

EXECUTIVE SUMMARY

Introduction

The California Department of Fish and Game (CDFG) has prepared this document to comply with a court order and to meet its broader obligations of environmental protection with respect to its existing suction dredge mining permitting program. CDFG has prepared a draft subsequent environmental impact report (DSEIR) to analyze the potential of any new significant or substantially more severe environmental impacts than were previously disclosed in an environmental impact report (EIR) prepared in 1994. The proposed project, for the purposes of this DSEIR, consists of the proposed amendments to CDFG's previous regulations governing suction dredge mining throughout California, and suction dredging activities conducted consistent with those amendments. This proposed project is referred to as the "Proposed Program" or simply the "Program" throughout this document. The environmental assessment of the Program was developed in parallel with amendments to the previous regulations governing suction dredge mining throughout California. To most accurately reflect the environmental effects of the Program, the DSEIR includes an assessment of the suction dredge activities as well as the proposed amendments to the previous regulations.

This DSEIR was prepared to provide the public, responsible agencies, and trustee agencies with information about the potential environmental effects of implementation of the Proposed Program. CDFG has prepared this DSEIR in compliance with the California Environmental Quality Act (CEQA) of 1970 (as amended) and the State CEQA Guidelines (Cal. Code Regs., tit. 14 §15000 et seq.). CDFG is the lead agency on this Program.

Program Overview

Program Area

The scope of the Program is statewide. Suction dredging occurs in rivers, streams and lakes throughout the state where gold is present and CDFG's draft suction dredge regulations identify areas throughout the state that would be open or closed to suction dredging. Most dredging takes place in streams draining the Sierra Nevada, Klamath Mountains, and the San Gabriel Mountains (see Figure ES-1, as well as Figures 3-4, 3-5 and 3-6 in Chapter 3 of this document).

Program Background

Small-scale suction dredge mining activity in California began in the 1960's and peaked in the late 1970's and early 1980's, when gold prices were high. Currently, suction dredge mining is prohibited by state law. The following discussion pertains to suction dredging activities prior to the existing moratorium, and what will occur when new regulations are adopted.

CDFG administers a permitting program governing the use of vacuum and suction dredge equipment pursuant to Fish and Game Code section 5653 et seq. (Appendix A). The previous regulations promulgated by CDFG governing suction dredge mining are found in title 14 of the California Code of Regulations, commencing with section 228. Under the statute and regulations, any California resident or non-resident could obtain a suction dredge mining permit from CDFG upon payment of a fee specified by statute. The permits issued by CDFG authorize suction dredge mining throughout California subject to the terms and conditions set forth in the regulations. On average, CDFG issued approximately 3,200 suction dredge mining permits to California residents annually for the 15 years prior to the current moratorium established in July 2009. The comparable average number of non-resident suction dredge mining permits issued annually by CDFG was approximately 450.

CDFG promulgated the previous regulations governing suction dredge mining in 1994 after preparing and certifying an EIR (State Clearinghouse Number 93102046) under CEQA (hereafter, 1994 EIR). CDFG considered proposed amendments to the regulations governing suction dredge mining in 1997, releasing a draft subsequent EIR for public review that same year (hereafter, 1997 Draft SEIR). However, the 1997 Draft SEIR was never completed or certified, and the proposed amendments were not adopted.

CDFG's current effort under CEQA stems from a legal challenge to the permitting program initiated in Alameda County Superior Court in May 2005 (*Karuk Tribe of California et al. v. California Department of Fish and Game* [Super. Ct. of Alameda County, 2005, No. RG05211597]). The *Karuk* lawsuit focused on the Klamath, Scott and Salmon River watersheds in northern California, and included allegations regarding impacts to various fish species, such as coho salmon (*Oncorhynchus kisutch*), and contended that CDFG's administration of the suction dredging program violated CEQA and various provisions of the Fish and Game Code. In February 2006, various mining interests and a number of individuals joined the lawsuit by court order as party interveners. In December 2006, the Alameda County Superior Court issued an order with the consent of all parties, directing CDFG to "conduct further environmental review pursuant to CEQA of its suction dredge mining regulations and to implement, if necessary, via rulemaking, mitigation measures to protect coho salmon and/or other special status fish species in the watershed of the Klamath, Scott, and Salmon rivers, listed as threatened or endangered after the 1994 EIR" (hereafter, December 2006 Court Order). For purposes of CEQA, the December 2006 Court Order describes CDFG's legal obligations in terms of Public Resources Code section 21166 and related provisions in the CEQA Guidelines found in sections 15162 through 15164.¹

On February 26, 2008, after conducting public outreach and reviewing the comments received, CDFG informed the Alameda County Superior Court that it intended to prepare a subsequent environmental impact report (SEIR) that would be statewide in scope and comply with the December 2006 Court Order.

This SEIR and related review under CEQA analyzes the new significant and substantially more severe environmental impacts that may be occurring under the 1994 permitting program that were not previously addressed by CDFG in the 1994 EIR. For the purposes of

¹ The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

1 this SEIR, the proposed project consists of proposed amendments to CDFG's previous
2 regulations governing suction dredge mining throughout California and the related suction
3 dredging that would occur consistent with those amendments (see summary below and
4 generally Cal. Code Regs., tit. 14, § 228 et seq.).

5 With respect to proposed amendments to the previous regulations, CDFG is charged by the
6 Fish and Game Code to issue suction dredge permits where CDFG determines, consistent
7 with the regulations, that the operation will not be deleterious to fish (Fish & G. Code, §
8 5653, subd. (b).) Any proposed amendments to CDFG's previous regulations governing
9 suction dredge mining must be promulgated in compliance with the Administrative
10 Procedure Act (APA) (Gov. Code, § 11340 et seq.). CDFG is conducting "formal rulemaking"
11 under the APA to promulgate the proposed amendments to the previous suction dredge
12 mining regulations concurrently with the environmental review of the Program required by
13 CEQA.

14 The use of vacuum or suction dredge equipment for instream mining is currently prohibited
15 in California by state law (Fish & G. Code, § 5653.1, added by Stats. 2009, ch. 62, § 1 (SB 670
16 (Wiggins)). As signed into law by Governor Schwarzenegger and effective August 6, 2009,
17 SB 670 (Wiggins) established a temporary moratorium on instream suction dredge mining
18 in California, even with an existing permit issued by CDFG. The new law also prohibits
19 CDFG from issuing any new permits under the previous regulations. The statewide
20 moratorium on instream suction dredge mining and the related prohibition on the issuance
21 of new permits will remain in place until CDFG completes the environmental review
22 required by the December 2006 Court Order; CDFG adopts, as necessary, the proposed
23 updates to the previous regulations; and any such updates become effective. (Fish & G.
24 Code § 5653.1, subd. (b).)

25 CDFG is also subject to a separate court order prohibiting the issuance of any new suction
26 dredge permits under the previous regulations. Issued by the Alameda County Superior
27 Court as a preliminary injunction on July 9, 2009, the order specifically prohibits CDFG from
28 expending any money from the California General Fund in connection with the suction
29 dredge permitting program. The court clarified on July 27, 2009, that the order and
30 preliminary injunction prohibits CDFG from issuing any new permits under the previous
31 regulations. The order and preliminary injunction will remain in place pending further
32 court order or other direction from the Alameda County Superior Court. (*Hillman et al. v.*
33 *California Dept. of Fish and Game*, Super. Ct. Alameda County, 2009, No. RG09434444, order
34 filed July 10, 2009.).

35 Program Description

36 Program Purpose

37 The purpose of the Program is to implement a permitting program for suction dredging
38 activities which complies with the requirements of Fish and Game Code section 5653 et seq.
39 and the December 2006 Court Order.

40 Program Objectives and Need

41 The objectives of the Program are as follows:

- Comply with the December 2006 Court Order;
- Promulgate amendments to CDFG's previous regulations as necessary to effectively implement Fish and Game Code section 5653 through 5653.9 and other applicable legal authorities to ensure that suction dredge mining will not be deleterious to fish;
- Develop a program that is implementable within the existing fee structure established by statute for the CDFG's suction dredge permitting program, as well as the existing fee structure established by the CDFG pursuant to Fish and Game Code section 1600 et seq.;
- Fulfill CDFG's mission of managing California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public;
- Ensure that the development of the regulations considers economic costs, practical considerations for implementation, and technological capabilities existing at the time of implementation; and
- Fulfill the CDFG's obligation to conserve, protect, and manage fish, wildlife, native plants, and habitats necessary for biologically sustainable populations of those species and as a trustee agency for fish and wildlife resources pursuant to Fish and Game Code section 1802.

Applicability

For purposes of this SEIR and the proposed regulations, a person is using suction dredge equipment when all of the following components are operating together for the purpose of vacuuming aggregate from a river, stream or lake:

- (1) a vacuum hose operating through the Venturi effect which vacuums sediment from the river, stream or lake; and
- (2) A motorized pump; and
- (3) A sluice box.

Please refer to Chapter 3, *Activity Description*, for a full description of suction dredging activities.

Non-Covered Activities

The following is a list of activities that are not considered suction dredging subject to CDFG's permitting authority under Fish and Game Code section 5653, subdivision (b). However, other permits or authorizations from CDFG or other agencies may be required, including in some instances a Lake or Streambed Alteration Agreement pursuant to Fish and Game Code section 1600 et seq.

- Use of a high banker outside of the current water level, when aggregate is delivered to the high banker by hand, shovel, bucket or equipment such as a front-end loader;

- Use of a high banker or sluice box above the ordinary high water line and above the current water level, where aggregate is vacuumed into the highbanker or sluice box from a gravel deposit outside the current water level of a river, lake or stream but which may be wetted by a water pump. This method is often referred to as booming;
- Processing of materials collected using a suction dredge, in upland areas outside of the current water level of a river, stream or lake;
- Panning for gold;
- Use of suction dredge equipment (e.g. pontoons, water pump or sluice box) on a river, stream or lake where the vacuum hose and nozzle have been removed;
- Sluicing or power sluicing for gold when no vacuum hose or nozzle is used to remove aggregate from the river, stream or lake; and
- Use of vacuums (e.g. shop-vacs) and hand tools above the current water level.

There may be other methods of placer mining, or other activities related to suction dredging that are not captured by the above list, but are nevertheless not considered suction dredging by CDFG. In addition, the use of a suction dredge (e.g., cutterhead dredge) for the purposes of infrastructure maintenance, flood control, or navigational purposes is not considered suction dredging for the purposes of this program, since it is not used for mineral extraction.

Activities Requiring Additional Notification under Fish and Game Code Section 1602

Some methods of suction dredging, or activities performed to facilitate suction dredging, require notification to CDFG as specified in Fish and Game Code section 1602, subdivision (a) as a conditional requirement for a valid suction dredging permit. Note that in these cases, both a valid suction dredge permit and notification and compliance with Fish and Game Code section 1602, subdivision (a) are required. These activities include any of the following:

- Use of motorized winches other motorized equipment for the movement of instream boulders or wood to facilitate suction dredge activities;
- Temporary or permanent flow diversions, impoundments, or dams constructed for the purposes of facilitating suction dredge activities;
- Suction dredging within lakes or reservoirs; and
- Use of a dredge with an intake nozzle greater than 4 inches in diameter.

Description of Draft Proposed Regulations

The following provisions of the current regulations will not be modified.

- Every person operating a suction dredge in the state of California for instream mining must be in possession of a suction dredge permit issued by CDFG. (Cal. Code Regs., tit. 14, § 228, subd. (b))

- Any person with a qualifying disability under the American with Disabilities Act who requires assistance in operating a suction dredge may also apply for an assistant suction dredge permit. (Cal. Code Regs., tit. 14, § 228, subd. (b))
- Permits can be revoked or suspended by CDFG regional manager or his/her designee for any violation of the laws or regulations pertaining to suction dredging. (Cal. Code Regs., tit. 14, § 228, subd. (h))
- Permits do not authorize trespass on any land or property or relief of the responsibility of complying with applicable federal, State, or local laws or ordinances. (Cal. Code Regs., tit. 14, § 228, subd. (m))
- Any water may be closed to suction dredging under emergency regulatory action by CDFG pursuant to Government Code section 11346.1. (Cal. Code Regs., tit. 14, § 228, subd. (n))

The draft proposed regulations include updated application requirements, limitations on the number of permits issued annually, equipment restrictions, methods of operation, and location of activities. These updates are summarized below and a comparison of the proposed draft regulations to the existing 1994 regulations is shown in Table ES-1, at the end of this chapter.

Application Requirements

At a minimum, suction dredge permit applications shall include valid identification and contact information for the permittee or assistant permittee, a list of up to six locations where the permittee plans to suction dredge providing either the county, stream name, township, range, quarter section, base, and meridian, or approximate centerpoint using latitude/longitude, as well as the approximate dates of dredging for each identified location and a list of all suction dredge equipment to be used under the permit.

Number of permits

CDFG will issue up to 4,000 permits annually, on a first-come, first-served basis.

Equipment Restrictions

The draft proposed regulations restrict nozzle size, hose size, and pump intake screens. Only the equipment listed in the application form may be operated under the permit.

Intake nozzles with an inside diameter larger than 4 inches are not allowed except under the following conditions:

- CDFG has conducted an on-site inspection and provided written approval of the proposed nozzle size, and the provisions of Fish and Game Code section 1602, subdivision(a) have been completed; and
- The maximum inside diameter of the intake nozzle is no larger than six inches (except in certain locations where an eight-inch intake nozzle is allowed), or a constricting ring with an inside diameter no larger than four inches has been permanently attached to the intake nozzle.

The inside diameter of the intake hose may not be more than two inches larger than the permitted intake nozzle size. For example, if the nozzle size is four inches, the inside diameter of the intake hose must not be greater than six inches.

Water pump intakes shall be covered with screening mesh with openings less than 3/32 inch (2.38 millimeter [mm]) for woven wire or perforated plate screens, or 0.0689 inch (1.75mm) for profile wire screens, with a minimum 27% open area.

Method of Operation

Under the proposed regulations, a permittee operating with a suction dredge permit would be required to comply with the following conditions:

- Dredging within three feet of the lateral edge of the current water level, including the edge of instream gravel bars or under any overhanging banks, is prohibited;
- Movement of boulders, logs, or other objects outside the current water level is prohibited;
- Use of motorized winches or other motorized equipment to move boulders, logs, or other objects is prohibited unless an on-site inspection is conducted and written approval provided by CDFG, and compliance with Fish and Game Code section 1602 subdivision (a) is demonstrated;
- Hand-powered winching is permitted within the current water level only. No woody streamside vegetation can be removed or damaged. Trees may be used as winch and pulley anchor points if trunk surfaces are protected from cuts or abrasions;
- Movement of any material embedded on the banks of river or streams is prohibited;
- Reasonable care shall be used to avoid dredging in silt and clay materials, the disturbance of which would significantly increase turbidity;
- Tailings piles shall be leveled prior to leaving the site;
- Damage or removal of streamside vegetation during dredging operations is prohibited;
- Cutting, movement, or destabilization of instream woody debris, such as root wads, stumps or logs, is prohibited;
- Construction of a dam or weir which concentrates flow in a way that reduced the total wetted area of a river or stream, or obstructs fish passage is prohibited unless an on-site inspection is conducted and written approval provided by CDFG and compliance with Fish and Game Code section 1602 subdivision (a) is demonstrated;
- Disturbing actively spawning fish, redds, live mussel beds, or tadpoles is prohibited;
- No import of earthen or fill material into a stream, river, or lake is allowed;

- Use of wheeled or tracked equipment instream as part of suction dredging is prohibited;
- All fueling and servicing of dredging equipment must not result in leaks, spills or otherwise release products into a watercourse or where the product may enter waters of the state.
- No fuel, lubricants, or chemicals may be stored within 100 feet of the current water level at the time of dredging, otherwise a containment system must be used;
- All equipment shall be cleaned of mud, oil, grease, debris, and plant and animal material before accessing riparian areas or use in stream or lakes (also see Appendix M for Invasive Aquatic Species concerns);
- The suction dredge operator permit number must be affixed to all permitted dredges at all times and in a manner that is clearly visible from the streambank or shoreline.

Area Restrictions

Seasonal and year-round closures for various waterbodies throughout the state have been identified in the draft regulations, based on potential for impacts to sensitive aquatic species. The reader is referred to Chapter 2 and Appendix L for a description of these closures.

In addition, permits issued pursuant to CDFG's proposed regulations do not allow suction dredging in lakes or reservoirs unless CDFG has conducted an on-site inspection and the requirements of Fish and Game Code section 1602, subdivision (a) have been completed. Suction dredging is not permitted in State Wildlife Areas or Ecological Reserves, and may also be restricted in waters designated under the state and federal Wild and Scenic Rivers Acts.

Best Management Practices Information

CDFG will develop and distribute a "Best Management Practices" pamphlet which will be issued to each permittee under the Proposed Program. Though some of the guidance contained in this pamphlet would not be legally enforceable by the CDFG, some requirements would be enforceable by other agencies, and the pamphlet will be designed to support the proposed amendments to the regulations by offering suggestions to further reduce or avoid potential environmental effects and inconveniences to others. Many of the "Best Management Practices" are derived from other agency's laws or regulations, suggested measures received during public comment, the Public Advisory Committee convened for the Program, and review of the regulatory practices of other states which would minimize environmental effects, but are either not applicable or enforceable under CDFG's legal mandates. Examples of guidance include ways to identify and avoid important cultural and historic resources, recommendations to keep encampment sites clean, and advice on the proper treatment of wastes. More information on the guidance that will be included is described in the individual resource discussions of Chapter 4.

Public Involvement Process

Scoping Comment Period

In accordance with State CEQA Guidelines (Cal. Code Regs., tit. 14, §§ 15082, subdiv. [a], 15103, 15375), CDFG circulated a Notice of Preparation (NOP) of an EIR for the Proposed Program on October 26, 2009 (see Appendix B). The NOP, in which CDFG was identified as lead agency for the Proposed Program, was circulated to the public, local, state, and federal agencies, and other interested parties. The purpose of the NOP was to inform responsible agencies and the public that the Proposed Program could have significant effects on the environment and to solicit their comments.

To provide the public and regulatory agencies an opportunity to ask questions and submit comments on the scope of the SEIR and regulation amendments, public scoping meetings were held during the NOP review period. Because the suction dredge permitting program is a “project of statewide, regional, or area wide significance,” the scoping meetings were conducted on consecutive days in three different locations throughout the state. The scoping meetings were held in Fresno on November 16, 2009; Sacramento on November 17, 2009; and Redding on November 18, 2009.

During the scoping period, 284 comment letters were received. These comments were summarized and included in their entirety in the Scoping Report prepared for this SEIR (Appendix C).

Public Advisory Committee

Based on suggestions received during the public scoping process, CDFG convened a Public Advisory Committee (PAC) for the Program. The overall goal of the PAC was to assist CDFG in exploring potential regulatory approaches to help with development of proposed regulations for suction dredging. By establishing a collaborative environment, CDFG intended that the PAC would provide input on technical issues relevant to the regulatory development effort. While CDFG considered recommendations of all PAC participants, ultimately, the responsibility to develop new regulations belongs to CDFG.

The PAC had a diverse membership, including 25 individuals representing federal agencies, county governments, environmental/conservation and mining interests, private industry, the Karuk Tribe, and scientists. The group met on February 11th and 25th, and on March 11th, 2010. All three meetings included presentations on a variety of topics including geomorphology, water quality, mercury, mining techniques, and environmental changes since the 1994 regulations were adopted, CDFG enforcement history and capabilities, and Tribal fish allocations and harvesting techniques. All the presentations were intended to help increase the PAC’s collective understanding of issues pertinent to suction dredging.

This effort created a forum for sharing information and knowledge on a wide range of topics that collectively offered helpful insights for CDFG’s consideration. In particular, the PAC provided valuable input and suggestions on which components of the 1994 regulations should be considered for inclusion in a future regulatory program.

A summary of the PAC process and outcomes is provided in Appendix G.

Public and Agency Review of SEIR

This document will be circulated to local, state, and federal agencies and to interested organizations and individuals, including the general public, who may wish to review and comment on the report. Its publication marks the beginning of a 60-day public review period, which concludes on April 29, 2011. Written comments concerning this DSEIR should be directed to the name and address listed below.

Submittal of written comments via e-mail (in Microsoft Word format) would be greatly appreciated.

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

e-mail: dfgsuctiondredge@dfg.ca.gov

All documents mentioned herein or related to this Program can be reviewed online at the Program Website (<http://www.dfg.ca.gov/suctiondredge>).

Preparation of Final SEIR

Written and oral comments received in response to the Draft SEIR will be addressed in a Response to Comments document which, together with the Draft SEIR, will constitute the Final SEIR. In addition, CDFG will consider the comments received to refine, as necessary, the proposed updates to the previous regulations. Once completed, the Final SEIR will inform CDFG's exercise of discretion as a lead agency under CEQA in deciding whether or how to approve the Proposed Program as prescribed by the Fish and Game Code.

Areas of Known Controversy

Based on input during the scoping period (see *Public Involvement Process*, above), several areas of public concern have been identified regarding the Program. These issues are listed below. The intent is not to provide a comprehensive discussion of issues and concerns, rather, to highlight the issues of apparent greatest concern raised in comments to date. The following areas of public concern have been identified regarding the Program:

- Mining rights
- Suction dredge mining location restrictions
- Environmental effects of mining, particularly related to fisheries and water quality (e.g., remobilization of mercury and mercury enriched sediment)
- Cultural resources and tribal practices
- Use of hazardous materials other than fuels at suction dredger campsites

Key Issues and Significant Impacts

This section discusses key issues of concern relative to the Proposed Program and the conclusions of this document regarding those issues, as well as any significant impacts that were identified. This is not a comprehensive discussion of impacts of the Proposed Program, for which the reader is directed to Table ES-2, Summary of Impacts and Mitigation Measures, at the end of this chapter.

Environmental factors potentially affected by the Program include:

- Hydrology and Geomorphology
- Water Quality and Toxicology
- Biological Resources
- Hazards and Hazardous Materials
- Cultural Resources
- Aesthetics
- Noise
- Recreation
- Transportation and Traffic, and
- Mineral Resources.

Chapters 4 and 5 of this EIR document address each of these environmental topics and the impacts of the Program.

Specific issues that were determined in this SEIR to have significant and unavoidable impacts related to water quality, cultural, noise, and cumulative water quality impacts. See Chapters 4.2 *Water Quality and Toxicology*, 4.5 *Cultural Resources*, 4.7 *Noise*, and Chapter 5 *Other Statutory Considerations* (which discusses cumulative water quality impacts) for a detailed discussion of these impacts.

Significant and Unavoidable Impacts

Water Quality Impacts Associated with Suction Dredge Discharges

Mercury Resuspension and Discharge

Suction dredging has the potential to contribute to: (1) watershed mercury loading to downstream reaches within the same water body and to downstream water bodies, (2) methylmercury formation in the downstream reaches/water bodies, and (3) bioaccumulation in aquatic organisms in these downstream reaches/water bodies. The associated increase in health risks to wildlife (including fish) or humans consuming these organisms is considered a potentially significant impact.

Potential mitigation measures to reduce the impact would necessarily involve actions to avoid or reduce total mercury discharge from areas containing elevated sediment mercury

and/or elemental mercury from suction dredging activities under the Program. However, a comprehensive set of actions to mitigate the potential impact through avoidance or minimization of mercury discharges has not been determined at this time, nor is its likely effectiveness known. This impact would remain potentially significant until such time that a sufficient and feasible mitigation program is developed, but there is no guarantee that this type of mitigation is practicable. As such, this impact is considered significant and unavoidable. For a more complete discussion of this impact, please refer to the discussion under Impact WQ-4 (Chapter 4.2 *Water Quality and Toxicology*).

Resuspension and Discharge of Other Trace Metals

Generally, discharge of trace metals at typical sites should have less than significant impacts. However, suction dredging at known trace metal hot-spots resulting from acid mine drainage and characterized by contaminated sediment (e.g., low pH levels and high metal concentrations in the pore water) would remobilize potentially bioavailable forms of metals and has the potential to increase levels of one or more trace metals in water body reaches such that the water body reach would exceed California Toxics Rule metals criteria by frequency, magnitude, and geographic extent that could result in adverse effects to one or more beneficial uses, relative to baseline conditions. This impact is considered to be potentially significant.

Potential mitigation measures to reduce the impact would necessarily involve identifying known trace metal hot-spots associated with past mining operations (e.g., problematic sites with acid mine drainage) and stating in the Regulations Program that these identified sites are closed to suction dredging. However, because not all locations of such contamination are known, the feasibility with which contaminated sites could be identified at a level of certainty that is sufficient to develop appropriate closure areas or other restrictions for allowable dredging activities is uncertain at this time. As such, this impact is considered significant and unavoidable until such time that a sufficient and feasible mitigation program is developed. For a more complete discussion of this impact, please refer to the discussion under Impact WQ-5 (Chapter 4.2 *Water Quality and Toxicology*).

Effects on Special-Status Passerines Associated with Program Activity

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 may alter behavioral patterns of special-status passerine species.

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, even a small disturbance could be substantial considering the restricted population and/or range of the species in question. Mitigation measures are available to reduce impacts to a less-than-significant level for passerines that may be affected (including avoidance as a Best Management Practice), however, CDFG does not have the jurisdictional authority under this Program to adopt or enforce mitigation for impacts to species not defined as “fish” in the Fish and Game Code. Therefore, impacts to these passerine species are considered significant and unavoidable. For a more complete

discussion of this impact, please refer to the discussion under Impact BIO-WILD-2 (Chapter 4.3 *Biological Resources*).

Cultural Resource Impacts Associated with Program Activity

Effects on Historical Resources

Program activities have the potential to result in a substantial adverse change in the significance of a historical resource due to possible demolition, relocation, or alteration. Similarly, the introduction of increased human activity in around the state's waterways could cause a substantial adverse change to traditional cultural properties. For these reasons, impacts to historical resources and traditional cultural properties resulting from suction dredge mining activities are considered potentially significant. However, as CDFG does not have the jurisdictional authority to mitigate impacts to these resources, impacts to historical resources and traditional cultural properties are therefore considered significant and unavoidable. For a more complete discussion of this impact, please refer to the discussion under Impact CUL-1 (Chapter 4.5 *Cultural Resources*).

Effects on Unique Archaeological Resources

Riverine settings are considered highly sensitive for the existence of significant archaeological resources. Suction dredge mining activities could cause a substantial adverse change to a unique archaeological resource through riverbed suctioning and screening activities that could disturb or destroy cultural materials which may be located just below the surface of the riverbed or along its banks. Impacts to unique archaeological resources resulting from suction dredge mining could also occur through increased human activity in the vicinity of the state's waterways. Such impacts to unique archaeological resources are considered potentially significant. However, CDFG does not have the jurisdictional authority to mitigate impacts to unique archaeological resources. As such, impacts to such resources are therefore considered significant and unavoidable. For a more complete discussion of this impact, please refer to the discussion under Impact CUL-2 (Chapter 4.5 *Cultural Resources*).

Temporary Noise Impacts Associated with Program Activity

Suction dredging activities have potential to generate noise in excess of local noise standards, which would be a significant impact. Although all recreationists using noise-generating equipment, including suction dredge miners, are equally required to abide by local noise ordinances, violations can still occur. Violations can be reported at any time to the local authorities who have the jurisdiction to enforce applicable regulations as appropriate. However, because local noise standards are outside of the scope of the Program to enforce, the impact cannot be discounted. As such, this impact was identified as significant and unavoidable. For a more complete discussion of this impact, please refer to the discussion under Impact NZ-1 (Chapter 4.7 *Noise*).

Cumulative Effects on Wildlife Species and their Habitats

Suction dredging and ancillary activities are likely to co-occur with several bird species. Of greatest concern are the incremental effects of the Proposed Program on species that are very rare and are likely to occur in close proximity to suction dredging activities. As described in Chapter 4.3, *Biological Resources*, suction dredging activities may lead to

significant impacts on several of these species at the individual (Proposed Program) level. The incremental contribution of these impacts is also considered considerable at the cumulative level. This impact is considered significant; no feasible mitigation is available, and as such, the impact is considered significant and unavoidable. For a more complete discussion of this impact, please refer to the discussion under Impact CUM-2 (Chapter 5, *Other Statutory Considerations*).

Cumulative Water Quality Effects of Suction Dredge Discharges

Turbidity/TSS Discharges from Suction Dredging

Although the regulations under the Proposed Program would reduce the potential incremental contribution of the suction dredge discharges to a cumulative impact in impaired waters, sediment discharges would not be entirely avoided. Where such discharges are occurring in water bodies with existing turbidity/TSS impairments, the incremental contribution from suction dredging would be cumulatively considerable. To reduce these effects, potential mitigation could include closures or restrictions on suction dredging in waterbodies impaired for sediment. However, such closures are infeasible as they are not within CDFG's jurisdiction to implement. No other feasible mitigation has been identified within CDFG's jurisdictional authority. As such, this cumulative impact is considered significant and unavoidable. For a more complete discussion of this impact, please refer to the discussion under Impact CUM-6 (Chapter 5, *Other Statutory Considerations*).

Mercury Resuspension and Discharge from Suction Dredging

Although the regulations under the Proposed Program would reduce the potential for flouting and reduce the potential incremental contribution of the suction dredge discharges to the significant cumulative impact, mercury discharges would continue. Such discharges associated with Program activities would make a cumulatively considerable contribution to existing cumulative impacts related to watershed mercury loading, methylmercury formation in downstream areas, and bioaccumulation in aquatic organisms (and associated risks related to human or wildlife consumption). To reduce these effects, potential mitigation could include closing mercury contaminated watersheds, limiting the number of permits in areas impaired for mercury, or further restrictions on nozzle size, number of permits, and hours/days spent dredging. However, such measures are considered infeasible since they are not within CDFG's jurisdiction to implement (they are not considered necessary to avoid deleterious effects to aquatic species). Therefore, this impact would be significant and unavoidable. For a more complete discussion of this impact, please refer to the discussion under Impact CUM-7 (Chapter 5, *Other Statutory Considerations*).

Alternatives Considered

The purpose of the alternatives analysis in an EIR is to describe a range of reasonable alternatives to the Program that could feasibly attain most of the objectives of the Program. Section 15126.6 (b) of the CEQA Guidelines requires that the alternatives reduce or eliminate significant adverse environmental effects of the Proposed Program; such alternatives may be more costly or otherwise impede to some degree the attainment of the Program's objectives. The range of alternatives considered must include those that offer substantial environmental advantages over the Proposed Program and may be feasibly

accomplished in a successful manner considering economic, environmental, social, technological, and legal factors. The analysis evaluates the comparative merits of the alternatives (CEQA Guidelines, § 15126.6[a]).

The following alternatives have been evaluated for their feasibility and their ability to achieve most of the Program objectives while avoiding, reducing, or minimizing significant impacts identified for the Proposed Program:

- No Program Alternative
- 1994 Regulations Alternative
- Water Quality Alternative
- Reduced Intensity Alternative

These alternatives (with the exception of the No Program Alternative) were determined to be feasible or potentially feasible and would generally meet the Program objectives.

No Program Alternative

Under the No Program Alternative, the current prohibitions on instream suction dredging operations would remain in effect and no further permit issuance by CDFG would occur. Essentially, this would entail continuance of the existing environmental conditions of the Program area. By continuing the moratorium on the use of suction dredges in California, all of the adverse environmental impacts related to the Proposed Program would be eliminated.

By having no effect at all on these resources, the No Program Alternative would avoid all the significant and unavoidable effects of the Program and would further reduce or eliminate the effects reported as being less-than-significant. This includes the avoidance of noise and air emissions, recreational conflicts between users, and geomorphic and biologic effects, among others.

1994 Regulations Alternative

Under this alternative, CDFG would resume administering the Program under the 1994 Regulations, which were in place prior to the moratorium. This includes the limits on nozzle size and operational requirements as outlined in those regulations and suction dredge use classifications for waterways unchanged from the 1994 specifications.

Three defining characteristics of this alternative were identified and considered for each environmental resource topic:

- The 1994 regulations did not establish a maximum limit on the number of permits CDFG could issue each year. Though based on historic records, CDFG issues an average of 3,650 permits annually; the actual distribution number can vary significantly. Depending on a number of factors, including the current selling price of gold, it is reasonable to assume that demands for permits under this alternative could reach, or even surpass, these peak levels.

- Similarly, the 1994 regulations were also less specific in defining operational requirements compared to the Proposed Program. This includes fewer equipment restrictions (i.e. larger permissible nozzle size) and less restrictive operational regulations (i.e. no daily hour restrictions, less detail on permissible and prohibited disturbances).
- In addition, the listing of open or closed streams would differ under this alternative than under the Proposed Program. While all of the impacts of the Proposed Program would be eliminated in certain geographic areas (areas proposed to be open under the Proposed Program, but closed under the 1994 regulations), this would be offset to varying degrees by increased impacts in other locations (areas that are proposed to be closed under the Proposed Program but would be open under the 1994 regulations). In terms of reducing impacts of the Proposed Program, this alternative would eliminate all impacts in areas closed under the 1994 regulations but proposed to be open under the Proposed Program.

For most of resource topics, the alternatives analysis reveals that this alternative would have similar or greater impacts overall. The 1994 regulations are not as comprehensive in protecting Program Area resources as those included in the Proposed Program. In particular, this alternative would substantially increase adverse effects on biological resources by not including consideration of up-to-date species listings and information regarding special status species and habitats. Cumulatively, this alternative would make a larger contribution to adverse impacts associated with mercury discharges, greenhouse gas emissions and effects on fish species. The remainder of cumulative impacts would likely be similar as described for the Proposed Program.

Water Quality Alternative

The Water Quality Alternative focuses on reducing the water quality impacts of the Program. In addition to applying the proposed regulations of the Proposed Program, this alternative would include additional considerations for water bodies listed as impaired pursuant to Clean Water Act Section 303(d) for sediment or mercury. These listed areas would be closed to suction dredging in order to avoid further degradation of the water body from dredging activities. The listing of areas closed to dredging would be updated as necessary to remain consistent with the State Water Resources Control Board's determinations, which generally occurs every 2 years.

The elimination of disturbances associated with operations at certain locations (listed water bodies) would decrease adverse effects compared to the Proposed Program for the majority of environmental resource topics. In particular, impacts associated with mercury discharges, sediment resuspension, and biological resources would be reduced under this alternative. Operational effects which are not uniquely related to the locations of areas open or closed to suction dredging (for instance, Hazards and Hazardous Materials, Cultural Resources, Traffic and Transportation, Minerals) would remain similar to the Proposed Program in areas where suction dredging is permitted.

Cumulatively, the elimination of disturbances associated with operations at certain locations would decrease the Program's incremental contribution to cumulative effects on mercury discharges and wildlife species compared to the Proposed Program.

Reduced Intensity Alternative

The Reduced Density Alternative is similar to the Proposed Program but would incorporate a combination of additional restrictions on the total number of permits issued and general methods of operation to reduce the intensity of environmental effects in the Program Area. Under this alternative, a maximum of 1,500 permits would be issued annually by CDFG instead of 4,000 under the Proposed Program. This would translate to a 59% decrease in dredging operations permitted annually compared to the recent historic average. Additional operational requirements would include density limitations, additional equipment restrictions, and restrictions on the duration of daily dredging and total number of days each individual could dredge.

The stipulations of this alternative would decrease potential site disturbances and reduce risks of accidents and competition between recreational uses. As a result, this alternative would lessen adverse effects on nearly every environmental resource area compared to the Proposed Program.

Similarly, incremental contributions to cumulative effects would be decreased compared to the Proposed Program. In particular, cumulative impacts associated with mercury discharges and effects on wildlife species would be reduced under this alternative.

Comparison of Alternatives and the Environmentally Superior Alternative

The No Program Alternative is considered the environmentally superior alternative, because it would eliminate all of the adverse effects of the Proposed Program by continuing the moratorium on suction dredging. However, CEQA requires that when the No Program Alternative is selected as the environmentally superior alternative, another environmentally superior alternative must be chosen from one of the action alternatives. Accordingly, the Reduced Intensity Alternative is considered the environmentally superior action alternative. By limiting the locations open to dredging and placing further restrictions on equipment and the number of permits issued, it would reduce the impacts associated with such operations for each resource category compared to the Proposed Program and other alternatives to the greatest extent.

The other Programmatic alternatives were not selected as the environmentally superior alternative for the following reasons:

- **1994 Regulations Alternative.** This alternative would eliminate all impacts in areas closed under the 1994 regulations but proposed to be open under the Proposed Program. However, this factor was overwhelmed by the substantially greater impacts that would be anticipated to result from the less restrictive operational requirements, as well as the greater disparity in the protection of biological resources. Since the 1994 regulations do not take into consideration the up-to-date special-status species and habitat information, this alternative have much greater potential for adverse impacts on special-status species.
- **Water Quality Alternative.** The avoidance of Program effects in areas listed as impaired for sediment or mercury were not as advantageous in reducing overall Program impacts, as compared to Reduced Intensity Alternative. Several resource areas, including hazards and hazardous materials, cultural resources,

1 and transportation and traffic would have no discernable reduction in impacts
2 compared to the Proposed Program or the Reduced Intensity Alternative.

3 **Summary of Impacts and Levels of Significance**

4 The impacts of the Proposed Program and significance conclusions are discussed in detail in
5 Chapters 4 and 5. Table ES-2 summarizes the impacts, mitigation measures, and levels of
6 significance identified in this document.

TABLE ES-1: COMPARISON OF 1994 AND DRAFT UPDATED REGULATIONS

Topic	1994 Provisions	Draft Updated Provisions	Comments
Permit Requirement	Every suction dredge operator or assistant operator must have a permit issued by CDFG	No change	
Permit Application	No requirements specified	Requires valid identification and contact information; list of up to six locations planned for dredging activities, including locational information and approximate dates; list of all dredge equipment which will be used under the permit	New provision
Number of Permits	No limit	Maximum of 4,000 permits issued each year	New provision
Special Suction Dredge Permits	Requires submittal of a written plan and approval by CDFG	Removed	
Special Approval for Suction Dredging in Lakes and Reservoirs	Written approval from the lake operating agency, Regional Water Quality Control Board, and CDFG required	Requires a valid permit, an on-site inspection, and compliance with the provisions of Fish and Game Code section 1602, subdivision(a)	
Equipment Requirements	<p>Nozzle Restriction: - Inside diameter up to six inches (special areas allowed up to eight inches)</p> <p>Hose Restriction: - Inside diameter of the intake hose less than four inches larger than the permitted nozzle size</p>	<p><u>Nozzle Restriction:</u> - Inside diameter four inches or less</p> <p>- If authorized in writing by CDFG and compliance with the provisions of Fish and Game Code section 1602, subdivision(a) is demonstrated, inside diameter of up to six inches would be allowed</p> <p>- Up to an 8 inch intake nozzle would be permitted at CDFG's discretion in the locations identified in Cal. Code Regs., tit. 14, § 228, subd. (h)(1)(c)</p> <p><u>Hose Restriction:</u> - Inside diameter of intake hose not more than two inches larger than the permitted nozzle size</p>	<p>Reduced nozzle and hose size, unless authorized by CDFG.</p> <p>New requirement for pump intake screening.</p>

TABLE ES-1: COMPARISON OF 1994 AND DRAFT UPDATED PROVISIONS

Page 2 of 5

Topic	1994 Provisions	Draft Updated Provisions	Comments
Restrictions on Methods of Operation		<u>Pump Intake Screening:</u> - woven wire or perforated plant screen openings less than 3/32 inches - profile wire screen openings less than 0.0689 inches with a minimum 27% open area	
	Not included	Only the nozzle size(s), constrictor ring(s) and engine model numbers identified in the permits may be used.	New provision
	Not included	The suction dredge operator's permit number must be affixed to all permitted dredges at all times, in a manner such that the number is clearly visible from the streambank or shoreline. The number must be maintained in such a condition as to be clearly legible.	New provision
	Winching is permitted if: - materials are only moved within the existing water line - no embedded material from stream or river banks is winched - no deflection of water into the bank occurs as a result of winched material - no power-winch activated shovels, buckets, or rakes are used - no woody streamside vegetation is removed or damaged	Winching is permitted if: - materials are not removed from within the existing water line - no winching of embedded material on stream or river banks is conducted - winching does not cause water to deflect onto the bank - no streamside vegetation is removed or damaged Motorized winches and use of other motorized equipment to move boulders, logs, or other objects from within the stream may be authorized following an on-site inspection and compliance with Fish and Game Code section 1602.	Additional Fish and Game Code section 1602 process for motorized winching
	No dredging into the bank of any stream, lake or river	No dredging within 3 feet of the lateral edge of the current water level, including at the edge of instream gravel bars or under any overhanging banks.	Added specificity

TABLE ES-1: COMPARISON OF 1994 AND DRAFT UPDATED PROVISIONS

Page 3 of 5

Topic	1994 Provisions	Draft Updated Provisions	Comments
<i>Restrictions on Methods of Operation, cont'd</i>	No removal or damage to woody riparian vegetation during dredging operations	No removal or damage to streamside vegetation during suction dredging operations	Expanded provision to include greater protection
	No diversion of a stream or river into the bank	No change to this provision	
	No creation of dams or structures that otherwise obstruct fish passage in a stream, river or lake	No construction of a dam or weir, or concentrating flow in a way that reduced the total wetted area of a river or stream or obstruct fish passage unless authorized following an on-site inspection and compliance with Fish and Game Code section 1602 subdivision(a).	Additional Fish and Game Code section 1602 process
	No import of any earthen material into a stream, river, or lake	No change to this provision	
	Not included	Fueling and servicing of dredging equipment must not result in leaks, spills, or release into waters of the state	New provision
	Not included	No fuel, lubricants, or chemicals may be stored within 100 feet of the current water level. If infeasible, a containment system must be used.	New provision
	Boulders and other material may only be moved within the existing water line. No boulders or other material shall be moved outside the water line.	Stream substrate, including gravel, cobble, boulders, and other materials may only be moved within the current water line.	Expanded provision
	Winching of any material embedded in banks of streams or rivers is prohibited.	Displacement of any material embedded on the banks of streams or rivers is prohibited	Expanded provision
	No person shall cut, move, or destabilize instream any anchored, exposed woody debris such as root wads, stumps or logs	Cutting, removal, or disturbance of any type of instream woody debris is prohibited	Expanded provision

TABLE ES-1: COMPARISON OF 1994 AND DRAFT UPDATED PROVISIONS

Page 4 of 5

Topic	1994 Provisions	Draft Updated Provisions	Comments
<i>Restrictions on Methods of Operation, cont'd</i>	Not included	Reasonable care shall be used to avoid dredging silt and clay materials, the disturbance of which would significantly increase in turbidity.	New provision
	Not included	The tailing piles shall be leveled and returned to the pre-mining grade to the extent possible prior to finishing use of the excavation site, or leaving to work another site.	New provision
	Not included	No disturbance of mussel beds. Dredging shall not occur within 30 yards upstream of a mussel bed or within 10 yards laterally or downstream.	New provision
	Not included	No disturbance of actively spawning fish, fish redds, amphibian egg masses, or tadpoles. If these are encountered, dredging operations must cease and relocate	New provision
	Not included	Willful entrainment of finfish, mollusks, or amphibians is prohibited	New provision
	Not included	Use of wheeled or tracked equipment instream for suction dredging is prohibited	New provision
	Not included	All equipment shall be cleaned of mud, oil, grease, debris, and plant and animal material before accessing riparian areas or use in streams or lakes. See Appendix M on Invasive Species. (Zebra, Quagga, and NZ Mud-Snails).	New provision
<i>State Wildlife Areas and Ecological Reserves</i>	Not included	Dredging not permitted in State Wildlife Areas and Ecological Reserves	New provision

TABLE ES-1: COMPARISON OF 1994 AND DRAFT UPDATED PROVISIONS

Page 5 of 5

Topic	1994 Provisions	Draft Updated Provisions	Comments
<i>Compliance with Other Laws</i>	Nothing in any permit issued pursuant to these regulations authorizes the permittee to trespass on any land or property, or relieves the permittee of the responsibility of complying with applicable federal, State, or local laws or ordinances	No change to this provision	
<i>Emergency Closure</i>	CDFG may initiate emergency regulatory action pursuant to Government Code Section 13346.1 to closer any water to suction dredging	No change to this provision	
<i>Location of Activity</i>	See Suction Dredge Use Classifications and Special Regulations (Cal. Code Regs., tit. 14, § 228.5)	See draft regulations (Chapter 2 and Appendix L).	Updated provisions
<i>Timing of Activity</i>	Not included	Active dredging to be conducted only between one half hour after sunrise to sunset.	New provision

TABLE ES-2. SUMMARY OF POTENTIAL IMPACTS AND MITIGATION MEASURES

Page 1 of 5

Potential Impact	Level of Significance	Mitigation Measures
4.1 Hydrology and Geomorphology		
GEO-1: Erosion, Transport, and Deposition of Alluvial Material in Rivers and Streams Resulting in Dredge Potholes, Tailings Piles, and Other Suspension/Depositional Features	LTS	n/a
GEO-2: Destabilization of the Streambanks	LTS	n/a
GEO-3: Destabilization of Channel Bed Forms Such as Riffle and Bars	LTS	n/a
GEO-4: Destabilization of Channel Profile	LTS	n/a
GEO-5: Streamflow Channelization, Diversion, or Obstruction	LTS	n/a
GEO-6: Alteration or Destabilization of Lake Bed or Shoreline	LTS	n/a
4.2 Water Quality and Toxicology		
WQ-1: Effects of Contaminant Discharges from Dredge Site Development and Use	LTS	n/a
WQ-2: Effects of Contaminant Discharges of Oil or Gasoline Used in Suction Dredges	LTS	n/a
WQ-3: Effects of Turbidity/TSS Discharges from Suction Dredging	LTS	n/a
WQ-4: Effects of Mercury Resuspension and Discharge from Suction Dredging	SU	CDFG does not have the jurisdictional authority to mitigate these impacts under this Program.
WQ-5: Effects of Resuspension and Discharge of Other Trace Metals from Suction Dredging	SU	CDFG does not have the jurisdictional authority to mitigate these impacts under this Program.
WQ-6: Effects of Trace Organic Compounds Discharged from Suction Dredging	LTS	n/a
4.3 Biological Resources		
BIO-FISH-1: Direct Effects on Spawning Fish and their Habitat	LTS	n/a
BIO-FISH-2: Direct Entrainment, Displacement or Burial of Eggs, Larvae and Mollusks	LTS	n/a

TABLE ES-2. SUMMARY OF POTENTIAL IMPACTS AND MITIGATION MEASURES

Page 2 of 5

Potential Impact	Level of Significance	Mitigation Measures
BIO-FISH-3: Effects on Early Life Stage Development	LTS	n/a
BIO-FISH-4: Direct Entrainment of Juvenile or Adult Fish in a Suction Dredge	LTS	n/a
BIO-FISH-5: Behavioral Effects on Juvenile or Adults	LTS	n/a
BIO-FISH-6: Effects on Movement/Migration	LTS	n/a
BIO-FISH-7: Effects on the Benthic Community/Prey Base	LTS	n/a
BIO-FISH-8: Creation and Alteration of Pools and Other Thermal Refugia	LTS	n/a
BIO-FISH-9: Destabilization/Removal of Instream Habitat Elements (e.g., Coarse Woody Debris, Boulders, Riffles)	LTS	n/a
BIO-FISH-10: Destabilization of the Streambank	LTS	n/a
BIO-FISH-11: Effects on Habitat and Flow Rates Through Dewatering, Damming, or Diversions	LTS	n/a
BIO-WILD-1: Effects on Special-Status Terrestrial and Non-Riverine Aquatic Invertebrates (e.g., Fairy Shrimp)	LTS	n/a
BIO-WILD-2: Effects on Special-Status Passerines Associated with Riparian Habitat	SU	CDFG does not have the jurisdictional authority to mitigate these impacts under this Program.
BIO-WILD-3: Effects on Special-Status Raptors Associated with Riparian Habitat	LTS	n/a
BIO-WILD-4: Effects on other Special-Status and Non-Listed Terrestrial Wildlife Species	LTS	n/a
BIO-PLANT-1: Effects on Aquatic and Wetland-Associated Special-Status Plant Species and their Habitat	LTS	n/a
BIO-PLANT-2: Effects on Upland Special-Status Plant Species and their Habitat	LTS	n/a
BIO-HAB-1: Effects on Federal and State Protected Wetlands	LTS	n/a

TABLE ES-2. SUMMARY OF POTENTIAL IMPACTS AND MITIGATION MEASURES

Page 3 of 5

Potential Impact	Level of Significance	Mitigation Measures
BIO-HAB-2: A Fundamental Change to the Structure of a Community or Stream Ecosystem, Including Substantial Reductions in Biodiversity or Resiliency to Disturbance	LTS	n/a
BIO-HAB-3: Direct Disturbance to Riparian and Aquatic Habitats, and Other Sensitive Natural Communities	LTS	n/a
BIO-HAB-4: Introduction and/or Dispersal of Aquatic Invasive Species and Pathogens	LTS	n/a
BIO-HAB-5: Introduction and/or Dispersal of Non-Native Invasive (Terrestrial) Plant Species	LTS	n/a
BIO-HAB-6: Effects of Encampments and Other Activities Associated with Suction Dredging	LTS	n/a
4.4 Hazardous Materials		
HAZ-1: Use, Handling, Storage, Transport, Disposal and/or Accidental Release of Oil or Gasoline Used in Suction Dredges	LTS	n/a
HAZ-2: Handling, Storage, Transport and/or Disposal of Toxic Materials Collected by Suction Dredges	LTS	n/a
HAZ-3: Use, Handling, Storage, Transport, Disposal and/or Accidental Release of Materials Used to Process Suction Dredge Concentrates	LTS	n/a
HAZ-4: Human Wastes From Dredge Encampments	LTS	n/a
HAZ-5: Safety Hazards to Dredgers and Others From Suction Dredge Operations, Equipment, and/or Geomorphic Changes	LTS	n/a
HAZ-6: Exacerbation of Wildland Fires	LTS	n/a
HAZ-7: Create Safety Hazards or Releases of Hazardous Materials in Proximity to a School	LTS	n/a
HAZ-8: Exposure to Mercury or Acid Vapor	LTS	n/a

TABLE ES-2. SUMMARY OF POTENTIAL IMPACTS AND MITIGATION MEASURES

Page 4 of 5

Potential Impact	Level of Significance	Mitigation Measures
4.5 Cultural Resources		
CUL-1: Substantial Adverse Changes, When Considered Statewide, in the Significance of Historical Resources	SU	CDFG does not have the jurisdictional authority to mitigate these impacts under this Program.
CUL-2: Substantial Adverse Changes, When Considered Statewide, in the Significance of Unique Archaeological Resources	SU	CDFG does not have the jurisdictional authority to mitigate these impacts under this Program.
CUL-3: Disturbance of Human Remains	LTS	n/a
4.6 Aesthetics		
AES-1: Viewer Response to Suction Dredging Activities at the Suction Dredge Site	LTS	n/a
AES-2: Temporary Degradation of Visual Character from Turbidity Plumes Generated by Suction Dredging	LTS	n/a
AES-3: Alteration of Visual Character or Quality, or Scenic Resources, Following Completion of Suction Dredging Activities	LTS	n/a
AES-4: Alteration of Visual Character or Quality from Upland Activities Related to Suction Dredging	LTS	n/a
4.7 Noise		
NZ-1: Exposure of The Public to Noise Levels in Excess of City or County Standards	SU	CDFG does not have the jurisdictional authority to mitigate these impacts under this Program.
NZ-2: Result in a Temporary Increase in Noise Above Ambient Levels	LTS	n/a
4.8 Recreation		
REC-1: Effects on the Quality of Recreational Resources or Experience	LTS	n/a
REC-2: Changes in Recreational Facility Use or Availability	LTS	n/a

TABLE ES-2. SUMMARY OF POTENTIAL IMPACTS AND MITIGATION MEASURES

Page 5 of 5

Potential Impact	Level of Significance	Mitigation Measures
4.9 Transportation and Traffic		
TR-1: Traffic Hazards Caused by Suction Dredging	LTS	n/a
TR-2: Inadequate Parking Capacity	LTS	n/a
4.10 Mineral Resources		
MIN-1: Availability of, or Access to, Placer Gold Deposits	B	n/a
MIN-2: Compliance with Applicable Federal and State Mining Regulations	NI	n/a
5. Cumulative Impacts		
CUM-1: Effects on Fish Species and Their Habitats	LTS	n/a
CUM-2: Effects on Wildlife Species and Their Habitats	SU	CDFG does not have the jurisdictional authority to mitigate these impacts under this Program.
CUM-3: Effects on Special-Status Plant Species	LTS	n/a
CUM-4: Contributions to Non-Attainment Status	LTS	n/a
CUM-5: Greenhouse Gas Emissions	LTS	n/a
CUM-6: Turbidity/TSS Discharges from Suction Dredging	SU	CDFG does not have the jurisdictional authority to mitigate these impacts under this Program.
CUM-7: Cumulative Impacts of Mercury Resuspension and Discharge from Suction Dredging	SU	CDFG does not have the jurisdictional authority to mitigate these impacts under this Program.
CUM-8: Cumulative Impacts of Resuspension and Discharge of Other Trace Metals From Suction Dredging	LTS	n/a
CUM-9: Cumulative Impacts on Ambient Noise Levels in Suction Dredge Locations	LTS	n/a
CUM-10: Cumulative Impacts on Recreational Facility Use or Availability	LTS	n/a

Definitions

B=Beneficial, LTS=Less-than-Significant, NI=No Impact, SU =Significant and Unavoidable