stream segments should only be made open to suction dredging where potential harm is low and where domestic water supply intake locations, special status species, and other key values are not at risk.

To be consistent with State law and to best protect water, wildlife, and social recreation values, CSERC urges the State to adopt the Low Impact Alternative described in these comments or to incorporate into the final selected alternative the basic mitigation measures in that described alternative.

Respectfully,

Lindsey Myers

Lindsey Myers, staff biologist

John Buckley

John Buckley, executive director