STAFF REPORT
AND SUBSTITUTE ENVIRONMENTAL DOCUMENTATION
FOR
PROPOSED AMENDMENTS TO THE WATER QUALITY CONTROL PLAN FOR THE LAHONTAN REGION

REVISING THE
REGIONWIDE PESTICIDE WATER QUALITY OBJECTIVE
TO A
REGIONWIDE WASTE DISCHARGE PROHIBITION

California Regional Water Quality Control Board, Lahontan Region
2501 Lake Tahoe Boulevard
South Lake Tahoe, CA 96150

Adopted by California Regional Water Quality Control Board, Lahontan Region
December 7, 2011

Contact Persons:

Daniel Sussman
Environmental Scientist
Telephone: (530) 542-5466
FAX: (530) 544-2271
Email: dsussman@waterboards.ca.gov

Mary Fiore-Wagner
Environmental Scientist
Telephone: (530) 542-5425
FAX: (530) 544-2271
Email: mfwagner@waterboards.ca.gov

PROPOSED BASIN PLAN AMENDMENTS
AND
SUBSTITUTE ENVIRONMENTAL DOCUMENT

TABLE OF CONTENTS

TABLE OF CONTENTS (CONT.)

Executive Summary

The Lahontan Regional Water Quality Control Board (Water Board) may initiate amendments to the Water Quality Control Plan for the Lahontan Region (Basin Plan) at any time in response to issues of concern. The Basin Plan's existing pesticide* water quality objective* prohibits application of pesticides to surface waters (with variance for rotenone use by the Department of Fish Game.) The strict application of the pesticide water quality objective is an issue of concern for the Water Board because the use of aquatic pesticides* is necessary for the protection of public health and safety or the maintenance or restoration of certain beneficial uses (e.g., cold and warm freshwater habitats, drinking water supply, and rare, threatened, or endangered species).

The use of aquatic pesticides, when done for purposes of protecting public health or restoring beneficial uses of water may be justified for certain situations where alternatives to aquatic pesticides may be infeasible or inadequate to achieve effective control of pests*. In such cases, the Water Board may find that any temporary degradation to water quality caused by pesticide use is consistent with the maximum benefit to people of the State, provided that there are no long-term impacts to water quality necessary to support beneficial uses. Regulating aquatic pesticide use by establishing a new waste discharge prohibition with conditional exemptions will provide the Water Board the opportunity to allow certain applications of aquatic pesticides that are consistent with the maximum benefit to the people of the State, while limiting temporal and spatial impacts as much as possible.

The proposed amendment presents an approach that allows the Water Board to protect water quality from the unauthorized use and unintended effects of aquatic pesticides and their residues, while still allowing some lawful discharge of aquatic pesticides where that use is in the public interest.

This Staff Report and associated CEQA analysis concludes that the adoption of the proposed Basin Plan amendment, which will allow the conditional use of aquatic pesticides, may have less-than-significant environmental impacts in many cases, while acknowledging and accepting the potential for significant environmental impacts for some uses of aquatic pesticides where long-term benefits to the people and environment of California outweigh those significant environmental impacts.

Introduction

The Porter-Cologne Water Quality Control Act authorizes the Water Board to adopt and amend a regional water quality control plan. The Water Board is the lead agency for the proposed amendment to the Basin Plan presented in this document. The California Environmental Quality Act (CEQA) authorizes the Secretary for Resources to certify the Water Board's water quality planning process as being "functionally equivalent" to the requirements of CEQA for preparation of environmental documentation, such as an Environmental Impact Report (EIR) or Negative Declaration (Title 14, California Code of

* Defined in Attachment 1 - Definitions

Regulations, Section 15251(g)). In lieu of these documents, the Water Board is required to prepare Substitute Environmental Documentation (SED).

This SED describes the proposed amendment to the Basin Plan and includes the following information, which together fulfill the requirements for preparation of an environmental document.

- Staff Report.
- Proposed Basin Plan Amendment.
- Environmental Checklist that identifies potentially significant adverse environmental impacts and mitigation measures of the Basin Plan amendment as required by California Code of Regulations, title 23, section 3777.
- Alternatives Analysis, CEQA findings and Statement of Overriding Considerations pertaining to the proposed Basin Plan Amendment.

These documents are available on request from the Water Board. They are also available on the Internet at: http://www.waterboards.ca.gov/lahontan.

Proposed Action

The proposed action is the adoption of an amendment to Water Board's Basin Plan which will provide a mechanism for the Water Board to regulate aquatic pesticide applications, where appropriate. This amendment proposes to remove the existing regionwide pesticide water quality objective, which effectively prohibits pesticide application to water, and replace that objective with a regionwide waste discharge prohibition for pesticide application to water along with exemption criteria. The proposed regionwide prohibition would apply to the entire Water Board's jurisdiction, which includes all of California east of the Sierra Nevada crest from the Oregon border to the San Bernardino mountains. There are over 700 lakes and 3,170 miles of streams in the region.

The prohibition will effectively serve the same purpose as the former water quality objective. The Water Board will only allow a prohibition exemption if aquatic pesticide use is proposed for purposes of protecting public health or safety or ecological preservation and only if such projects satisfy specific exemption criteria.

The proposed action also includes making minor revisions to pesticide discussions throughout Chapters 3, 4, and 5 of the Basin Plan that are affected by the proposed prohibition language. These changes include revising the language pertaining to rotenone use that will give the Water Board the discretion to allow the conditional use of rotenone by the United States Fish and Wildlife Service (USFWS). The existing language allows the Water Board to grant conditional exemptions for rotenone applications conducted by the Department of Fish and Game (DFG) only. When conducting fisheries management activities, including those that use rotenone, the USFWS works independently or in cooperation with the DFG. The proposed revisions to the rotenone language allow the USFWS to apply for a conditional exemption when it acts independently to carry out its fisheries management program. The proposed

amendment also requires that USFWS pursue the same recommended future actions for rotenone use as are recommended for DFG.

The proposed action will remove the existing species composition objectives for rotenone projects. When adopted in 1993, the species composition water quality objective for rotenone was based upon the best available, though limited, data. Data provided by DFG from past rotenone projects indicates that the species composition objective is not always achievable after treatment. Additionally, the existing Species Composition objective, which assigns the same recovery time period (one-year following treatment) for different waterbodies, may not be appropriate, and should instead be considered on a project-by-project basis, since the physical, chemical, and biological characteristics which affect the rate of recolonization of aquatic invertebrates vary by waterbody. In a 2002 letter to the State Clearinghouse, David Herbst, an aquatic entomologist and research scientist, illustrated this point in reference to the DFG's draft negative declaration for the Paiute Cutthroat Trout Habitat and Restoration Project in Silver King Creek:

> "Aquatic invertebrate species are likely to have different colonizing abilities and will reoccupy treated streams on varied schedules. In addition, reestablishment of a stable community structure and trophic relationships are likely to differ from stream to stream, over elevation gradients, and to varying extents along the continuum of ecological condition that exist from stream headwaters to lowland rivers. Given such variability, rotenone applications should be evaluated on a case by case basis."

Monitoring data (measures of community structure) collected from rotenone projects conducted in Silver King Creek indicate that full recovery of macroinvertebrates has not occurred after as many as three years after treatment. In a 2004 email addressed to Water Board Executive Officer Harold Singer, Nancy Erman, a University of California, Davis Specialist Emeritus in aquatic invertebrate ecology, diversity, and behavior provides the following comments regarding the 1993 rotenone treatment in Silver King Creek:

> "A plot of the crude BCI [benthic community index] ratings given for aquatic samples in the EA shows that aquatic invertebrates had not recovered to pre – project conditions three years following the last poisoning in 1993...In sum, the data from the 1991- 93 rotenone project and other published literature indicate that the proposed project would violate the Lahontan Basin Plan's requirements that non-target organisms shall recover within one year following stream poisoning with rotenone."

Staff acknowledges there is insufficient data to assign a recovery time-frame for the reestablishment of non-target species potentially affected by the rotenone treatment. Instead, the time period for full recovery of instream invertebrate assemblages may be unknown until more long-term data sets are collected to provide a more robust body of knowledge on which to base recovery times. For the reasons presented here, staff

proposes removing the “species composition” water quality objective, and replacing it with a set of robust control measures, including a rigorous monitoring and reporting program that must be incorporated into a project. Further, the proposed amendment also requires consideration of mitigation measures that may avoid impacts or hasten recovery.

The proposed action presents a more workable and accountable approach toward recovery of non-target species. The proposed language requires the project proponent to implement a rigorous, peer-reviewed monitoring and mitigation program that must be followed until data indicates full-recovery of non-target species. The biological monitoring plan must be based on an appropriate study design, metrics, and performance criteria to evaluate restoration of aquatic life. The indices used in the assessment must be accepted by the Water Board. Biological monitoring will be designed, and conducted as long as needed, to effectively demonstrate that non-target macroinvertebrate populations have been fully restored to pre-project assemblages. These data will help determine realistic timelines for species recovery after treatment with aquatic pesticides. Additionally, the requirement to implement a robust monitoring and reporting program will help develop additional control measures and protective limits that should be incorporated into future fisheries management projects on a project-by-project basis.

The proposed amendment also recommends deleting language regarding recommended future actions for fish hatcheries. The existing language recommends that dischargers advise the Water Board when hatchery operations involve routine and other applications of pesticides. This language is proposed for deletion since all hatchery operations that involve point source discharges to surface waters are regulated under National Pollution Discharge Elimination System (NPDES) permits. Permits for fish hatcheries require dischargers to disclose any application of pesticides or other substances potentially containing toxic substances.

Addition of Waste Discharge Prohibition and Exemption Criteria

Pursuant to Water Code section 13243, Water Boards may prohibit discharges of waste or types of waste either through waste discharge requirements (WDRs, also known as discharge permits) or through waste discharge prohibitions. Prohibitions, which are revised, rescinded, or adopted as necessary, serve as control measures to limit water quality problems by restricting the discharge of waste. For certain circumstances, the Water Board may allow exemptions to prohibitions, when the discharge of waste can be managed and controlled in a way that limits impacts to water quality or where benefits to people of the State outweigh adverse impacts to water quality. Some prohibitions include exemption criteria that, if satisfied, allow the Water Board to grant an exemption to allow the project to proceed. To be eligible for a prohibition exemption, the proposed waste discharge must comply with the exemption criteria.

Purpose of Proposed Amendment

The purpose of replacing the existing pesticide water quality objective is to resolve difficulties and issues that arise in its interpretation. Presently the pesticide water quality objective effectively precludes the discharge of pesticides to water for all purposes, including those necessary for the protection of public health and safety and ecological integrity.

This objective could prevent public agencies from legitimately carrying out their statutory requirements related to controlling vectors, providing safe drinking water, and protecting threatened or endangered species, thus endangering public health and resources. By replacing the pesticide water quality objective with a discharge prohibition coupled with exemption criteria, the Water Board has the ability to define conditions under which projects necessary for public health and safety or ecological preservation could proceed.

The waste discharge prohibition will preserve the ability of the Water Board to protect water quality from pesticide discharges while allowing specific aquatic pesticide projects to be carried out under Water Board regulation and/or oversight. The proposal would replace the water quality objective with a prohibition and exemptions to provide the Water Board with the discretion to approve eligible aquatic pesticide applications, which would be regulated under Waste Discharge Requirements (WDRs) or NPDES permits, either individual or general, or a waiver of WDRs issued by the State or Regional Water Board.

The proposed discharge prohibition, which includes conditional exemptions, will provide a regulatory permitting process for project proponents that propose to apply aquatic pesticides for purposes that are necessary for the protection of human health and the environment. The proposed amendment will be useful for emergency situations that require federal and state agencies to implement rapid response plans that require eradication of a newly detected invasive species as discussed in the California Aquatic Invasive Species Management Plan adopted January 2008 (as amended) or other adopted management plans. Rapid response plans that include eradication typically achieve suppression of invasive species through the use of aquatic pesticides.

Existing Water Quality Objective and Issues with Its Application (Project Need)

The Lahontan Basin Plan contains water quality objectives for pesticides in all surface waters (p. 3-5), and surface waters of the Lake Tahoe Hydrologic Unit (p. 5.1-8):

> "*Pesticide concentrations, individually or collectively, shall not exceed the lowest detectable levels, using the most recent detection procedures available. There shall not be an increase in pesticide concentrations found in bottom sediments. There shall be no detectable increase in bioaccumulation of pesticides in aquatic life.*

> "*Waters designated as MUN* [municipal use] *shall not contain concentrations of pesticides or herbicides in excess of the limiting concentrations* [maximum contaminant levels or "MCLs"] *specified in Table 64444-A of Section 64444 (Organic Chemicals) of Title 22 of the California Code of Regulations.*

Issue 1: Inability to permit necessary projects. Aquatic pesticides are used in a variety of ways that benefit society including for purposes of public health and safety programs, and invasive species* control programs. Literal application of the above-mentioned water quality objective, however, could impede the implementation of projects that are necessary (and may be required by statute) for protecting public health or resources. Examples of such activities include vector control by local agencies, restoration or protection of threatened or endangered species, and control of aquatic weeds or algae to protect navigation, water conveyances, ecological preservation, or public water supplies.

The restrictive language contained in the water quality objective precludes the Water Board from making a discretionary decision to allow such projects. By their nature, aquatic pesticide applications cause detectable concentrations of aquatic pesticides in order to be effective in controlling or eliminating the target organism within the defined treatment area*. This, coupled with the "no detectable amounts" pesticide objective currently in place, makes it virtually impossible for agencies in the Lahontan region to conduct projects and comply with receiving water* limits implementing the Basin Plan water quality objectives above. This presents a difficult situation for certain entities, such as vector control districts, which customarily use pesticides to meet their statutory obligations to protect public health, but are then unable to comply with provisions of the required permit.

Additionally, the existing water quality objective discourages dischargers from seeking coverage under the State Water Resource Control Board (State Water Board) Statewide General NPDES permits for Vector and Aquatic Weed Control (General Permit Nos. CAG990004 and CAG990005 respectively) or future statewide permits. These Statewide General Aquatic Pesticide permits are available for qualified projects that are necessary for protecting public health or resources. Examples of such activities include vector control by use of larvicides or adulticides applied by local public health agencies, aquatic weed and algae control to protect navigation, water conveyances, or public water supplies, and the use of aquatic pesticides for fishery management. The Statewide General Aquatic Pesticide permits require that discharges meet all applicable water quality objectives, effluent limits, and applicable receiving water limitations in the receiving water during and after the project, and in the designated treatment area no more than one-week following the initial pesticide application or upon project completion as determined by the discharger, and accepted by the Water Board, for larvicide applications.

Issue 2: Moving Target. The first paragraph of the objective states that no detectable concentrations of aquatic pesticides are allowed in surface waters. While this "zero

* Defined in Attachment 1 - Definitions

tolerance" objective may seem an effective way to protect water quality and aquatic life from the adverse impacts of pesticide products, difficulties arise when attempting to apply and enforce this objective. The quantifiable value of a "non-detectable" amount of a chemical is dependent on the detection limit of the analytical test. A detection limit is the lowest concentration of a substance that can be reliably measured by the testing method and equipment. These limits may change as analytical chemistry equipment becomes more sophisticated and advances in laboratory methods are made; therefore, what was previously a non-detectable amount of a chemical may be detectable with the application of more recent test procedures. This potential for improvement in analytical chemistry techniques results in the pesticide water quality objective effectively becoming more stringent over time. Legal and regulatory difficulties can occur from this *de facto* tightening of the objective, because it occurs outside of the review and approval process required by state and federal law. Therefore, staff believes that water quality objectives mandating a "zero limit" of a specific constituent are more appropriately expressed as waste discharge prohibitions.

Issue 3: Ambiguous Language. The second paragraph of the objective states that waters designated with the municipal and domestic supply (MUN) beneficial use shall not contain concentrations of pesticides or herbicides in excess of the limiting concentrations shown in Table 64444-A of Section 64444 [Organic Chemicals] of Title 22 of the California Code of Regulations (CCR). This is problematic because the wording contradicts the stringent language of the first paragraph, which mandates "none," while the second paragraph then allows "some." Since the language contained in the second paragraph is duplicated in the regionwide "Chemical Constituents" water quality objective, removal of this paragraph will resolve this contradiction while preserving the limits for MUN-designated waters contained in the referenced table in Title 22 of the CCR.

The protection of water quality for projects that may be allowed under the proposed amendment is further discussed in the antidegradation analysis.

Circumstances Eligible for Exemption from the Prohibition

Various regulations legally compel entities (e.g., environmental health departments, water purveyors) to control vectors and invasive weeds for purposes of protecting public health and safety, managing water resources, and preserving ecological integrity. Under such circumstances, an exemption to the pesticide waste discharge prohibition is justified provided the lowering of existing water quality will not unreasonably affect beneficial uses and the Water Board finds that such a change is consistent with the maximum benefit to the people of the State; for example, in order to protect public health and resources in the long-term. Regulating aquatic pesticide use through prohibitions and conditional exemptions provides the Water Board with the opportunity to ensure pesticide applications have limited temporal and spatial impacts to the maximum extent feasible.
The Water Board acknowledges that some entities currently use aquatic pesticides to meet their statutory responsibilities. Several of these uses are known to the Water

Board, and it is suspected that additional pesticide applications also occur without Water Board knowledge. Entities that apply for coverage of discharges of aquatic pesticides under Statewide General Aquatic Pesticide permits are technically in violation of the pesticide water quality objective because the Basin Plan does not provide a mechanism for approved use. By providing a way to permit aquatic pesticide discharges, it is expected that all entities compelled to use aquatic pesticides will apply for the proposed exemption and seek permit coverage. As a result, the Water Board will have more oversight of these discharges occurring within our jurisdiction, further limiting the potential adverse effects of aquatic pesticide use.

The circumstances presented below provide examples of situations that may be eligible for an exemption to the pesticide waste discharge prohibition if the specified exemption criteria in the proposed basin plan amendment is met. Other circumstances, not presented here, may also be eligible for an exemption to the prohibition provided that the pesticide application is proposed for protecting public health and safety or ecological preservation and all applicable criteria are satisfied.

Public Health and Safety – Vector Control. California Health and Safety Code (HSC section 2000), provides the broad statutory authority for mosquito abatement and vector control districts to conduct effective programs for the abatement and control of mosquitoes and their vectors. Vectors such as mosquitoes can transmit pathogenic diseases (such as West Nile Virus, yellow fever and malaria), causing significant impacts to the public in general, affecting outdoor workers, recreation and tourism, as well as domestic animals and livestock. Therefore, the California Legislature created broad statutory authority for mosquito abatement and vector control districts to conduct effective programs for the surveillance, prevention, abatement, and control of mosquitoes and other vectors. These programs may require the use of aquatic pesticides to fulfill their statutory mandates.

The exemption criteria contained within the proposed pesticide waste discharge prohibition allows the Water Board to grant an exemption to the prohibition, so entities mandated to protect public health may apply aquatic pesticides to surface water for purposes of vector control.

Public Health and Safety – Public Services. Statutory requirements under the California Health and Safety Code (HSC section 116270) declare that every citizen of California has the right to pure and safe drinking water. Often water purveyors must treat supply waters to remove toxic and/or nuisance contaminants. Nuisance substances including invasive aquatic plants and algae can negatively impact drinking water supplies by imparting offensive tastes and odors. During the summer of 2006, the Los Angeles Department of Water and Power (LADWP) had to rely on a series of treatments in the Los Angeles Aqueduct to control a seasonal algae bloom throughout the Owens Valley that was imparting a musty odor in the water supply. Besides aesthetic problems, the presence of algae blooms, including blooms of cyanobacteria (blue-green algae) can produce harmful toxins that may taint drinking and recreational water supplies. To control algal blooms in Lake Palmdale, the Palmdale Water District

has applied copper sulfate to treat the blue-green algae affecting the reservoir that stores source water from the California Aqueduct and Littlerock Reservoir. Water purveyors, including LADWP and Palmdale Water District, have applied, and continue to apply, aquatic algacides and herbicides to treat surface water supplies in efforts to control harmful algal blooms that pose health risks and nuisance algae that create taste and odor problems.

The exemption criteria contained within the proposed pesticide waste discharge prohibition allows the Water Board to grant an exemption to the prohibition, so water utilities mandated to provide safe and pure drinking water may apply aquatic pesticides to surface water for purposes of protecting public health and safety.

Public Health and Safety - Protection of Water Conveyance and Navigation. California Department of Food and Agriculture (CDFA) is the lead agency authorized to detect and control/eradicate aquatic weeds, including hydrilla; the agency's authority is derived from CDFA Code sections 4068 and 7271. The CDFA performs the eradication process in cooperation with federal, state, county, and city agencies.

Hydrilla is a fast growing aquatic weed capable of forming dense stands of long stems that can (1) reduce water storage capacity of lakes, ponds, and reservoirs, (2) choke hydroelectric generators and block water control structures, and (3) impede navigation. Hydrilla can also degrade fish and wildlife habitat and endanger public health by reducing water flow, which in turn can produce mosquito breeding habitat.

The CDFA is committed to an "early detection and rapid response" strategy for the eradication of hydrilla. Rapid response involves the timely implementation of the most effective eradication methods appropriate to a given site and situation. In some cases the most effective eradication measures for "rapid response" or later management of hydrilla may include the application of herbicides to surface waters for purposes of weed control.

The exemption criteria contained within the proposed pesticide waste discharge prohibition allows the Water Board to grant an exemption to the prohibition, so entities mandated to control hydrilla, and other invasive weeds may apply herbicides to surface water.

Ecological Preservation - Aquatic Invasive Species (AIS). Aquatic invasive species can negatively affect beneficial uses of the state's waters by reducing the numbers and diversity of desirable plants, causing loss of fish, insect, and wildlife habitat, interfering with recreation, and impacting aesthetics. Additionally, AIS can impact drainage for agriculture, commercial and sport fishing, drinking water quality, hydropower generation, irrigation, navigation, and water conservation and transport.

Several federal, state, and regional regulations and programs are in place to limit the introduction, and manage and control the spread, of AIS. The primary federal authorities for managing AIS are contained in the Nonindigenous Aquatic Nuisance Prevention and Control Act, the National Invasive Species Act, the Lacey Act, the Plant Pest Act, the

Federal Noxious Weed Act, and the Endangered Species Act. To address the threat posed to California habitats by new AIS introductions, implementation of a rapid response plan to eradicate a new species may be necessary. In some situations, the use of aquatic pesticides may be recommended as the most effective control measure to eradicate the AIS of concern in a rapid response plan. Where it can be demonstrated that pesticide use is the only feasible alternative to control AIS, impacts within the treatment area may be justified in order to protect public resources and preserve ecological integrity in the long-term.

The proposed pesticide waste discharge prohibitions allows the Water Board to grant an exemption to the prohibition, so authorized federal, state, or local agencies may apply aquatic pesticides to surface waters for purposes of controlling AIS.

Ecological Preservation - Endangered Species Recovery. When species are listed as endangered or threatened, the Endangered Species Act allows the U.S. Fish and Wildlife Service (USFWS) to implement all methods and procedures which are necessary to restore and preserve endangered and threatened species*.
In some situations, potentially harmful management actions (e.g., the use of aquatic pesticides) may be the most effective control measure to kill species that are harming endangered or threatened species that are in danger of significant population loss or extinction. Pesticide application may also be necessary to conserve the ecosystems threatened and endangered species depend upon.

The proposed pesticide waste discharge prohibitions allows the Water Board to grant an exemption to the prohibition, so authorized federal and state agencies may apply aquatic pesticides to surface waters for purposes of ecological preservation and endangered species recovery.

Ecological Preservation – Fisheries Management. The Department of Fish and Game (DFG) has been vested by the people of the State with the responsibility to carry out a variety of fishery management activities. The DFG, the USFWS, and other public agencies occasionally have cause to eliminate competitors, predators and otherwise undesirable fish populations as part of their fishery management programs. Such management programs may include applying aquatic pesticides to restore threatened or endangered species, control fish diseases, removing predatory exotic species, and eliminate prohibited species.

In order to accomplish critical fish management activities, the DFG and the USFWS may find that the use of piscicides (fish toxicants such as rotenone) is the only effective and practical method to eliminate existing fish populations in designated areas; this practice provides conditions for propagation of healthy, desirable fish and/or fish prey species, such as certain amphibians.

The exemption language contained within the proposed pesticide waste discharge prohibitions allows the Water Board to grant an exemption to the prohibition, so

* Defined in Attachment 1 - Definitions

authorized federal and state agencies may apply piscicides to surface waters for purposes of fisheries management.

Eligible Dischargers

Any entity involved in the application of aquatic pesticides that results in a discharge of pesticide residuals to waters of the United States or waters of the State, and must meet either or both of the following two criteria to be considered eligible to apply for an exemption to the proposed pesticide waste discharge prohibition:

1. The entity has control over the financing for or the decision to perform pesticide applications that result in discharges, including the ability to modify those decisions; or

2. The entity has day-to-day control of or performs activities that are necessary to ensure compliance with this discharge prohibition, its exemption criteria, and appropriate permit.

Conditions of Exemption

In order to qualify for an exemption, pesticide applications must be consistent with all permits issued by the State of California and label instructions approved by the United States Environmental Protection Agency (USEPA) under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). An exemption may be granted for applications of properly registered and applied aquatic pesticides.

"Aquatic pesticides" are pesticides specifically formulated for use in water to control aquatic animal or plant pests. An aquatic pesticide is any substance (including biological agents) applied in, on, or over the waters of the State or in such a way as to enter those waters for the purpose of inhibiting the growth or controlling the existence of any plant or animal in those waters. Aquatic pesticides used to eradicate adult mosquitoes (adulticides) are typically sprayed over and near water. Since there is a high potential that spray applications of adulticides may result in a discharge of residual aquatic pesticides to surface waters, the Statewide General Permit for Vector Control regulates adulticides and adulticides are considered aquatic pesticides for purposes of this amendment.

By definition, aquatic pesticides must be applied at concentrations that are toxic to certain aquatic organisms. Therefore, for certain aquatic pesticides, target concentrations needed for effective pest control within the treatment area may temporarily exceed narrative or numeric water quality objectives contained in the Basin Plan. Specific water quality objectives that may be exceeded include:

- Toxicity
- Chemical Constituents (in surface and ground waters)
- Oil and Grease
- Dissolved Oxygen
- Floating Materials
- Settable Materials
- Suspended Materials
- Nondegradation of Aquatic Communities and Populations

When an exemption to the prohibition on pesticide use in water is granted, pesticides are discharged into water and additional water quality objectives, such as those listed above, may be exceeded. Consequently, the Water Board may also need to grant the pesticide discharger constituent-specific exemptions to waste discharge prohibitions 1 and 2 (Basin Plan, Chapter 4.1-1). These prohibitions prohibit the discharge of waste which causes violation of basin plan narrative and numeric objectives, respectively. Exemptions to these prohibitions would be short-term or seasonal and would only apply to the treatment area during the treatment event* (or project duration or length*). The intent is to limit exceedances of water quality objectives to the shortest possible time needed for project effectiveness. Upon project completion, water quality would be restored within the treatment area and suitable to protect beneficial uses.

See Attachment 2 for specific language that is proposed for inclusion in the Basin Plan.

Consistency with Other Pesticide Regulations

Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Clean Water Act. The USEPA regulates the use of pesticides, including aquatic pesticides, under the authority of FIFRA. According to FIFRA, USEPA has sole jurisdiction of pesticide label language, which must be approved by USEPA before the product can be sold in this country. As part of the labeling process, USEPA evaluates data submitted by registrants to ensure that a product used according to label instructions will cause no adverse impact on non-target organisms that cannot be reduced or mitigated with protective measures or use restrictions. Registrants are required to submit data on the effects of pesticides on target pests as well as effects on non-target pests. Data on non-target effects include plant effects, fish and wildlife hazards, impacts on endangered species, effects on the environment, environmental fate, breakdown products, leachability, and persistence. However, FIFRA is not necessarily as protective of water quality as the Clean Water Act (CWA). USEPA also has the authority to suspend or

* Defined in Attachment 1 - Definitions

cancel the registration of a pesticide if subsequent information shows that continued use would pose unreasonable risks.

The CWA is the principal federal law for regulating discharges of pollutants into the waters of the United States. It gives USEPA the authority to implement pollution control programs, and contains requirements to set water quality standards for contaminants in surface waters of the United States. Under the CWA it is unlawful for any person to discharge any pollutant from a point source into navigable waters unless an NPDES permit is obtained. Aquatic pesticides discharged into surface waters may constitute pollutants within the meaning of the CWA even if the discharge is in compliance with the registration requirements of FIFRA thus requiring coverage under a valid NPDES permit.

State and Local Pesticide Regulation. After USEPA registers a pesticide, including aquatic pesticides, under FIFRA, states can register pesticides under specific, and more restrictive, state pesticide registration laws. The State Board and nine Regional Water Boards do not directly regulate pesticide use in California; rather, the California Department of Pesticide Regulation (DPR) is the lead agency responsible for the registration and regulation of pesticides. The California Food and Agricultural Code authorizes DPR and the County Agricultural Commissioners (CACs) to regulate the sale, storage, handling, and use of pesticides. The use of pesticides must comply with the FIFRA pesticide label instructions and any Use Permits issued by the CACs. To reduce contamination of people or the environment, use permits often require specific use practices to prevent misapplication and drift.

The application of aquatic pesticides by vector control agencies is regulated by a cooperative agreement among the California Department of Public Health (DPH), DPR, CACs and the vector control agencies. Vector control agencies are not directly regulated by DPR; rather, they are licensed by DPH.

One of the purposes of these pesticide regulatory programs is to protect the environment by prohibiting, regulating, or ensuring proper use of pesticides. The Water Code provides that the State Board and nine Regional Water Boards are the principal state agencies with primary responsibility for the coordination and control of activities related to water quality including regulating wastes generated from the use of aquatic pesticides that involve a discharge to water.

Because DPR and the State and Regional Water Boards have complementary authorities, the DPR and State Water Board signed a Management Agency Agreement (MAA) that describes how they will work together to accomplish their mandates. The MAA recognizes that the State and Water Boards have the authority and responsibility to develop, implement, and enforce programs to achieve water quality objectives, including the promulgation of waste discharge prohibitions and issuance of waste discharge requirements. The MAA also acknowledges that DPR is the lead agency for pesticide regulation in California. As the provisions of this Basin Plan amendment do not preclude the lawful use of aquatic pesticides in California, they do not conflict with the

mandates of state or local agencies regarding pesticide regulation, or the MAA between the State Water Board and DPR.

Statewide General NPDES Permits for Aquatic Pesticides. In May 2004, the State Water Board renewed two Statewide General Aquatic Pesticide permits to address the discharge of pollutants associated with specific aquatic pesticides used for aquatic weed and vector control. The 2004 vector control permit only pertained to use of larvicides. The State Water Board's newly adopted Vector Control Permit (General Permit No. CAG990004) regulates both the discharge of adulticides and larvicides to surface waters.

The Statewide General Aquatic Pesticides Permits were adopted in part, to streamline the permitting of repeated applications of aquatic pesticides that are necessary for public health and safety. All permits cover discharges from the use of specific active ingredients* that are used in California.

The Statewide General Aquatic Pesticides Permits contain narrative effluent limits that require implementation of best management practices (BMPs) which include compliance with pesticide label requirements and other measures to minimize the areal extent and duration of impacts caused by the discharge of aquatic pesticides in the treatment area. The areal extent of the treatment area is defined by the discharger, and this area will vary from project to project. Receiving water limitations apply to the "treatment area" (defined by the discharger) during the project. The Statewide General Aquatic Pesticides Permits also require Dischargers to develop and implement a monitoring and reporting program to assess the effectiveness of BMPs and compliance with receiving water limitations.

Permit conditions require that receiving water limitations be met outside the treatment area at all times during and after the project and in the treatment area upon project completion. Receiving waters must meet all applicable receiving water limitations which include water quality objectives (narrative and numeric). The Statewide Aquatic Pesticides General Permits prescribe numeric objectives for waters affected by pesticide discharges at the most restrictive limit for the protection of human and/or aquatic health and include Maximum Contaminant Levels (MCLs), criteria in the California Toxic Rule* (CTR) for priority pollutants* (e.g., acrolein and copper), and criteria developed for the protection of freshwater and saltwater aquatic life.

The Statewide General Permit for Vector Control contains receiving water monitoring triggers for priority pollutants. The monitoring triggers will be used to assess compliance with the narrative toxicity receiving water limitations contained in Water Boards' Basin Plans, which specifically prevents toxic substances from being present, individually or in combination, in concentrations that produce detrimental physiological response in human, plant, animal, or aquatic life (i.e, no toxics in toxic amounts).

* Defined in Attachment 1 - Definitions

The Statewide General Permit for aquatic weed control allows dischargers to apply for and receive a short-term, seasonal exception from meeting the CTR priority pollutant criteria for copper and acrolein. (Copper-based aquatic pesticides are commonly used to control algal and aquatic plant growth, and acrolein-based aquatic pesticides are used to control submerged and floating vegetation.) Entities that qualify for an exception must submit specific information in accordance with the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (SIP) (2005). Approval of the exception from meeting the CTR priority pollutant criteria for copper and/or acrolein (and other aquatic pesticides containing priority pollutants) is a discretionary action requiring compliance with CEQA. The Water Board may have to act as the lead CEQA agency in situations where the project is proposed by a private corporation or association not subject to CEQA, which includes entities that do not qualify under the definition of "public agency*" or "local agency*" according to title 14 CCR section 15368 and 15379 respectively. Dischargers must comply with specific numeric limits for 2,4-D, acrolein, copper, diquat, endothall, fluridone, glyphosate, imazapyr, sodium carbonate peroxyhydrate and triclopyr-based aquatic pesticides. As additional aquatic pesticides are registered by DPR, they may be added to the permit along with numeric limits.

"Receiving waters" are defined in the permits as anywhere outside the treatment area at any time and anywhere inside the treatment area after project completion. The Statewide Aquatic Pesticide permits do not require the duration of the treatment event to be discretely outlined in the permits, but the temporal extent of the pesticide application is intended to be short-term. The Statewide General Aquatic Pesticide Permits require post-treatment sampling of water to begin not more than a week from the time of aquatic pesticide application (or after project completion as determined by the Discharger, and accepted by the Water Board, for time-release aquatic pesticides). The goal of the post-treatment monitoring is to determine compliance with the receiving water limitations which indicates whether water quality is sufficient to maintain beneficial uses. (Any individual or general NPDES permits or WDR issued by the Water Board will contain monitoring requirements that specify the discharger begin post-treatment sampling no more than a week after the aquatic pesticide application or after project completion as determined by the Discharger, and accepted by the Water Board, for time-release aquatic pesticides).

Prohibition Exemptions and Coverage under the Statewide General Aquatic Pesticides NPDES Permits for Vector and Aquatic Weed Control Before receiving permit coverage, vector and weed control project proponents in the Lahontan Region must first be granted an exemption to the pesticide prohibition (once this Basin Plan Amendment is approved and in effect). If a prohibition exemption is granted, the Discharger must apply for an individual NPDES permit or seek coverage under the applicable Statewide General Aquatic Pesticides Permits.

The Statewide General Aquatic Pesticide Permits are available for qualified projects that are necessary (and often required by statute) for protecting public health and safety and

* Defined in Attachment 1 - Definitions

resources. Examples of such activities include vector control by use of larvicides or adulticides applied by local public health agencies and aquatic weed and algae control to protect navigation, water conveyances, or public water supplies.

Vector Control - Exemptions to the proposed pesticide prohibition will be considered for vector control projects that propose to apply a larvicide or adulticide products covered under the Statewide General Permit for Vector Control. (Refer to the Statewide Permit for Vector Control (General Permit No. CAG990004 as adopted and amended), Attachment E for a list of permitted adulticide products and Attachment F for a list of permitted larvicide products covered for vector control applications.)

Public Service – Exemptions to the proposed pesticide prohibition will be considered for aquatic weed and algae control proposed for purposes of protecting navigation, water conveyances, public water supplies, agricultural irrigation water distribution system, and for purposes of maintaining capacity in flood control channels provided the proposed project includes the use of an aquatic herbicide covered under the most current Statewide General NPDES Permit for the discharge of aquatic pesticides for aquatic weed control (General Permit No. CAG990005 as adopted and amended), page 2, no. 12 for a list of aquatic pesticides covered for weed and algae control.)

Considerations of Antidegradation When Removing a Water Quality Objective

This amendment proposes to remove a water quality objective that limits pesticide levels to non-detect and replace it with a prohibition on pesticide use, and provides an exemption to the prohibition for certain pesticide uses. According to the State Water Board's Administrative Procedures Manual (Chapter 8, "Water Quality Planning"), when proposing to remove a water quality objective, the staff report "must clearly demonstrate nondegradation, and the continued protection of existing and potential beneficial uses." This demonstration of nondegradation can be made by showing that the basin plan amendment meets the requirements of the federal and state antidegradation policies (40 CFR 131.12); State Water Resources Control Boards' "Statement of Policy with respect to Maintaining High Quality of Water in California (Resolution No. 68-16).

This document analyzes proposed changes to the Basin Plan. The use of rotenone in the Region is not analyzed for consistency with the antidegradation policies because the existing Basin Plan allows for the use of rotenone in the Region's waterbodies through the use of a variance to the existing water quality objective for pesticides. In the antidegradation analyses, the Water Board considers the amendment changes that provide a process to authorize the use of aquatic pesticides beyond rotenone. Such authorization is consistent both with a continuation of existing conditions (e.g., use of pesticides by mosquito abatement districts), and with the primary objective of the Clean Water Act, which is to "restore and maintain the chemical, physical, and biological integrity of our Nation's waters." (33 U.S. C. 1251(a).)

The antidegradation policies are intended to protect water quality and beneficial uses from potential impacts of a planned waste discharge. Lowering of water quality may be

allowed only if the Water Board finds that it is in the best interest to people of the State, and that the lowering of water quality will not unreasonably affect the designated beneficial uses. Similarly, the federal Antidegradation Policy (40 CFR 131.12) requires that water quality be preserved unless its lowering is necessary to accommodate important economic or social development, and in allowing such lowering of water quality, the State shall assure water quality adequate to protect existing uses fully.

Projects that may be allowed under this Basin Plan Amendment include those implemented for purposes of vector control, public health and safety, preservation of ecological integrity, fisheries management, and projects implemented for these purposes in response to emergency situations. Applying aquatic pesticides to surface waters for these purposes will result in a temporary lowering of existing high water quality within the treatment area and the receiving water.

The Basin Plan Amendment presents a process that provides the Water Board discretion to allow certain pesticide use within the Lahontan Region. Project proponents must satisfy exemption criteria before the Water Board considers granting an exemption to allow pesticide use. The exemption criteria represent requirements and measures intended to minimize the spatial and temporal lowering of water quality that may result from the use of aquatic pesticides. The criteria ensure that aquatic pesticide applications comply with antidegradation policies in that water quality objectives that are protective of beneficial uses are maintained within receiving waters affected by the pesticide application. This can be achieved in a number of ways including implementing an appropriate suite of control measures and adhering to pesticide labels for appropriate dosages, use conditions, and application measures.

Any lowering of water quality associated with vector control or emergency projects is consistent with antidegradation policies considering these projects are implemented to accommodate social or economic development and in the best interest to people of the state. Vector control projects protect public health and ensure a safe and viable community; a benefit that outweighs any temporary lowering of water quality that occurs during the pesticide application. Aquatic pesticide applications that are proposed in response to emergencies (as defined by Public Resources Code 21060.3 and CEQA Guidelines section 15359) also accommodate social or economic development and are in the best interest of people of the state because these actions are taken to “prevent or mitigate loss of, or damage to life, health, property, or essential public services.”

Other projects which may be allowed under this amendment are not, by their nature, necessarily consistent with state and federal antidegradation policies. As such, when applying for a prohibition exemption the burden of proof will be on the project proponent to demonstrate, by satisfying specific exemption criteria, subject to approval by the Water Board, that the project, of its own merits, is consistent with antidegradation policies. The Water Board must make its own independent determination, using its own judgement of the proponent’s argument.

In a memorandum from State Water Board's Chief Counsel, William Attwater, to the Regional Water Board Executive Officers, Mr. Attwater indicates the State has some flexibility in determining what kinds of impacts constitute "important economic or social development" that may justify changes in water quality. (Memorandum from W. Attwater, Chief Counsel to Regional Board Executive Officers, October 7, 1987, p. 13.) Environmental protection is offered as one example that may constitute important social development, justifying a change in water quality even if no other social or economic benefits to the community are demonstrated. Activities to support existing development, water development, and water conservation projects are also considered acceptable examples of actions that accommodate social and economic development and justify a a lowering of water quality.

For aquatic pesticide applications to be effective, a dosage that is lethal to the target species must be applied, which may have impacts to other beneficial uses. One could argue that because the Ninth and Sixth Circuit courts have found that the portion of a chemical pesticide intentionally applied to water is not the discharge of a pollutant[1] under the Clean Water Act (CWA), it is not necessary to conduct an antidegradtion analysis for the treatment area during the treatment event. And, as part of the antidegradation analysis, it is only necessary to consider the residue of the pesticide, which is subject to the CWA National Pollutant Discharge Elimination System's permitting requirements.

Staff acknowledges that the Courts' interpretation that application of a pesticide product to water for an intended purpose does not constitute a discharge of waste may not, in itself, forego the need for an antidegradation analysis. Therefore, out of an abundance of caution, staff will analyze the temporary lowering of water quality that occurs within the treatment area during the treatment event as part of its analysis of the Basin Plan's consistency with state and federal antidegradation policies.

During a scheduled aquatic pesticide treatment event, a lethal concentration of chemicals is intentionally applied to water to control pests. This application of aquatic pesticides will result in a spatially localized and short-term lowering of water quality that may temporarily, but not unreasonably, affect beneficial uses within the treatment area. During a pesticide application, staff acknowledges that it is not feasible to fully protect the cold freshwater habitat within the portion of the waterbody being treated (i.e., the treatment zone). The aquatic pesticide application will temporarily preclude the continued beneficial use (e.g., cold freshwater habitat) supported within the treatment area, but this impact is limited with respect to the entire waterbody. During the treatment event, the lowering of water quality and the subsequent effect to beneficial uses are confined to the treatment area. Precluding the use of aquatic pesticide due to short-term and transient impacts within the treatment area would be non-sensible considering the

[1] At the time an aquatic pesticide is applied to the water to perform a particular useful purpose, the pesticide is not considered a discharge of a chemical waste, and therefore not a pollutant within the meaning of section 502(6) of the CWA. As both the Ninth and Sixth Circuit courts have recognized, that portion of a chemical pesticide intentionally applied to water is not the discharge of a pollutant under the CWA. Fairhurst v. Hagener, 422 F.3d 1146, The National Cotton Council of America v. U.S EPA, 553 F.3d 927, 936.

holistic benefit to the waterbody and the important public interests that are served by such aquatic pesticide use.

At all times during and after the pesticide application, beneficial uses and the water quality to support those uses will be maintained within other portions of the waterbody outside of the delineated treatment area (i.e., receiving waters). And, upon completion of the treatment event, the water quality within the treatment area is restored to pre-project conditions capable of supporting beneficial uses.

It is expected that there may be short-term impacts from the pesticide applications allowed under this amendment, but regulatory oversight and the implementation of best management practices will help minimize or avoid reductions of water quality. Overall, the treatment of aquatic pests will promote the long-term maintenance and restoration of beneficial uses and the waterbody as a whole. To this end, temporary reductions in water quality are acceptable, since the intent of the pesticide applications considered under this amendment is to restore and maintain the biological integrity of the waterbody, which is consistent with the spirit and goals of the CWA.

The removal of the water quality objective proposed by this amendment is coupled with a new conditional waste discharge prohibition, which provides a similar level of protection against the effects of pesticide applications to the region's waters. The pesticide applications that may be permitted under the Amendment must comply with the antidegradation policies. The above mentioned statements demonstrate that the lowering of water quality that results within the treatment area during the treatment event provide reasonable protection of beneficial uses and meet the requirements of the federal and state antidegradation policies. Otherwise, prohibiting aquatic pesticide applications because of potential short-term impacts may place an impractical limitation on many vital activities such as those needed for a healthy community or environment.

The antidegradation analysis that follows demonstrates that reductions in existing high quality water in the receiving water during and after the pesticide application and within the treatment area upon completion of the treatment event are consistent with the requirements of the state and federal antidegradation requirements.

Compliance is achieved by meeting the specific criteria set out in the proposed Amendment. The exemption criteria ensure that an aquatic pesticide application does not adversely affect beneficial uses of water by requiring that all applicable water quality objectives are achieved. The exemption criteria that a proponent is required to meet to receive an exemption ensure that any project approved is consistent with the provisions of federal and state antidegradation regulations as discussed below.

Federal Antidegradation Policy. The federal regulations covering antidegradation must be addressed whenever a Water Board proposes to relax a water quality objective. [40 CFR 131.12]

The proposed prohibition language is similar to the former water quality objective, which did not allow pesticide concentrations in detectable amounts, in that it prohibits the discharge of aquatic pesticides to surface waters. The proposed amendment, however, may be considered less restrictive than the existing water quality objective because it provides the Water Board with the discretion to approve and regulate eligible aquatic pesticide applications that meet specific criteria set forth in the proposed Basin Plan.

The federal antidegradation requirements allow lowering of water quality under some circumstances where a state finds that it is "necessary to accommodate important economic or social development"; and provided the water quality is adequate to protect existing uses fully.

Therefore, where the federal antidegradation policy applies, it does not absolutely prohibit any changes in water quality. The federal antidegradation regulations establish a three-part test for determining when adverse changes in surface water quality may be permitted. The antidegradation analysis below provides justification to demonstrate that the proposed amendment complies with the federal antidegradation regulations which divide waters into three tiers of water quality. For a project to comply with the antidegradation policy, the antidegradation policy analysis must find that each water tier is provided its appropriate level of protection. Tier One protects existing uses and provides the absolute floor of water quality in all waters of the United States. Tier Two applies to waters where the quality of the water is of better quality than necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water. Tier Three provides for the protection of water quality in waters designated as Outstanding National Resource Waters (ONRWs) which are regarded as the highest quality waters of the United States.

Three-Part Test

Tier One – Any action which would lower water quality below that necessary to maintain and protect existing uses is prohibited.

Discussion. The use of aquatic pesticides is a balancing act that requires allowing some short-term impairment of water quality in order to manage resources and "restore and maintain the chemical, physical, and biological integrity of our Nation's waters." In some cases, failure to control harmful organisms has significant potential to impair beneficial uses of water (such as municipal and irrigation supply, navigation, and aquatic life), or to cause harm to public health by failing to control vectors such as mosquitoes or rodents.

Aquatic pesticide projects that may be allowed with this amendment must satisfy exemption criteria and comply with subsequent permit requirements. Complying with these provisions ensures that the existing uses and the water quality to protect those uses are maintained for the long-term. The project proponent shall work with Water Board staff to develop limits for each aquatic pesticide project, which will be incorporated as exemption conditions in the Water Board's resolution granting the prohibition exemption and/ or requirements of the appropriate permit. Permit

requirements and/or conditions of the exemption may include, but not be limited to, discharge limits for application rates, receiving water limitations for pesticide residue levels, limits on the temporal and spatial extent of the treatment area, and recovery time expectations and biotic metrics to assess restoration of affected non-target species.

Water quality degradation associated with aquatic pesticide discharges is not unreasonable, since degradation is only temporary and will not cause water quality to permanently fall below that necessary to maintain and protect existing uses, provided projects incorporate control measures to limit the area and duration of impacts caused by the discharge of aquatic pesticides.

Several exemption criteria, such as those listed below, directly address the tier one analysis and ensure that water quality following the pesticide treatment is sufficient to maintain the existing beneficial uses.

- Aquatic pesticide applications must incorporate best management practices to control impacts to beneficial uses and limit these impacts to the shortest time possible for project success.
- The treatment area shall be limited to the smallest areal and depth extent that can reasonably achieve effective treatment.
- The lowest effective rates of pesticide application shall be used.
- The pesticide use must be consistent with FIFRA pesticide label instructions and any Use Permits issued by the County Agricultural Commissioner.
- A satisfactory monitoring program must be implemented to establish impacts and verify restoration.
- Compliance with all applicable water quality objectives and receiving water limits and effluent limitations must be achieved in the treatment area upon completion of the treatment event.
- Compliance with all applicable water quality objectives and receiving water limits and effluent limitations must be maintained in the receiving water during, and must be achieved within the treatment area upon completion of, the treatment event.

These criteria, along with project specific permit requirements issued by the Water Board, will ensure that any lowering of water quality is limited to the shortest possible time, providing for the protection of beneficial uses to the extent reasonable. The Water Board will examine the exemption request for justification of the proposed treatment duration and an explanation as to how the proponent can be sure that the proposed duration is the shortest necessary to achieve treatment results. In addition to limiting the treatment duration, to minimize impacts to the waterbody, the treatment area will be designed to be limited in depth and areal extent to the minimal area necessary to achieve treatment results. Outside the treatment area the receiving water must achieve applicable water quality objectives, receiving water limitations, and effluent limits at all times. Though the pesticide application may cause a lowering of water quality outside the treatment area, levels of active ingredients are below effective concentrations which allows for the protection of beneficial uses within the receiving water. Additionally, after completion of the treatment event, waters located within the treatment area must also

achieve applicable water quality objectives, receiving water limitations, and effluent limits. Compliance with this criterion assures the water quality within the treatment area following treatment is sufficient to support beneficial uses, including those uses that existed before implementation of the aquatic pesticide project. Staff recognizes that after the treatment event the water quality to support beneficial uses may exist in the treatment area; though, it may take an extended period of time to re-establish some of the beneficial uses adversely impacted by the pesticide application.

The justification provided above demonstrates that the proposed amendment complies with Tier One of the federal antidegradation analysis.

Tier Two – These are water bodies where existing water quality conditions are better than necessary to protect beneficial uses. Reductions in water quality in high-quality waters may be justified as necessary to accommodate important social and economic development, and provided existing beneficial uses are protected.

Discussion. Aquatic pesticide application projects are in the public interest when projects are conducted for public health or public resource protection purposes, and in a manner that protects public safety, insures the long-term protection of the environment, and does not have long-term impacts on beneficial uses of water. The State Water Board, the California Legislature, and the USEPA have recognized the need for these types of projects, and found that their implementation is consistent with the maximum benefit to the public.

For example, in the State Water Board's Statewide General NPDES Permit for Aquatic Weed Control (General Permit No. CAG990005), findings were made that aquatic pesticides projects (under certain circumstances) were needed in order to protect beneficial uses such as municipal and agricultural water supply, recreation, and human health, and that these projects are in the best interest of the people of the State (General NPDES Permit for Aquatic Weed Control, Finding 24, page 4). Similarly, the California Legislature has found that "the protection of Californians against the discomforts and economic effects of vector-borne diseases, which is often done with aquatic pesticides, is an essential public service that is vital to public health, safety and welfare" (Health & Safety Code section 2001(b)(3); Senate Bill 1588 (2002)).

The USEPA has recognized the importance of certain aquatic pesticide applications to the public interest. A relevant example is found in a May 1, 2001 letter from Alexis Strauss, USEPA, Director - Water Division, to Edward C. Anton, Acting Executive Director, State Water Resources Control Board, which grants approval of the “Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California” (also known as the “SIP”). The SIP, which implements priority pollutant criteria* for toxic pollutants contained in the California Toxics Rule* contains provisions for "categorical exceptions" for resource or pest management, pest eradication, or fishery management activities, which are the same types of projects that may qualify for the waste discharge prohibition exemption proposed here. The EPA granted approval of the categorical exception approach, stating:

> "We recognize the important public interest and statutory impetus associated with the listed resource management measures, and the potential need to use these measures to protect certain beneficial uses. We also recognize the inherent tension created, from time to time, by the need to carry out such measures in the absence of feasible alternatives and the measures' potential impact on aspects of the beneficial uses. The categorical exception is a reasonable exercise of the state's regulatory discretion to address these interests and needs while protecting beneficial uses of the receiving water as a whole."

In its May 1, 2001 letter to the State Water Board, the USEPA recognizes that any lowering of water quality is temporary and is restored upon project completion at which point it is again protective of beneficial uses. The USEPA states:

> "We interpret the exception as in essence allowing for the allocation of a temporal zone of impact – determinable through mechanisms such as the mandatory discharge and receiving water monitoring program – within which there may be a temporary exceedance of a specific criterion but the resulting impact is of such transient nature as to allow for full restoration of the pre-project water quality and thus protection of beneficial uses upon project completion. Careful compliance with the restrictions attached to the exception, coupled with successful implementation of properly designed monitoring and restoration programs, should work to limit the application of this exception to appropriate situations and protect the overall beneficial uses of the receiving water."

Because of the similarities between the provisions of the SIP's section 5.3 exceptions and the waste discharge prohibition exemption criteria proposed here, and the EPA's endorsement of this approach for public interest balancing, we therefore consider proposed temporary lowering of water quality as allowed by the proposed amendment consistent with Tier Two of the antidegradation analysis.

Also consistent with the antidegradation policy is the requirement that exemptions to the pesticide prohibition be considered only if the project applicant can ensure compliance with all applicable water quality objectives (narrative and numeric) and receiving water limitations. Water quality objectives (numeric and narrative) are established in water quality control plans for the reasonable protection of beneficial uses or the prevention of nuisance[*] within a specific area. These water quality objectives are then imposed on a project proponent as receiving water limits in permits. In this way, the permit requires that a treatment event does not result in an exceedance of water quality objectives in the receiving water. The receiving water includes anywhere outside of the treatment area at any time, and anywhere inside the treatment area after completion of the treatment event. Requiring aquatic pesticide applications to comply with these limitations provides assurance that beneficial uses will be protected outside the treatment area.

[*] Defined in Attachment 1 - Definitions

Compliance with water quality objectives and receiving water limitations will be determined through post-treatment monitoring. Compliance monitoring will commence no more than one week after the application event. The water quality in post-treatment samples is required to comply with water quality objectives and receiving water limits and assures that any lowering of water quality is short-term, temporary in nature, and of sufficient quality to maintain existing beneficial uses.

The time frame in which a project must achieve compliance with water quality objectives will vary by project depending on the type of pesticide proposed, site specific conditions, and temporal extent of treatment event. Reasonable compliance times will be assigned based on the duration of the treatment event and will be included in the Water Board's resolution to grant exemption. The duration of the treatment event will be determined by whether the pesticide in use is a fast-acting chemical or a slow-release systemic compound and by considering site-specific conditions (flow, target species, water chemistry). For fast-acting pesticides it may be possible to achieve compliance with water quality objectives within a week of the application event. Fast-acting pesticides degrade quickly, usually within a week of application, and so are applied at high concentrations to be effective before degrading. Slower acting pesticides are effective at lower concentrations less toxic to non-target species, but degrade more slowly, and require a longer treatment event before complying with water quality objectives.

Tier Three - New or increased discharges to waters designated as Outstanding National Resource Waters (ONRWs) that would result in lower water quality in the ONRW are prohibited. The only exception to this prohibition, as discussed in the preamble to the Water Quality Standards Regulation, is for activities that result in short-term and temporary changes in the water quality of the ONRW. EPA guidance has not defined temporary and short-term specifically, but views these terms as limiting water quality degradation for weeks or months, not years. The intent is to limit degradation to the shortest possible time.

Discussion. Under the federal antidegradation policy [40 CFR 131.12 (a)(3)], ONRWs are provided the highest level of protection. The regulation requires that water quality be maintained and protected, though States are given flexibility to permit limited activities that temporarily lower the ONRW's existing high quality water. Such activities must not permanently degrade water quality or result in water quality lower than that necessary to protect the existing uses in the ONRW. Additionally, all practical means of minimizing water quality degradation shall be implemented so any lowering of water quality is limited to the shortest time feasible.

In the Lahontan region, Lake Tahoe and Mono Lake are designated as ONRWs. As noted in the Tier One discussion, the use of aquatic pesticides for resource protection and pest management will be allowed only if the conditions of the exemption criteria are met. These conditions spell out the requirements and steps needed to ensure that lowering of water quality is limited to the shortest time feasible. If a pesticide application project is proposed in an ONRW, like Lake Tahoe, the project must satisfy all applicable project criteria, which include compliance with water quality objectives specific to the affected waterbody. Permits that are issued to regulate the aquatic pesticide discharges

will incorporate numeric receiving water limitations where State or USEPA-based water quality objectives or criteria are available.

Additionally, the exemption criteria require implementation of control measures to limit the spatial extent and the temporal impact of the discharge. Compliance with these limitations assures that water quality outside of the limited treatment area is always sufficient to support beneficial uses.

State Antidegradation Policy. EPA's water quality standards regulation requires each state to adopt an "antidegradation policy" to address the CWA's mandate to maintain the chemical, physical and biological integrity of the nation's waters. To fulfill this requirement, in 1968, the State Water Board adopted California's Nondegradation Policy referred to as the “Statement of Policy with Respect to Maintaining High Quality of Water in California (Resolution 68-16). This policy is referred to as the "Nondegradation Objective" on page 3-2 of the Basin Plan, and applies to all waters of the Lahontan region including surface waters, ground waters, and wetlands. Both state and federal nondegradation regulations provide for protection of water quality that is better than that needed to protect all existing beneficial uses. (The state’s nondegradation objective also provides protection for anticipated beneficial uses.) The existing high quality shall be maintained unless specific findings can be made to allow degradation.

Resolution 68-16 establishes a two-step process to determine if a discharge complies with the state’s antidegradation policy.

Step One: Whenever the existing quality of water is better than the quality established in policies, such existing high quality will be maintained until it has been demonstrated to the State that any change:

- will be consistent with maximum benefit to the people of the State;
- will not unreasonably affect present and anticipated beneficial use of such water, and;
- will not result in water quality less than that prescribed in the policies.

Step Two: Any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that:

- a pollution* or nuisance will not occur, and;
- the highest water quality consistent with maximum benefit to people of the State will be maintained.

Discussion: Discharges of aquatic pesticides that are associated with protection of public health and safety and preservation of ecological integrity can result in a

* Defined in Attachment 1 - Definitions

temporary lowering of the existing high quality of a water body. These discharges may only be allowed if the proposed application of aquatic pesticides is consistent with antidegradation requirements. One required finding is that the public interest will be served by the aquatic pesticide application. Projects carried out to maintain essential public services (e.g., vector control, protection and conveyance of drinking water supplies, flood prevention through maintenance of flood control channels) are consistent with the maximum benefit to people of California and justify a temporary increase in pollutant level which results in temporary water quality degradation. A potential temporary lowering of water quality is also justified for projects that involve fisheries management, endangered species control, and aquatic invasive species control where it can be shown that implementation of these projects protects environmental resources of important economic and social value consistent with the maximum benefit to people of the State (e.g., protection of valuable fisheries resources and aquatic habitat).

The discharges of aquatic pesticides allowed under this amendment are not expected to unreasonably affect present and anticipated beneficial uses of the treated waterbody. All aquatic pesticide uses allowed under this amendment must comply with label instructions. As verified by USEPA and DPR, aquatic pesticides used in accordance with label requirements should not cause harm or adverse effect to non-target organisms that cannot be reduced or mitigated with protective measures or use restrictions. Adverse effects include any unusual or unexpected impacts to organisms not otherwise described on the pesticide product label or otherwise not expected to be present.

Once the amendment is in effect, the Water Board will only permit aquatic pesticide discharges that incorporate control measures to limit water quality degradation and impacts to beneficial uses to the shortest time and within the smallest area necessary for project success.

Water Board staff recognizes that projects may result in a temporary lowering of water quality. California Water Code, section 13241 recognizes that it is possible for the quality of water to be degraded to some degree without unreasonably affecting beneficial uses. Water affected by the pesticide discharge will likely be of lesser quality than exceptional pre-project background water quality. However, projects allowed under the exemption provisions of this amendment must comply with water quality objectives. If water quality objectives are not exceeded, then a condition of pollution has not occurred. While the presence of aquatic pesticides may temporarily degrade water quality, control measures that are built into the project (to satisfy exemption criteria and permit requirements) will limit the temporal and spatial extent of water quality degradation. As such, water quality is maintained at levels that comply with water quality objectives and at levels capable of supporting beneficial uses.

During a treatment event, adverse effects to non-target organisms within the treatment area may result from the lowering of water quality caused by the application of aquatic pesticides. However, the lowering of water quality that results from the application of pesticides to water is expected to be short-term. Lowering of water quality is so

temporary in nature that it allows for full restoration to pre-project water quality and thus protection of beneficial uses upon project completion. Post-project monitoring, commenced within a week of the pesticide application will verify that water quality returns to levels capable of supporting pre-project beneficial uses. The time frame in which a project must achieve compliance with water quality objectives will vary by project depending on the type of pesticide proposed, site specific conditions, and temporal extent of treatment event. Reasonable compliance times will be assigned based on the duration of the treatment event and will be included in the Water Board's resolution to grant exemption. The duration of the treatment event will be determined by whether the pesticide in use is a fast-acting chemical or a slow-release systemic compound and by considering site-specific conditions (flow, target species, water chemistry).

If aquatic pesticide applications have the potential to impact non-target species, appropriate monitoring to assess the recovery of non-target species will be required until evidence can demonstrate that the aquatic communities and populations have been restored to pre-project conditions. This assessment must include, at a minimum, evidence documenting that non-target species populations have recovered to their pre-project assemblages. For projects that involve control of aquatic invasive species, it may not be appropriate to demonstrate that non-target species be restored to pre-project conditions, because invasive species had likely already limited the diversity and abundance of native species[*] in the infested area. In such cases, the project proponent shall consider using a reference site to gauge restoration of non-target species to desired conditions or establish project goals, objectives, and performance criteria, and a schedule for repopulation of non-target species.

Aquatic pesticide applications covered under this amendment must not result in water quality in receiving waters outside the treatment zone being less than that prescribed in the policies. The stringent exemption criteria require that the pollutant concentrations in the discharge shall not cause, have a reasonable potential to cause, or contribute to an excursion above any applicable federal water quality criterion established by USEPA pursuant to CWA section 303 or any water quality objective adopted by the Water Board or the State Water Board, including prohibitions of discharge to receiving waters. Where more than one objective is applicable, the stricter objective shall apply. These criteria and objectives are established to provide for the reasonable protection of beneficial uses or the prevention of nuisance within a specific area. Therefore, requiring that pesticide discharges comply with these protective limits is intended to protect beneficial uses and prevent conditions of pollution or nuisance.

If a proposed aquatic pesticide project receives an exemption to the pesticide prohibition, the discharge will be regulated by an individual or general NPDES permit or WDR or waiver issued by the State or Regional Water Board. The exemption criteria set forth in the proposed amendment must apply throughout the project duration and therefore the project proponent must include all measures and methods to meet exemption criteria in the project description and permit application or Notice of Intent to ensure protection of beneficial uses. Additionally, the permit will include provisions for

[*] Defined in Attachment 1 - Definitions

enforcement should the discharger violate permit conditions, which include a requirement to comply with project descriptions and other application submittals.

It is believed that the above federal and state antidegradation assessments would support findings that the temporary degradation of water quality associated with this amendment is permissible. The effects on water quality associated with discharges of aquatic pesticides subject to this amendment will be mitigated through compliance with FIFRA label requirements, permit conditions, application of control measures, and compliance monitoring. The above evaluation and discussion would seem to support a finding that the anticipated changes in water quality associated with the amendment are consistent with the maximum benefit to people of the State and will not unreasonably affect present and anticipated beneficial uses of such water.

Project proponents proposing the use of aquatic pesticides will need to conduct project-specific assessments. When filing an exemption request, project proponents must supply project-specific information that will allow the Water Board to determine whether the project is consistent with the provisions of federal and state antidegradation regulations.

This request for information is waived for vector control projects, which provide long-term benefits to the people of California by protecting public health. The State Board, in its March 1, 2011 Response to Comments on the Statewide Vector Control Permit, describes how vector control activities, with adequate control measures, are consistent with antidegradation requirements:

> "The Draft or Permit incorporates requirements that are protective of the broad range of beneficial uses set forth in Basin Plans throughout the State. The requirements prescribed in the Statewide Vector Control Permit constitutes the best control available consistent with the purposes of the pesticide application in order to ensure that pollution or nuisance will not occur. The permit conditions also ensure maintenance of the highest water quality consistent with maximum benefit to the people of the State. The nature of aquatic pesticides is to be toxic in order to protect beneficial uses such as human health or long-term viability of native aquatic life… The discharge of pollutants is expected to be temporary and must meet Receiving Water Monitoring Triggers and limitations, which are protective of beneficial uses of the receiving water. In addition, the Draft or Permit also requires toxicity monitoring to determine if residues, including active ingredients, inert ingredients[2], and degradation byproducts, in any combination, from pesticide applications cause or add toxicity to the receiving water. If the residues cause or add toxicity, the discharger will be required to perform an iterative process of evaluating its application methods, BMPs, or alternatives to the pesticide until the pesticide residues no longer cause or add toxicity to the receiving water. Compliance with receiving water limitations and other permit requirements will ensure that degradation of the State's waters will be temporary and that the waters will be returned to pre-application conditions after project

[2] Defined in Attachment 1 - Definitions

completion. The degradation to water quality would only be temporary and for the best interest of the people of the State."

Based on the State Board's antidegradation analysis and the criteria that would be established by this amendment, the Water Board finds control projects conducted in the Lahontan region for purposes of protecting public health and in accordance with the exemption criteria set forth in the Basin Plan Amendment are consistent with state and federal antidegradation policies. (Also refer to the sections titled "Discussion" above, which further describe how projects subject to this amendment comply with both state and federal antidegradation requirements.)

Environmental Impact Evaluation

Pursuant to CCR title 23, section 3777, any standard, rule, regulation, or plan proposed for board approval or adoption must be accompanied by the following:

- Environmental Checklist
- Written report containing a brief description of the proposed activity or project, reasonable alternatives to the proposed activity, and mitigation measures to minimize any significant adverse environmental impacts of the proposed activity.

The proposed BPA will not by itself require specific project implementation. While the Water Board will not directly undertake any actions that could physically change the environment, adoption of the proposed Basin Plan amendment could indirectly result in the future application of aquatic pesticides to surface waters within the Lahontan Region. The Water Board is required by the CEQA to analyze impacts and mitigation measures that are a reasonably foreseeable consequence of adopting the BPA. Changes that are speculative in nature are difficult to analyze and, under CEQA, do not require environmental review.

Economic Analysis

When proposing to adopt a rule or regulation requiring the installation of pollution control equipment or a performance standard or treatment requirement, CEQA requires Regional Water Boards to take into account a reasonable range of factors, including economics (Public Resources Code section 21159 [a][1]). The consideration of economic factors is not required for this action. The proposed action involves adoption of a Basin Plan prohibition rather than the establishment of a new rule requiring the installation of pollution control equipment, or a performance standard or treatment requirement that necessitates a method of compliance.

The following section presents the alternatives considered: the Preferred Alternative (i.e., this proposed amendment to the Basin Plan), the Numeric Objective, and a No Action Alternative. This section also includes the environmental checklist and analysis for the proposed Basin Plan amendment, and includes the required analyses mentioned above. The explanation following the checklist provides details concerning the environmental impact assessment. The CEQA analysis below concludes that the

adoption of the proposed Basin Plan amendment may have significant environmental impacts.

Alternatives Considered to satisfy requirements of CCR title 23, section 3777

Preferred Alternative. The Preferred Alternative is the adoption of the Basin Plan amendments incorporating the changes discussed in this report. The Basin Plan amendments are needed to specifically provide for regulatory authority and functions of the Lahontan Water Board to authorize aquatic pesticide use, and to protect the beneficial uses of water in the Lahontan Region**.**

Chemical Specific Numeric Water Quality Alternative. This alternative would create water quality objectives for selected aquatic pesticides. Aquatic pesticides would be chosen based on Water Board understanding of the Lahontan Region, the probable needs for pesticide use, the pesticide's toxicity and acceptance by the Lahontan Region's applicator community. Possible targets for which aquatic pesticides would be chosen include aquatic vegetation (algae, vascular plants), fish, and mosquitoes. One advantage to pursuing development of numeric water quality objectives for pesticides is the transparency the approach would provide for the Water Board and for the public. Transparency would be achieved by identifying which aquatic pesticides in specific concentrations, and which project types would be allowed for each pesticide in the Lahontan Region.

A benefit of the numeric objectives alternative is that it would lessen some potential impacts to the environment. The numeric objectives could be based on USEPA Ambient Water Quality Criteria, if available. If USEPA Ambient Water Quality Criteria are unavailable, USEPA's Office of Pesticides' Ecotoxicity Database could be used to develop numeric objectives. For constituents that do not have Ambient Water Quality Criteria, the numeric objective will be based on one-tenth of the lowest 50 percent Lethal Concentration (LC50) obtained from USEPA's Office of Pesticides' Ecotoxicity Database for the protection of the most sensitive freshwater aquatic species.

Under this alternative there would not be a prohibition on application of aquatic pesticides to water. Pesticide application to water would be regulated through individual or general Waste Discharge Requirements or NPDES permits. The use of other chemicals may or may not be allowed, subject to meeting the existing narrative and numeric water quality objectives set forth in the Basin Plan.

The Water Board elected against the Chemical Specific Objectives Alternative after considering a number of drawbacks to its approach. The aquatic pesticides with specific water quality objectives would be given preference by the user community and there would be no incentive to use new or existing chemicals not listed in the Basin Plan if they are later found to have less potential for adverse effects on the environment than those included in this alternative. This preference is for two reasons. First, project proponents will want to avoid the burden inherent in processing a basin plan amendment for the use of a chemical with no water quality objective. Second, it is likely

that the Water Board would need to issue an individual NPDES permit or amend an existing permit, further delaying the proposed project.

The Lahontan Region and its waters are the most diverse in California. It contains the highest and lowest points in the lower forty-eight states, and includes regions that receive some of the most and some of the least precipitation in the country. Correspondingly, the region has freshwater alpine lakes and streams, saline water bodies, and desert washes. The variability of environmental conditions in the Lahontan Region results in a wide difference among waters in physical-chemical properties (e.g., salinity, temperature, selenium, dissolved oxygen), a situation that would make it difficult to establish consistent pesticide water quality objectives that are protective of beneficial uses. Some aquatic life species may be affected by a minimal amount of pesticide or adjuvant*, while some types of aquatic life may hardly be affected by a relatively high concentration chemical application. A particular numeric objective may be too low for efficacy in some waters and too high for protection of beneficial uses in other waters. To pursue a Chemical Specific Numeric Water Quality Alternative and develop numeric objectives for specific chemicals that would address these concerns would be prohibitive in terms of Water Board resources consumed.

No Action Alternative. The No Action alternative means that the Lahontan Water Board would not adopt the Basin Plan amendments. The Lahontan Water Board would not have discretionary authority to allow legitimate applications of aquatic pesticides. Such uses include vector control, protection of public health and safety, and control of aquatic invasive species. Additionally, under the No Action alternative, the existing water quality objective remains. The existing objective, as discussed above, is ambiguous and does not provide regulatory predictability due to advances in detection technologies.

* Defined in Attachment 1 - Definitions

Environmental Checklist

I. Background

Project Title: Basin Plan Amendment for Regionwide Pesticide Prohibition with Conditional Exemption Criteria

Contact Persons: Daniel Sussman or Mary Fiore-Wagner

Project Description: The project is adoption by the Lahontan Regional Water Quality Control Board (Water Board) of an amendment to the Water Quality Control Plan for the Lahontan Region (Basin Plan) that will replace the existing regionwide water quality objective for pesticides by establishing a regionwide prohibition for pesticide application to water. The proposed amendment allows the Water Board to grant exemptions to the proposed pesticide prohibition provided specific project conditions and criteria are satisfied on a project-by-project basis.

II. Environmental Impacts

The environmental factors checked below could be potentially affected by this project. See the checklist on the following pages for more details.

☐	Aesthetics	☐	Agriculture and Forestry Resources	☐	Air Quality
☒	Biological Resources	☐	Cultural Resources	☐	Geology/Soils
☒	Greenhouse Gas Emissions	☒	Hazards & Hazardous Materials	☒	Hydrology/Water Quality
☐	Land Use/Planning	☐	Mineral Resources	☐	Noise
☐	Population/Housing	☐	Public Services	☐	Recreation
☐	Transportation/Traffic	☐	Utilities/Service Systems	☒	Mandatory Findings of Significance

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
1. AESTHETICS. Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☒	☐	☐
d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

a-d) The project will not affect scenic vistas, as no viewsheds will be impeded. No scenic resources will be damaged. Use of aquatic pesticides may improve scenic resources by removing the presence of nuisance species from aesthetically pleasing waters. Pesticide applications could temporarily create unsightly areas of dead vegetation, floating dead aquatic organisms, etc. Mitigation measures will require removal and disposal of dead plants and animals from water to the extent feasible. No light sources or reflective structures will be constructed as a result of this project.

2. AGRICULTURAL AND FOREST RESOURCES. In determining whether impacts to agricultural resources are significant environmental impacts, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping & Monitoring Program of the California Resources Agency, to non-agricultural uses?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)) or timberland (as defined by Public Resources Code section 4526)?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

a-e) Adoption of this action will not result in the loss of farmland or forest lands or the conversion of farmland to non-agricultural use or forest land to non forest use. The action will not affect existing zoning for agriculture or forest land or timberland.

3. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☐	☒
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☒	☐	☐
d) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	☐	☐	☐	☒
e) Create objectionable odors affecting a substantial number of people?	☐	☒	☐	☐

a-b) Use of aquatic pesticides will not conflict with or obstruct implementation of any air quality plan, or violate any air quality standard, as the use of aquatic pesticides will not result in an increase of aerial emissions.

c) There is a possibility that some aquatic pesticides will volatilize. The proposed amendment (project) would regulate adulticide use for vector control, in which aquatic pesticides are sprayed in the air to kill adult mosquitoes. This method is covered by the project language because of the potential for pesticide drift to water, and for consistency with the Statewide General NPDES Permit for Vector Control which covers adulticides. Additionally, criteria allowing use of adulticide requires that the least amount of pesticide to be effective is used, that the public is notified, and that pesticide applicators are regulated by the Department of Public Health, which imposes further regulation.

d) The project is not expected to result in a considerable net increase of criteria pollutants, such as ozone, PM_{10} and $PM_{2.5}$. Most criteria pollutants are related to combustion engines and fugitive dust, rather than those with a potential origin of aquatic pesticides. A review of the ten air quality districts in the Lahontan Region, as identified on the California Air Resources Board website, indicate that no criteria air pollutants potentially related to aquatic pesticide use are in non attainment.

e) For some projects, application of terrestrial or aquatic pesticides may produce objectionable odors associated with chemical residues in the immediate vicinity of the project site. Such odors will typically be very short lived, lasting until the chemicals have sufficiently dissipated. Applicants are required to notify the potentially affected public prior to application of aquatic pesticides.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

Decaying aquatic organisms, including dead plant material from aquatic herbicide treatments, or dead fish from rotenone treatments, could also create offensive odors if not cleaned up. The amendment includes the requirement that appropriate measures be taken to remove and dispose of dead biomass to the extent feasible.

4. BIOLOGICAL RESOURCES. Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the DFG or USFWS?	☒	☐	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the DFG or USFWS?	☒	☐	☐	☐
c) Have a substantial adverse effect on federally-protected wetlands as defined by Section 404 of the federal Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, *etc.*) through direct removal, filling, hydrological interruption or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

a) One of the purposes of the project is to provide a tool, aquatic pesticides, to DFG and USFWS to restore and preserve threatened and endangered species. Aquatic pesticides can be used to eliminate competing species and allow threatened and endangered species to be restored. In this way, the project may actually increase the ability for the DFG and USFWS to pursue mandates to de-list threatened and endangered species.

The amendment requires that project specific monitoring programs evaluate the magnitude and extent of potential impacts to any present threatened or endangered species, as well as post project recovery of any non-target species. The evaluation criteria included in the amendment requires that alternatives to pesticide use be thoroughly evaluated and justification provided if alternatives are not to be implemented. The evaluation of alternatives to chemical control must be included in the proposal and accepted by the Water Board.

Pesticide use should be carefully considered whenever there is significant potential to impact candidate, sensitive, or special status species, whenever toxicity to non-target organisms is anticipated or where desirable animal species cannot be expected to

recover. The proposed amendment requires projects to include pre-project biological monitoring to identify potentially affected threatened and endangered species, and to minimize potential for adverse effects to identified organisms. Additionally, it is probable that were special status species identified, DFG would require the project to comply with the provisions of California Fish and Game Code Sections 2050-2098, which specify under which circumstances incidental take is permitted. Where a significant impact is likely to occur and is unavoidable, a statement of overriding consideration in the CEQA document for the site-specific project would be required.

b) The purpose of applying aquatic pesticides is for the long-term maintenance and protection of beneficial uses (e.g. drinking water supply, freshwater habitat, restoration and preservation of habitat that supports threatened and endangered species) and public health. However, by definition aquatic pesticides are toxic to target species. Application of aquatic pesticides can adversely affect wetlands if applied in or near wetlands at concentrations sufficient to injure or kill wetland plants or animals. Application of aquatic pesticides to wetlands for vector control may have a substantial adverse effect on sensitive natural communities, such as wetlands, by killing non target larvae or by eliminating a food source for organisms that feed on mosquito larvae. The review and evaluation of pesticide proposals takes into account the type of aquatic pesticides, concentrations, and application methods to be used; the species present, their sensitivity to the aquatic pesticides proposed, and their potential to recover. Requests for exemption may be denied if the project proponent fails to demonstrate how the project will meet exemption criteria, or if the Water Board decides that granting an exemption is not in the best interest of the people. If a project specific CEQA analysis identifies a potentially significant impact, then specific mitigation measures must be identified by the project proponent, accepted by the Water Board, and implemented as appropriate. For non-vector control related activities, alternatives to chemical control measures must be evaluated and used by the project proponent instead of aquatic pesticides whenever feasible. The evaluation of alternatives to chemical control must be included in the proposal and accepted by the Water Board.

c) The adoption of this action will not result in any filling or dredging of federal waters.

d) In some cases, the objective of pesticide use may be to eliminate or control undesirable animals (for example, use of the fish toxicant rotenone by the California Department of Fish and Game for fishery management purposes). Even when the target organism is not an animal, depending on the pesticide used there may be some toxicity to non-target organisms. Use of aquatic herbicides may, however, actually improve habitat for native fish by eliminating invasive species that compete with the native fish or by eliminating invasive aquatic plants that provide shelter for invasive fish and out-compete native, habitat providing, flora. Following treatment and after dissipation of pesticide residues*, it is expected that non-target organisms have an opportunity to replace organisms that have been removed.

* Defined in Attachment 1 - Definitions

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

e) The project will not conflict with local policies or ordinance protecting wildlife resources.

f) The Lahontan Region contains parts of the El Dorado County and Placer County. Both the El Dorado County Integrated Natural Resources Management Plan, and the Placer County Natural Community Conservation Plan apply to areas of these counties on the west slope of the Sierras, outside of the Lahontan Region. The Lahontan Region contains several Habitat Conservation Plans (HCPs) as determined by reviewing the USFWS Ecosystem Conservation Online System's Regional Summary Report on March 9, 2011. The HCPs address the following species: desert tortoise (*Gopherus agassizii*) threatened, and the southwestern willow flycatcher (*Empidonax traillii extimus*), endangered. The proposed amendment does not conflict with HCPs covering these animals. A review of the recovery plans for the desert tortoise and southwestern willow flycatcher indicates that the proposed amendment is not in conflict with the HCPs in the Lahontan Region.

5. CULTURAL RESOURCES. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource as defined in §15064.5?	☐	☐	☐	☒
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒

a-d) The use of aquatic herbicides should not adversely affect any archeological sites or historic resources. By their nature, aquatic pesticides are used in water, whereas archeological sites in the Lahontan Region are characteristically in the uplands.

6. GEOLOGY and SOILS. Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☐	☒
i) Rupture of a known earthquake fault, as delineated in the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines & Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☐	☒
d) Be located on expansive soils, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternate wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

a-e) This project concerns the application of aquatic pesticides to water. By its nature, such actions do not influence structural integrity of soils, and so this project will not increase vulnerability of adjacent lands to seismic activity, and will not affect soil capabilities.

7. GREENHOUSE GAS EMISSIONS -- Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☒	☐	☐	☐
b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

a) Aquatic pesticide projects and activities implemented as a result of the Basin Plan amendment may generate significant greenhouse gas emissions. Some greenhouse gas emissions, namely methane release, may result from the decay of vegetation treated with aquatic herbicides. The proposed project requires that dead biomass, a potential emission source, must be removed from the project area and disposed of at an appropriate location. (Removal of biomass may not be necessary in situations where recovering the dead biomass creates a greater potential to impact water quality.) Disposal of dead biomass may include composting for use as a soil amendment, or the biomass may be joined with the waste stream interred in landfills. If composted, the composting process may occur in an enclosed facility that can capture off-gassing, or in a bioreactor so that the gasses can be used for energy production, displacing production from traditional carbon-based sources, however the prescription of a disposal methodology is outside the bounds of Water Board authority and it does not appear that there is another responsible agency for an aquatic pesticide project that would require composting to be done in a way that captures the off gassing.

As noted above, some greenhouse gas emissions, may result if treated biomass is left in place to decay. In other cases, removed biomass may be composted in open air facilities. Regardless of end disposal of plants killed with aquatic pesticides, aquatic plants may be treated early in the growth stage (e.g. spring) or late in their annual growth (e.g. fall). If aquatic plants are treated early in the growth stage, the biomass disposed of through either in situ decay or off site composting would be less compared to the amount that would decay if aquatic weeds were untreated and allowed to process through their annual growth cycle, including fall die-back and decomposition. As such, it is assumed that the greenhouse gases generated by spring (early growth) treatments

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

should be less than an untreated condition. If treatment occurs later in the season, biomass will still not exceed that of an untreated aquatic plant population's annual die-back, so it is assumed the seasonal amount of greenhouse gases potentially generated from the annual dye-off of aquatic vegetation is greater than or equal to that potentially produced from an aquatic herbicide project.

b) In the Lake Tahoe Basin, the Tahoe Regional Planning Agency's Regional Transportation Plan includes six policies that indirectly focus on reducing emissions of greenhouse gases. These TRPA policies are goal statements, including items such as encouraging pedestrian transit oriented development, requiring design of pedestrian/bicycle friendly communities, and using intelligent transportation systems to increase use of alternative modes of transportation. These policies will not be affected by this Basin Plan amendment, as transportation changes will not result from aquatic pesticide projects which may be proposed under the amendment's conditions and criteria. The greenhouse gasses associated with vehicle travel related to implementation and monitoring of aquatic pesticide projects is expected to be less than significant.

8. HAZARDS and HAZARDOUS MATERIALS. Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☒	☐	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼ mile of an existing or proposed school?	☒	☐	☐	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would it create a significant hazard to the public or to the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or a public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

a, b) The use of aquatic pesticides requires transport of the aquatic pesticides to the implementation site. The transportation and handling of concentrated pesticides involves some risk of accident, upset, and release of chemicals. Individual projects will need to identify and implement mitigation measures to reduce this risk to less than significant levels, such as limiting hours of operation or limiting vehicle trips for transport or disposal. Pesticide applicators are required to submit spill contingency plans and are required to be trained and licensed pesticide applicators.

This action includes reasonably foreseeable intentional release of aquatic pesticides into the environment. The release of aquatic pesticides into the environment will be intentional and not accidental. Individual projects will need to incorporate mitigation measures to substantially reduce the risk of accidental release. Exemption criteria include the requirement that transport and application methods protect water quality and that the project includes spill contingency plans. Additionally, the Basin Plan amendment language requires that the least amount of effective pesticide be used, and that alternatives to chemical means are employed whenever alternative means would provide an effective method, and that the pesticide is applied according to the FIFRA label.

Examples of mitigation techniques may include: a requirement that trained personnel be in attendance at all times during pesticide applications; use of secondary containment where appropriate; and preparation of a Spill Contingency Plan addressing spill prevention and cleanup measures. Additionally, the amendment includes the criteria to notify the public of a pesticide implementation. Notification may include posting signage to prevent human access to the treatment area.

c) It is conceivable that the use of aquatic pesticides will be proposed within a ¼ mile of a school, which would require the handling of hazardous aquatic pesticides within that proximity of a school. Notifying the public of a treatment event is a requirement of the exemption criteria. The Water Board may refuse to grant an exemption request if it judges the project a danger to the school and not in the best interest of the people of California. Mitigation for these instances could include a requirement to stage and implement a project only when school is not in session.

d) The use of aquatic pesticides will be, by definition, in water, and is not expected to be located in hazardous materials sites.

e, f) Aquatic pesticide projects proposed following adoption of this Basin Plan amendment could conceivably be in proximity to a public or private airport. Any such project would focus on the use of aquatic pesticides in water. The pesticide user would be trained in applying aquatic pesticides to water, FIFRA labels must be followed, and contingency and spill containment plans would be in place. The use of the aquatic pesticides would not affect people working in the vicinity, unless their work required contact with the water treated. In this case, the application of aquatic pesticides to water

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

should be coordinated with the workers to make sure that their job duties and timing do not conflict with the pesticide implementation.

g) Aquatic pesticide projects proposed under the requirements of the Basin Plan amendment will not impede emergency access or conflict with the implementation of any emergency response plan. The project may result in limited or one time access to project sites, but this limited need for access is not expected to block ingress or egress routes.

h) All projects proposed under the amendment requirements involve the use of aquatic pesticides as applied to water. They will not affect terrestrial vegetation or structures and will not increase risk of wildfire.

9. HYDROLOGY and WATER QUALITY. Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☒	☐	☐	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (*e.g.*, the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	☒
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☐	☒
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

a) Application of aquatic pesticides by definition involves a discharge of chemicals into surface waters, including pesticide active ingredients and non-active “inert” ingredients

such as emulsifiers and dispersants that may be present in the pesticide formulation. The use of aquatic pesticides may result in the temporary violation of water quality standards, including toxicity, and may temporarily impact beneficial uses, such as Cold Freshwater Habitat (COLD), Water Contact Recreation (REC-1), and Municipal and Domestic Supply (MUN). If not removed following herbicide treatments, dead plant material can affect water quality by lowering dissolved oxygen levels. Different pesticide products vary in their respective persistence, toxicity, and environmental fate. The Basin Plan amendment may allow temporary exceedence of narrative and numeric water quality objectives for projects given an exemption to the prohibition on aquatic pesticides.

Individual aquatic pesticide projects will be subject to environmental documentation and review requirements, and evaluation under the proposed Basin Plan amendments, on an individual project (or programmatic) basis. For water quality impacts, this review and evaluation must take into account persistence in waters and sediments, toxicity to humans and other organisms, and environmental fate including the potential for bioaccumulation. The criteria for evaluating projects under the proposed Basin Plan amendments stipulate aquatic pesticide applications cause no long-term impairment of beneficial uses. The criteria require that alternatives to pesticide use must be thoroughly evaluated and implemented when feasible. The criteria also require that the lowest possible effective pesticide concentration be used, that the smallest practicable area be treated, that a monitoring plan accepted by the Water Board be followed, and that BMPs be identified and implemented as appropriate to minimize water quality impacts. Even with these requirements, the temporary violation of water quality objectives cannot necessarily be avoided in each and every project.

b-e) The use of aquatic pesticides will not deplete groundwater supplies or interfere with groundwater replenishment. The application of aquatic pesticides is not a consumptive use of the waters, and does not create any impermeable layer that prevents groundwater recharge. No dredge, fill, or alteration of stream path will occur to apply aquatic pesticides, and the application of aquatic pesticides will not increase runoff or risk of flooding.

f) The impacts of this amendment, and reasonably foreseeable associated aquatic pesticide use, are thoroughly disclosed and highlighted in this checklist. Water quality will not be substantially degraded in ways other than those discussed, in section 9a above. Any additional impacts on water quality are not expected to be significant.

g-j) No construction will be permitted from either direct or indirect impacts of this amendment, so no structures will be created and no levees or dams will be constructed or altered. The use of aquatic pesticides will not increase the risk of inundation by flood, seiche, tsunami, or mudflow, as no topographic or bathymetric changes to the environment will occur from pesticide applications to water.

10. LAND USE AND PLANNING. Would the project:

a) Physically divide an established community?	☐	☐	☐	☒

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

a, b) The application of aquatic pesticides would not physically divide a community. The action proposes to change a regulation of the Water Board, but will not otherwise conflict with any regulations of any agencies with overlapping jurisdiction to the Water Board.

c) The Lahontan Region contains parts of the El Dorado County and Placer County. Both the El Dorado County Integrated Natural Resources Management Plan, and the Placer County Natural Community Conservation Plan apply to areas of these counties on the west slope of the Sierras, outside of the Lahontan Region. The Lahontan Region contains several Habitat Conservation Plans (HCPs) as determined by reviewing the USFWS Ecosystem Conservation Online System's Regional Summary Report on March 9, 2011. The HCPs address the following species: desert tortoise (*Gopherus agassizii*) threatened, and the southwestern willow flycatcher (*Empidonax traillii extimus*), endangered. The proposed amendment does not conflict with HCPs covering these animals. A review of the recovery plans for the desert tortoise and southwestern willow flycatcher indicates that the proposed amendment is not in conflict with the HCPs in the Lahontan Region.

11. MINERAL RESOURCES. Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of future value to the region and the residents of the State?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

a, b) The use of aquatic episodes will not impact mineral resources of the region, nor any mineral resource recovery sites, as all potential projects would be in water.

12. NOISE. Would the project result in:				
a) Exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	☒
b) Exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing in or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing in or working in the project area to excessive noise levels?	☐	☐	☐	☒

a, b) Applying aquatic pesticides to water is not a noise-intensive undertaking and is not expected to exceed noise standards. Similarly, it does not result in ground vibration.

c) Pesticide applications are, by their nature, temporary. The application of a pesticide to water does not result in permanent increases in ambient noise levels. Once applied, the application process ceases and the pesticide works to kill the target species.

d) Applying aquatic pesticides to water is not a noise-intensive undertaking. Temporary increases in ambient noise levels may occur if access vehicles travel to a remote or naturally quiet area, but the duration of the increase and actual increase in noise is not expected to result in a substantial increase in noise levels.

e) The use of aquatic pesticides does not contribute to or increase noise associated with air traffic or airstrips.

13. POPULATION AND HOUSING. Would the project:				
a) Induce substantial population growth in an area either directly (*e.g.*, by proposing new homes and businesses) or indirectly (*e.g.*, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

a-c) No element of this project will result in an increased population, induce population growth, nor will the project displace existing housing or residents. No construction and no increase in infrastructure will result from this project.

14. PUBLIC SERVICES. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service rations, response times or other performance objectives for any of the public services:				
a) Fire protection?	☐	☐	☐	☒
b) Police protection?	☐	☐	☐	☒
c) Schools?	☐	☐	☐	☒
d) Parks?	☐	☐	☐	☒

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Other public facilities?	☐	☐	☐	☒

a-e) Projects that propose the use of aquatic pesticides will not result in the construction or physical alteration of any government facilities.

15. RECREATION. Would the project:

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☒

a, b) The project will not increase the use of recreation facilities nor require the expansion of recreational facilities to meet an increase in recreation demand resulting from the project.

16. TRANSPORTATION / TRAFFIC. Would the project:

a) Exceed the capacity of the existing circulation system, based on an applicable measure of effectiveness (as designated in a general plan policy, ordinance, etc.), taking into account all relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☒
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	☒

a, b, d, e, f) The project will not result in a burden to transportation infrastructure, impede emergency access, or conflict with any transportation plans or policies that support alternative transportation. The project may result in limited one time or limited time access to project sites, but this limited need for access will not substantially burden the road system with congestion.

c) Aquatic pesticides do not require aerial pesticide dispersant. Some vector control organizations may apply larvicide aerially to kill adult mosquitoes, but this would not be

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

a change from current vector control activities and, as a result, would not result in increased air traffic levels.

17. UTILITIES AND SERVICE SYSTEMS. Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☒	☐
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

a) The project is not expected to result in exceedence of wastewater treatment requirements, because aquatic pesticides applied to surface waters are expected to dissipate and breakdown over time and will not require treatment at a wastewater treatment plant. Project proponents must implement proper storage and handling of chemicals to prevent discharges to wastewater collection systems in amounts that would exceed existing treatment capabilities.

b, e) The use of aquatic pesticides will not result in an increase of consumptive water use and so will not cause a need for the expansion of new water or wastewater facilities. The project will not burden wastewater treatment facilities, as it will not add water to existing wastewater infrastructure.

c) No construction or increase in impervious coverage will result from the use of aquatic pesticides, and so no new or expanded storm water drainage facilities will be required.

d) The use of aquatic pesticides will not require new water supplies. In some cases water may be used to create a pesticide solution of a particular dilution prior to application, but the water used in these instances will not require expansion of water facilities and will be a temporary need. Existing resources will be sufficient for these actions. Additionally, as required by the prohibition exemption criteria, project applicants must inform and coordinate pesticide application activities with potentially affected water purveyors.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

f) The use of aquatic pesticides may result in dead flora or fauna that may need removal to deal with odor issues as described in item 3, Air Quality, above. The potential need for disposal of this biomass is not expected to cause capacity issues with any landfills used.

g) The generation of solid waste, namely biomass in need of disposal, should not be significant and therefore should not affect compliance with federal, state, and local statutes and regulation related to solid waste.

18. MANDATORY FINDINGS OF SIGNIFICANCE.

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☒	☐	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of potential future projects)	☐	☐	☒	☐
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☒	☐	☐	☐

a) Aquatic pesticides are chemicals designed to eliminate or control undesirable target organisms, including plants and animals. Depending on the pesticide's specificity and concentration used, non-target organisms may also be harmed to some extent. The use of herbicides may affect habitat by killing plants that provide food or shelter, or that physically support habitat (for example by providing shade or dissolved oxygen).

Use of aquatic pesticides may cause a fish or wildlife population to drop below self sustaining methods. The use of the pesticide, by definition, usually has a goal of eliminating or severely depleting a population of a plant or animal species. This may be true if the DFG is eliminating an invasive species or an introduced fish species that is outcompeting an endangered or threatened species. In these events, the goal of the pesticide use is to restore ecosystem integrity, water quality, and associated beneficial uses. Often not using aquatic pesticides may result in degradation of these values. The requirements of pesticide applications in the amendment include the use of non-chemical measures when effective prior to the use of chemical aquatic pesticides, and the use of the least amount of pesticide reasonably effective.

Pesticide applications that may be allowed pursuant to the requirements in the amendment language will not eliminate important examples of major periods of

California history or prehistory because the use of aquatic habitats will not alter the physical properties of the environment.

By definition, application of aquatic pesticides involves a discharge of chemicals expected to temporarily degrade water quality. Persistence depends on several factors including the specific pesticide used, the concentration used, and environmental factors such as temperature and light availability. The proposed Basin Plan amendments provide for project-specific evaluation designed to disallow projects presenting a forseeable long-term environmental risk. Pesticide projects will also be subject to environmental documentation and review requirements, on an individual project (or programmatic) basis.

b) Each project will be considered by the Water Board on its individual needs and merits and will undergo environmental analysis. The potential use of aquatic pesticides in various waterways keeps the effects on the environment geographically separate. Additionally, after initial use, the aquatic pesticides are expected to break down, further reducing the impacts of repeated applications to individual waterways. It is not anticipated that the quantity of pesticide projects, and the timing of project implementation, will result in an overall trend of decreased water quality and adversely affected beneficial uses regionwide. For these reasons, and the restrictions on aquatic pesticide use in the amendment, the cumulative impact of the adoption of this project is less than significant.

c) The proposed action has the potential to result in environmental effects that may adversely affect human beings, either directly or indirectly. Pesticide projects allowed under this amendment may cause a temporary water supply loss when source waters are affected by pesticide application. Project proponents are required to coordinate with potentially affected water purveyors and provide potable drinking water where necessary.

Pesticide projects may cause a temporary loss of recreational opportunities (e.g., fishing, swimming). These impacts to recreation are likely to occur during all of a pesticide project's duration or a part thereof. For example, pesticide projects could temporarily affect the use of such recreational access points as boat ramps, public beaches, and fishing piers. Impacts that could occur may include temporary closures during the pesticide treatment. These potential impacts could be mitigated by limiting implementation to seasons with little or no use of these recreational facilities, by strategically applying aquatic pesticides to a treated water with staggered applications at different locations within the water, or redirecting the public to other similar facilities nearby and by adequately noticing the public about the temporary closure of a public facility.

Long-term impacts or substantial adverse impacts to humans can potentially arise as a result of improper use or spill of aquatic pesticides. The risk is minimized when aquatic pesticides are applied by trained and qualified applicators according to label directions and pursuant to requirements of the California Department of Pesticide Regulation and

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

Prepared By:

Mary Fiore-Wagner 12/7/2011
Mary Fiore-Wagner Date
Environmental Scientist

for 12/7/2011
Daniel Sussman Date
Environmental Scientist

Reviewed by:

Lauri Kemper 12/12/11
Lauri Kemper Date
Assistant Executive Officer

Authority: Public Resources Code Sections 21083, 21084, 21084.1, and 21087.

Reference: Public Resources Code Sections 21080(c), 21080.1, 21080.3, 21082.1, 21083, 21083.1 through 21083.3, 21083.6 through 21083.9, 21084.1, 21093, 21094, 21151; *Sundstrom v. County of Mendocino*, 202 Cal. App. 3d 296 (1988); *Leonoff v. Monterey Board of Supervisors*, 222 Cal. App. 3d 1337 (1990).

Findings and Statement of Overriding Considerations

Findings

The Water Board identified the following potentially significant impacts and impacts mitigated to a less than significant level associated with the proposed basin plan amendment. Pursuant to California Code of Regulations (CCR), Title 14, Section 15091(a), the Water Board must make one or more of the following findings for each of these identified significant impacts.

1) Changes were made to the project to mitigate or avoid the significant effect, as identified in the EIR or equivalent Substitute Environmental Document (SED).
2) Such changes or alterations are within the responsibility and jurisdiction of another public agency, and not the agency making the finding. Such changes have been adopted by such other agency, or can and should be adopted by another agency.
3) Specific economic, legal, social, or technological or other considerations make infeasible the mitigation measure or project alternative identified in the EIR or SED.

The following impact categories are "**Less Than Significant with Mitigation Incorporated**" as identified in the Environmental Checklist. For these environmental impacts, changes were made to the project to mitigate or avoid the significant effect [CCR Section 15091(a)(1)]. The mitigation measures that are required in, or incorporated into, the project will be fully enforceable through permit conditions or other measures (criteria and control measures that must be satisfied prior to consideration for an exemption).

AESTHETICS – SUBSTANTIALLY DEGRADE EXISTING VISUAL CHARACTER
The Water Board finds that pesticide applications could temporarily create unsightly areas of dead vegetation, floating dead aquatic organisms, etc., but that changes were made to the project to mitigate or avoid this potentially significant effect, as identified in the SED. The mitigation includes removal and disposal of dead plants and animals from water to the extent feasible. Based on this, the Water Board finds that the impact caused to aesthetic resources from dead vegetation or floating dead aquatic organisms is reduced to less than significant.

AIR QUALITY – EXPOSURE OF SENSITIVE RECEPTORS
The Water Board finds that there is a possibility that some aquatic pesticides will volatilize. Changes were made to the project to mitigate or avoid this potentially significant effect, as identified in the SED. The mitigation requires that the planned treatment protocol result in the minimum discharge of chemical substances that can reasonably be expected for an effective treatment. Exposure to potential airborne pollutants will also be minimized or avoided through implementation of the required public notification plan. Though outside of the Water Board's jurisdiction, pesticide applicators subject to this amendment must comply with requirements that regulate the sale, storage, handling, and use of pesticides consistent with (1) label instructions

approved by the United States Environmental Protection Agency (USEPA) under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), and (2) any Use Permits issued by the CAC which incorporate permit conditions recommended by the Department of Pesticide Regulation (DPR) and the California Department of Public Health (DPH). Based on these mitigation requirements and control measures, the Water Board finds that the impact caused by sensitive receptors being exposed to substantial pollutant concentrations would be mitigated to less than significant.

AIR QUALITY – CREATE OBJECTIONABLE ODORS AFFECTING A SUBSTANTIAL NUMBER OF PEOPLE

The Water Board finds that the proposed action could result in objectionable odors associated with pesticide residues in the immediate vicinity of the project site, or from the decay of aquatic organisms targeted by aquatic pesticide treatments. Odors from chemical residues will typically be very short lived, lasting until the chemicals have sufficiently dissipated. A mitigating criterion of the proposed action is the requirement that appropriate measures be taken to remove and dispose of dead biomass to the extent feasible. Another mitigation is that applicants are required to notify the potentially affected public prior to application of aquatic pesticides. Together these measures are expected to mitigate the potential impacts of objectionable odors affecting a substantial number of people to less than significant.

HAZARDS AND HAZARDOUS MATERIALS – CREATION OF HAZARD TO PUBLIC OR ENVIRONMENT THROUGH TRANSPORT, USE, DISPOSAL OF HAZARDOUS MATERIAL OR REASONABLY FORESEEABLE UPSET OR ACCIDENT

The Water Board finds there is potential for a release of hazardous materials from the proposed projects. Changes were made to the project to mitigate or avoid these potential effects, as identified in the SED. The mitigation includes (1) submittal of spill contingency plans to address proper transport, storage, spill prevention, and cleanup, and (2) implementation of a public notification plan prior to the pesticide treatment. Though outside of the Water Board's jurisdiction, pesticide applicators subject to this amendment must comply with requirements that regulate the sale, storage, handling, and use of pesticides consistent with (1) label instructions approved USEPA under FIFRA, and (2) any Use Permits issued by the CAC which incorporate permit conditions recommended by the DPR and the DPH. Additionally, the Basin Plan amendment language requires the project proponent to consider and employ non-chemical control measures whenever alternative means would provide an effective method. If aquatic pesticides must be used, the planned treatment protocol must result in the minimum discharge of aquatic pesticides that can reasonably be expected for effective treatment. These mitigations are expected to lessen potential impacts from risk of release of hazardous materials to the environment to less than significant.

The following impact categories are "**Potentially Significant**" as identified in the Environmental Checklist. For these impacts there are mitigation measures available, however, implementation of these mitigation measures are either not under the control or discretion of the Water Board, but are within the responsibility and jurisdiction of other (responsible) agencies [CCR Section 15091(a)(2)] and/or specific legal, social or technological or other considerations make infeasible the mitigation measure or project

alternative identified in the SED [CCR Section 15091(a)(3)]. A Statement of Overriding Considerations is provided for these impacts, below.

BIOLOGICAL RESOURCES – SUBSTANTIAL ADVERSE EFFECT, DIRECTLY OR THROUGH HABITAT MODIFICATIONS, ON ANY SPECIES IDENTIFIED AS A CANDIDATE, SENSITIVE, OR SPECIAL STATUS SPECIES IN LOCAL OR REGIONAL PLANS, POLICIES, OR REGULATIONS BY THE DFG OR USFWS

The Water Board finds that the proposed action may result in a substantial adverse effect on special status species. Aquatic pesticide applications allowed under this amendment must satisfy specific exemption criteria and permit conditions. The exemption criteria require evaluation and monitoring of impacts to, and recovery of, rare, threatened and endangered species. Compliance with these limits is intended to allow some water quality degradation without unreasonably impairing beneficial uses. The intent of pesticides is to kill biota. Though the overall and long-term goal of a pesticide project may be to benefit biological resources, the actual use of aquatic pesticides in fact unavoidably impacts biological resources in the short-term. The Water Board recognizes that some pesticide projects, especially rotenone projects, will kill non-target species. Once impacted by a pesticide project, damage to the aquatic macroinvertebrate assemblage exists and recolonization to pre-project levels is uncertain. The Water Board must weigh this risk when analyzing and deciding on proposals for pesticide use. The Water Board finds that unavoidable impacts may occur within the treatment area during pesticide application [(CCR Section 15091(a)(3)]. Additionally, it is probable that were special status species identified, DFG would require the project to comply with the provisions of California Fish and Game Code Sections 2050-2098, which specify under which circumstances incidental take is permitted. Enforcement of this requirement is outside the jurisdiction of the Water Board [(CCR Section 15091(a)(2)]. Where a significant impact is likely to occur and is unavoidable, a statement of overriding consideration in the CEQA document for the site-specific project would be required.

BIOLOGICAL RESOURCES – HAVE A SUBSTANTIAL ADVERSE EFFECT ON ANY RIPARIAN HABITAT OR OTHER SENSITIVE NATURAL COMMUNITY

The Water Board finds that the proposed action may result in a substantial adverse effect to sensitive natural communities. The purpose of applying aquatic pesticides is for the long-term maintenance and protection of beneficial uses (e.g., drinking water supply, freshwater habitat, restoration and preservation of habitat that supports threatened and endangered species) and public health. However, by definition aquatic pesticides are toxic to target species and this toxicity has the potential to adversely affect non-target species. For examples the application of aquatic pesticides to wetlands for vector control may have a substantial adverse effect on sensitive natural communities associated with wetlands by killing non-target species or by eliminating a food source for organisms that feed on mosquito larvae. Though the Water Board may deny project proposals that fail to demonstrate how the project will meet exemption criteria, and the proposed action requires mitigations to limit impacts of the pesticide applications, the primary intent of pesticide use being to kill organisms means that, though substantially lessened, impacts to sensitive natural communities will not be

avoided in each and every project [CCR Section 15091(a)(3)].

GREENHOUSE GAS EMISSIONS – GENERATE GREENHOUSE GAS EMISSION
The Water Board finds that aquatic pesticide projects implemented as a result of the Basin Plan amendment may generate significant greenhouse gas emissions. Some greenhouse gas emissions, namely methane release, may result from the decay of vegetation treated with aquatic herbicides. The proposed project requires that dead biomass, a potential emission source, must be removed from the project area and disposed of at an appropriate location. (Removal of biomass may not be necessary in situations where recovering the dead biomass creates a greater potential to impact water quality.) The proposed amendment does not specify method of disposal, which is outside the bounds of the Water Board's authority [CCR Section 15091(a)(2)]. If disposal of dead biomass involves composting, the composting process may generate significant greenhouse gas emissions if it is not conducted in a way that captures off gassing. Emissions could be captured if the composting process occurred in an enclosed facility or in a bioreactor, where the emissions could be used for energy production, but Water Board does not have the ability to dictate the disposal methodology of the biomass, and it does not appear that there is any other responsible agency with jurisdiction to require such disposal [CCR, section 15091(a)(2)(3)].

As noted above, some greenhouse gas emissions, may result if treated biomass is left in place to decay. In other cases, removed biomass may be composted in open air facilities. Regardless of end disposal of plants killed with aquatic pesticides, aquatic plants may be treated early in the growth stage (e.g. spring) or late in their annual growth (e.g. fall). If aquatic plants are treated early in the growth stage, the biomass disposed of through either in situ decay or off site composting would be less compared to the amount that would decay if aquatic weeds were untreated and allowed to process through their annual growth cycle, including fall die-back and decomposition. As such, it is assumed that the greenhouse gases generated by spring (early growth) treatments should be less than an untreated condition. If treatment occurs later in the season, biomass will still not exceed that of an untreated aquatic plant population's annual die-back, so it is assumed the seasonal amount of greenhouse gases potentially generated from the annual dye-off of aquatic vegetation is greater than or equal to that potentially produced from an aquatic herbicide project.

HAZARDS AND HAZARDOUS MATERIALS – HANDLE HAZARDOUS OR ACUTELEY HAZARDOUS MATERIALS, SUBSTANCES, OR WASTE WITHIN ¼ MILE OF AN EXISTING OR PROPOSED SCHOOL
The Water Board finds there is the possibility that pesticides may be handled within ¼ mile of an existing or proposed school. This environmental checklist (Section 8.c.) defines the use or handling of hazardous materials, such as pesticides, within a ¼ mile of a school as a potentially significant impact, and does not provide the discretion to decide if the use of such materials is beneficial to the school and its users. While the proposed amendment criteria require notification of the public about pesticide use, notification is not in itself mitigation enough to reduce the potential impact of such a possibility to a less than significant level. If a project were to be proposed in such

proximity to a school, the Water Board may negotiate a project schedule designed to minimize risk of impact. Alternatively, the Water Board could deny an exemption request as being not in the best interest of the people of California, but such a decision is at the discretion of the Water Board and the proposed amendment contains no requirement for denial. Though these actions may substantially lessened the potential hazard associated with the handling of aquatic pesticides within ¼ mile of a school, the potential for an adverse impact will not be avoided in each and every project [CCR Section 15091(a)(3)].

HYDROLOGY AND WATER QUALITY – VIOLATE ANY WATER QUALITY STANDARDS

The Water Board finds that the proposed action may unavoidably violate water quality standards. However, the benefits (protection of public health and ecological integrity) of this proposed action outweigh the unavoidable adverse environmental effects, and such adverse environmental effects are acceptable under the circumstances.

Application of aquatic pesticides by definition involves a discharge of chemicals into surface waters, including active ingredients that yield toxic effects on target organisms and non-active “inert” ingredients that may be present in the pesticide formulation and adjuvants which may be added to pesticides during an application event to increase pesticide effectiveness. Individual aquatic pesticide projects will be subject to environmental documentation and review requirements, and evaluation under the proposed Basin Plan amendments, on an individual project (or programmatic) basis. For water quality impacts, this review and evaluation must take into account persistence in waters and sediments, toxicity to humans and other organisms, and environmental fate, including the potential for bioaccumulation. The criteria for evaluating projects under the proposed Basin Plan amendments stipulate aquatic pesticide applications cause no long-term impairment of beneficial uses. The criteria require that alternatives to pesticide use be thoroughly evaluated and implemented when feasible. The criteria also require that the lowest possible effective pesticide concentration be used, that the smallest practicable area be treated, that an approved monitoring plan be followed, and that BMPs be identified and implemented as appropriate to minimize water quality impacts.

Within the area targeted for treatment, the discharge of an effective concentration of aquatic pesticides may result in the temporary violation of water quality standards, including toxicity, color, and chemical constituents. Additionally, beneficial uses, such as Cold Freshwater Habitat (COLD), Water Contact Recreation (REC-1), and Municipal and Domestic Supply (MUN), may be temporarily impacted during a pesticide treatment event.

When an exemption to the pesticide prohibition is granted, and the discharge of aquatic pesticides is permitted, the Water Board may also grant a short-term exemption to narrative and numeric water quality objectives. For some pesticide application projects, an exemption to the narrative and numeric water quality objectives is necessary to effectively carry out the intent of the project. Though exemptions are granted to allow a temporary excursion of water quality standards, the Water Board will only permit aquatic

pesticide discharges that incorporate control measures (as more fully described in the SED, section 9.a.) to limit water quality degradation and impacts to beneficial uses to the shortest time and within the smallest area necessary for project success. Any exceedances of water quality standards within the treatment area are of such transient nature that full restoration of water quality, and thus protection of beneficial uses, is achieved upon project completion. Even with these requirements, the temporary violation of water quality objectives, though substantially lessened, will not be avoided in each and every project [CCR Section 15091(a)(3)].

MANDATORY FINDINGS OF SIGNIFICANCE – POTENTIAL TO DEGRADE THE QUALITY OF THE ENVIRONMENT, SUBSTANTIALLY REDUCE THE HABITAT OF A FISH OR WILDLLIFE SPECIES, CAUSE A FISH WILDLIFE POPULATION TO DROP BELOW SELF-SUSTAINING LEVELS, THREATEN TO ELIMNIATE A PLANT OR ANIMAL COMMUNITY

The Water Board finds that the proposed action has the potential to degrade the quality of the environment and cause harm to the habitat or a population of fish or wildlife species. By definition the use of the pesticide, usually has a goal of eliminating or severely depleting a population of a plant or animal species. In some cases, habitat for a species may be impacted if the habitat is an invasive aquatic plant, such as a bed of Eurasian watermilfoil being targeted for control. The goal of pesticide uses covered by this Basin Plan amendment is to protect and restore ecosystem integrity, water quality, and associated beneficial uses. So, while a population will be impacted by the use of a pesticide [CCR Section 15091(a)(3)], the impact will also be beneficial to the environment. In fact, not using pesticides may result in degradation of these values.

MANDATORY FINDINGS OF SIGNIFICANCE – ENVIRONMENTAL EFFECTS THAT WILL CAUSE SUBSTANTIAL ADVERSE EFFECTS ON HUMAN BEINGS, EITHER DIRECTLY OR INDIRECTLY

The Water Board finds that the proposed action may indirectly result in substantial adverse effects on humans. The potential impacts to humans are indirect. Pesticide projects allowed under this amendment may cause a temporary water supply loss when source waters are treated, either to control an infestation of invasive species, harmful algal blooms, biofouling of a water intake system, or another circumstance. Without the pesticide treatment, the effects of the target species may prove worse than the temporary effects of pesticide use. In these pesticide projects, the proposed amendment's exemption criteria require that project proponents coordinate with potentially affected water purveyors and provide potable drinking water where necessary. That coordination should reduce the potential impact to water supplies, but the agreement reached by the coordinating parties is the purview of the water suppliers [CCR Section 15091(a)(2)].

Another way in which the proposed amendment may result in impacts to humans is by causing a temporary loss of recreational opportunities (e.g., fishing, swimming). In these cases mitigations, such as alternative recreation sites and projects timed to avoid peak recreation times, help to minimize impact to humans, but do not eliminate the impact to humans [CCR Section 15091(a)(3)]. Additionally, the long-term benefits of such a

project outweigh the short term inconvenience of the impact to human recreational opportunities.

Statement of Overriding Considerations

For the reasons stated below, the Water Board hereby finds that the anticipated long-term benefits of the basin plan amendment outweigh and render acceptable the potentially significant impacts that were unable to be mitigated to levels less than significant, as identified above.

The Water Board recognizes that serious public health, safety, and economic implications could result if the amendment is delayed and appropriate uses of aquatic pesticides continue to be prohibited. When the amendment is in effect, it will be possible for the Water Board to allow the conditional use of pesticides for projects vital to public health and safety and ecological preservation.

The amendment will permit public agencies to legitimately carry out their statutory requirements to provide Californians and their communities reprieve from the discomforts and economic effects of pests. Private entities (e.g., homeowner's associations and private water utilities) with a legitimate responsibility for conducting public health and safety or public resource management activities could also propose aquatic pesticide projects that may qualify for conditional pesticide use.

Similar to the intent of the current "non-detect" pesticide objective, the proposed discharge prohibition provides the region's waters with a high level of protection against the adverse effects of unauthorized waste discharges containing pesticides. A waste discharge prohibition accomplishes this goal without the regulatory and legal complications of the current water quality objective, discussed in the analysis above. Further, it would lawfully allow, by means of specific exemption criteria, a mechanism to permit certain qualified, short-term aquatic pesticide application projects to be regulated by the Water Board.

This environmental analysis identifies seven areas where the environment has the potential to be significantly impacted by the proposed amendment (one each in checklist sections 7, 8, 9 and two each in sections 4 and 18). The Water Board finds that unavoidable impacts may occur within the treatment area during pesticide application; however, such impacts will not unreasonably affect beneficial uses. The proposed amendment provides long-term benefits to the environment (e.g., controlling invasive species, restoring endangered species) and the people of California (e.g., vector control, water supply protection). Any impacts associated with aquatic pesticide discharges are outweighed by the benefit to California as a whole (the people, the environment) by allowing some degradation to occur.

ATTACHMENT 1:

Definitions

ATTACHMENT 1

DEFINITION OF TERMS

Active Ingredient – Active ingredients are manufacturer disclosed ingredients that yield toxic effects on target organisms (State Board Water Quality Order No. 2004-0009-DWQ)

Adjuvant – Adjuvants are ingredients that are added to aquatic pesticides during a treatment event. These ingredients are chosen by the discharger, based on site characteristics, and typically increase the effectiveness of aquatic pesticides on target organisms. (State Board General Permit No.)

Application Area – The application area is the area to which aquatic pesticides are directly applied.

Application Event – The application event is the time that introduction of the pesticide to the application area (or treatment area) takes place. The application event is the time that the product is applied, not the length of time that it releases pesticide into the environment.

Aquatic Pesticide - Pesticides registered by the California Department of Pesticide Regulation (DPR) and formulated for use in water to control aquatic animal or plant pests. An aquatic pesticide is any substance (including biological agents) applied in, on or over the waters of the State or in such a way as to enter those waters for the purpose of inhibiting the growth or controlling the existence of any plant or animal in those waters.

Aquatic pesticides, for purposes of Regionwide Prohibition 6, also include adulticides which are applied by spraying, either by ground or aerial application, at, over, or near water to control adult mosquitoes. During adulticide applications, a portion of the pesticide will unavoidably be deposited to surface waters in order to effectively target the adult mosquitoes.

California Toxics Rule (CTR) - U.S. EPA promulgated water quality criteria for 126 priority pollutants applicable to most of California's inland surface waters and enclosed bays and estuaries.

Endangered Species – As defined in the federal Endangered Species Act section 1532
A species in danger of extinction throughout all or a significant portion of its range.

Inert Ingredient – Inert ingredients are additional ingredients that are not toxic to target organisms. These ingredients are often trade secrets and therefore not always disclosed by the manufacturer. (State Board Water Quality Order No. 2004-0009-DWQ)

Invasive Species – As defined by the National Invasive Species Council in Executive Order 13112
An alien (or non-native) species whose introduction does, or is likely to cause economic of environmental harm or harm to human health.

Local agency – Any public agency other than a state agency, board, or commission. Local agency includes but is not limited to cities, counties, charter cities and counties, districts, school districts, special districts, redevelopment agencies, local agency formation commissions, and

any board, commission, or organizational subdivision of a local agency when so designated by order or resolution of the governing legislative body of the local agency. (CCR, Title 14, section 15368)

Native Species – As defined by the National Invasive Species Council in Executive Order 13112
With respect to a particular ecosystem, a species that, other than as a result of an introduction, historically occurred or currently occurs in that ecosystem.

Nuisance - Under the California Water Code, section 13050(m), nuisance means anything which meets **all** of the following requirements: (1) Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property, (2) Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal, (3) Occurs during, or as a result of, the treatment or disposal of wastes.

Pest – As defined in Food and Agriculture Code section 12754.5
Any of the following that is, or is liable to become, dangerous or detrimental to the agricultural or nonagricultural environment of the state:

(a) Any insect, predatory animal, rodent, nematode, or weed.
(b) Any form of terrestrial, aquatic, or aerial plant or animal, virus, fungus, bacteria, or other microorganism (except viruses, fungi, bacteria, or other microorganisms on or in living man or other living animals).
(c) Anything that the director of the Department of Food and Agriculture, by regulation, declares to be a pest (Section 12754.5 of the Food and Agriculture Code)

Pesticide – As defined in Food and Agriculture Code section 12753
Any spray adjuvant or any substance, or mixture of substances which is intended to be used for defoliating plants, regulating plant growth, or for preventing, destroying, repelling, or mitigating any pest, as defined in section 12754.5 of the Food and Agriculture Code, which may infest or be detrimental to vegetation, man, animals, or households, or be present in any agricultural or nonagricultural environment whatsoever.

Pesticide residues – Any pesticide breakdown products or other pesticide ingredients that are present after the use of the pesticide for controlling the target pest. Pesticide residues occur when concentrations of the active pesticide are below effective concentrations. It is difficult to predict at what point a pesticide becomes a pesticide residue because of varying site conditions including target species, water chemistry, application rate and method, flow, and wind direction and speed.

Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP) – A coordinated approach developed by State Water Resources Control Board and the USEPA to address priority toxic pollutants in inland surface waters, enclosed bays, and estuaries of California. The SIP implements priority toxic pollutant criteria contained in the California Toxics Rule (CTR). Section 5.3 of the SIP allows the Water Board, on a case-by-case basis, to consider and grant short-term or seasonal exceptions from meeting the priority pollutant criteria/objectives if determined to be necessary to implement control measures for resource or pest management or drinking water protection and conveyance.

Pollution - Under the California Water Code, section 13050(l)(1), pollution is defined as an alteration of water quality to a degree that unreasonably affects the waters for beneficial uses, or facilities, which serve those beneficial uses.

Priority pollutants - The California Toxics Rule in 40 Code of Federal Regulations, section 131.38(b)(1) lists priority pollutants and sets criteria to protect aquatic life and human health for these listed priority pollutants in the California Toxics Rule.

Project duration or project length - The expected time required for a pesticide to reach its minimum effective concentration and actively treat the target species within the treatment area. Project length is not discretely defined in the Statewide General Aquatic pesticide permits, because the time required for a pesticide to reach its minimum effective concentration varies due to site specific conditions, such as flow, target species, and water chemistry. In recognition of the variability in temporal extent of a treatment event, the Water Board does not expect project length to be discretely defined in any individual or general WDRs or NPDES permits issued by the Water Board to regulate the discharge of aquatic pesticides.

Public agency – Any state agency, board, or commission and any local or regional agency, as defined in CEQA Guidelines. It does not include the courts of the state. This term does not include agencies of the federal government. (CCR, Title 14, section 15379)

Receiving water – Anywhere outside the treatment area (defined by the discharger and accepted by the Water Board) at any time and inside the treatment area after project completion. This definition only applies for purposes of approved pesticide applications.

Threatened Species – As defined in the federal Endangered Species Act
A species “likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.” Populations listed as threatened are less severely depleted than populations classed as endangered.

Treatment Area – The treatment area is the area being targeted to receive lethal doses of pesticides to control a specific pest. Within the treatment area, a spatial zone of impact exists in which water quality and beneficial uses are temporarily degraded.

It is the responsibility of the Discharger to define the treatment area for each specific location that it discharges to.

Treatment Event – The treatment event is the period during which the aquatic application is actively killing or controlling the target pest within the treatment area. It starts upon initiation of the application event and proceeds until the concentration of the aquatic pesticide is below that which can kill the target pest. During the treatment event, a spatial and temporal zone of impact exists in which water quality and beneficial uses are temporarily not protected.

Vector – From the Health and Safety Code Section 2002(k): Any animal capable of transmitting the causative agent of human disease or capable of producing human discomfort or injury, including, but not limited to, mosquitoes, flies, mites, ticks, other arthropods, and rodents and other vertebrates.

Water quality objectives – In accordance with CWC section 13050(h) the limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area.

Zone of Impact – A spatial and temporal zone that exists during, and is targeted by, aquatic pesticide treatments in which existing uses and the level of water quality necessary to maintain those uses will not be protected. The Zone of Impact ceases to exist once the treatment event is completed.

ATTACHMENT 2:

Adopted Basin Plan Language –
Includes four separate but related documents titled as follows:

- Waste Discharge Prohibition and Exemption Criteria
  - Chapter 3 Language – Pesticide BPA
  - Chapter 4 Language – Pesticide BPA
  - Chapter 5 Language – Pesticide BPA

Waste Discharge Prohibition and Exemption Criteria Language
Pesticide Basin Plan Amendment

December 2011
Adopted Basin Plan Amendment

The proposed amendment would insert the following language in Section 4.1 of Chapter 4 (p. 4.1-1) of the Basin Plan, immediately following Regionwide Prohibition No. 5, and in Section 5.2, Lake Tahoe Basin, "Waste Discharge Prohibitions, Regionwide Prohibitions" immediately after Waste Discharge Prohibition No. 4:

To be numbered as 6 in Section 4.1;
To be numbered as 5 in Section 5.2:

6. The discharge of pesticides to surface or ground waters is prohibited.[1]

The following language should be inserted directly following the newly proposed prohibition language (Regionwide Prohibition no. 6) listed in Section 4.1

Exemptions to this prohibition may be allowed subject to the criteria below detailed in the section titled "Exemption Criteria for Aquatic Pesticide Use."

For purposes of the Basin Plan, pesticides are defined in Food and Agriculture Code section 12753 to include any spray adjuvant or any substance, or mixture of substances which is intended to be used for defoliating plants, regulating plant growth, or for preventing, destroying, repelling, or mitigating any pest, as defined in Section 12754.5, which may infest or be detrimental to vegetation, man, animals, or households, or be present in any agricultural or nonagricultural environment whatsoever.

As defined in section 12754.5 of the Food and Agriculture Code, a pest is any of the following that is, or is liable to become, dangerous or detrimental to the agricultural or nonagricultural environment of the state:
(a) Any insect, predatory animal, rodent, nematode, or weed.
(b) Any form of terrestrial, aquatic, or aerial plant or animal, virus, fungus, bacteria, or other microorganism (except viruses, fungi, bacteria, or other microorganisms on or in living man or other living animals).
(c) Anything that the director of the Department of Food and Agriculture, by regulation, declares to be a pest.

"Aquatic pesticides" are pesticides registered by the California Department of Pesticide Regulation (DPR) and formulated for use in water to control aquatic animal or plant pests. An aquatic pesticide is any substance (including biological agents) applied in, on, or over the waters of the State or in such a way as to enter those waters for the purpose of inhibiting the growth or controlling the existence of any plant or animal in those waters.

Aquatic pesticides, for purposes of this Regionwide Prohibition, also include adulticides which are applied by spraying, either by ground or aerial application, at, over, or near water to control adult mosquitoes. During adulticide applications, a portion of the pesticide will unavoidably be deposited to surface waters in order to effectively target the adult mosquitoes.

---

[1] Compliance with this prohibition will be assessed or measured by evidence of pesticide application to liquid water or by analyzing water samples (from either surface or ground waters) for the presence of pesticides. Therefore, proper application of terrestrial pesticides directly to plants or animals located in a surface water (as defined by the Water Code) under dry conditions or directly to land adjacent to a surface water should not (1) result in a violation of the prohibition, (2) require the project proponent to submit an exemption request to the Regional Board, nor (3) require the Regional Board to consider exemptions to the prohibition.

Dry condition example: The application of terrestrial pesticides to the dry stream beds of ephemeral streams would not require a prohibition exemption since this situation involves pesticide application under a dry condition (i.e., no liquid water is present in the ephemeral stream).

Adjacent to surface water example: The application of terrestrial pesticides along a canal to kill weeds and help maintain structural stability would not require a prohibition exemption since this situation involves pesticide application to land, not liquid water.

The following language should be inserted in Section 4.1 of Chapter 4 in a new paragraph directly following the newly proposed prohibition language (Regionwide Prohibition no. 6) in the section titled "Regionwide Prohibitions" and immediately before the section titled "Exemption Criteria for Restoration Projects."

Exemption Criteria for Aquatic Pesticide Use

Purpose and Need for Exemption

The Regional Board recognizes that certain activities involving the application of pesticides (defined above) may be in the public interest because they protect public health and safety or provide ecological preservation. Under some circumstances the Regional Board may grant an exemption to the prohibition and allow a direct application of pesticides to water. This exempted action will constitute a discharge of pollutants into waters of the United States or waters of the State and require coverage under an appropriate permit.

Circumstances eligible for a prohibition exemption involve the use of aquatic pesticides for purposes of vector control, fisheries management, and control of aquatic invasive species or other harmful organisms under emergency or non-emergency situations (e.g., control of harmful cyanobacteria blooms affecting a drinking water supply, control of aquatic invasive species interfering with safe navigation).

If an exemption to the prohibition is granted, waters of exceptional quality within the treatment area[2] may be temporarily degraded due to the application of aquatic pesticides.

Pursuant to the State Board's "Statement of Policy with Respect to Maintaining High Quality of Waters in California" (Resolution No. 68-16), any degradation of high quality water is only permissible if the Regional Board finds that such a lowering of the existing water quality will be consistent with the maximum benefit to people of the State. Similarly, the federal Antidegradation Policy (40 CFR 131.12) dictates that water quality shall be preserved unless it is determined that the lowering of water quality is necessary to accommodate important economic or social development. Additionally, it requires that water quality be adequate to protect existing uses fully.

The prohibition exemption criteria require that degradation of existing high water quality is limited to the shortest possible time and confined to the smallest area necessary for project success. The spatial extent of the treatment area and the duration of the treatment event will vary from project to project and will be proposed by the project proponent and accepted or modified by the Regional Board and specified in the final project plans, exemption conditions, and appropriate permit.

The project proponent shall work with Water Board staff to propose numeric limits for each aquatic pesticide project, which will be incorporated as exemption conditions in the Water Board's resolution granting the prohibition exemption and/ or requirements of the appropriate permit. Permit requirements and/or conditions of the exemption may include, but not be limited to, discharge limits for application rates, receiving water limitations for pesticide residue levels, limits on the temporal and spatial extent (areal and depth) of the treatment area, and recovery time expectations and biotic metrics to assess restoration of affected non-target species.

These project specific requirements issued by the Water Board will ensure project design and implementation will not unreasonably affect beneficial uses. The Water Board will evaluate the exemption request and determine if it satisfies exemption criteria that require project plans to incorporate best management practices to limit adverse impacts to the shortest time possible while achieving project success.

[2] The treatment area is the area being targeted to receive lethal doses of aquatic pesticides to control a specific pest. Within the treatment area, a spatial zone of impact exists in which water quality and beneficial uses are temporarily not protected.

To verify compliance with water quality objectives and discharge requirements, project proponents will implement compliance monitoring. Monitoring will commence no more than one week after the application event[3]. The time frame in which a project must achieve compliance with water quality objectives with the exception of the biocriteria objectives[4], will vary by project depending on the type of pesticide proposed, site specific conditions, and temporal extent of treatment event. Reasonable compliance times will be assigned based on the duration of the treatment event and will be included in the Water Board's resolution to grant exemption. The duration of the treatment event will be determined by whether the pesticide in use is a fast-acting chemical or a slow-release systemic compound and by considering site-specific conditions (flow, target species, water chemistry). For fast-acting pesticides it may be possible to achieve compliance with water quality objectives within a week of the application event. Fast-acting pesticides degrade quickly, usually within a week of application, and so are applied at high concentrations to be effective before degrading. Slower acting pesticides are effective at lower concentrations less toxic to non-target species, but degrade more slowly and require a longer treatment event before complying with water quality objectives.

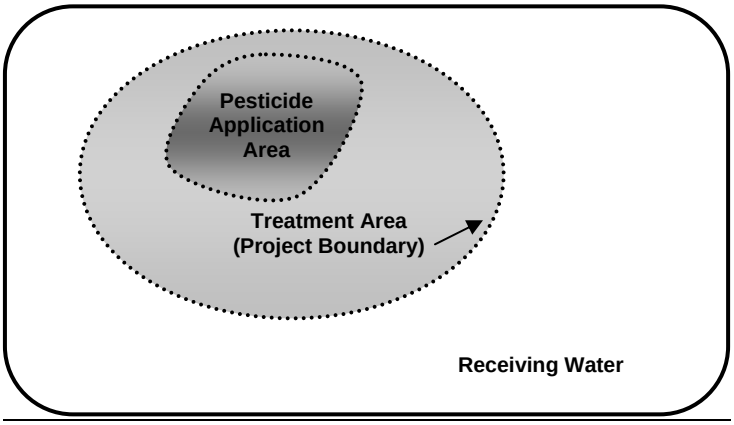

Figure 1.

The receiving water is defined as water outside of the treatment area. Outside the treatment area, compliance with water quality objectives is required within the receiving water at all times during and after the treatment event (Figure 1). During aquatic pesticide applications, an intentional lethal concentration of chemical is applied to water to control pests. The addition of the chemical results in a lowering of existing water quality. For effective treatment, a spatial and temporal zone of impact[5] corresponding to the treatment area is required, and the Regional Board acknowledges that existing uses and the level of water quality necessary to maintain those uses will not be protected within this zone during the treatment event[6].

If an aquatic pesticide project is allowed to occur, the Regional Board must find that the discharge complies with the antidegradation policies, and water quality objectives are restored within the treatment

[3] The application event is the time that the pesticide is directly introduced into the treatment area, and not the length of time that the introduced pesticide releases active or inert ingredients into the environment.
[4] Biocriteria objectives include species composition, non-degradation of aquatic communities, and any future biocriteria objectives adopted by the State or Regional Board.
[5] The Zone of Impact is a spatial and temporal zone that exists during, and is targeted by, aquatic pesticide treatments in which existing uses and the level of water quality necessary to maintain those uses will not be protected. The Zone of Impact ceases to exist once the treatment event is completed.
[6] The treatment event is the period during which the aquatic application is actively killing or controlling the target pest within the treatment area. It starts upon initiation of the application event and proceeds until the concentration of the aquatic pesticide is below that which can kill the target pest. During the treatment event, a spatial and temporal zone of impact exists in which water quality and beneficial uses are temporarily not protected.

area, within the shortest time reasonably possible after the application event, and within the receiving water during and after the treatment event.
The Regional Board acknowledges that water quality degradation may occur outside of the treatment area if pesticide residues escape the treatment area. While the presence of these residues may temporarily degrade the existing high water quality, the impact is not expected, nor will it be allowed, to violate water quality objectives that are established at levels protective of beneficial uses. Any water quality degradation within the receiving water is expected to be temporary, since pesticide residues escaping the treatment area breakdown through degradation mechanisms (volitalization, photolysis, etc.) and is not expected to persist beyond hours or days. Appropriate protection measures (application methods, compliance with pesticide label instructions, implementation of best management practices (BMPs)) shall be implemented during the project to ensure that any lowering of water quality is limited to the shortest possible time.

The Regional Board limits pesticide applications subject to the exemption to those conducted for purposes that serve the public interest (e.g., to restore natural resources or protect public health and safety or beneficial uses). State and federal regulations including the (1) Endangered Species Act, (2) Health and Safety Code, (3) Safe Drinking Water Act, and (4) Nonindigenous Aquatic Nuisance Prevention and Control Act compel state and federal agencies and public entities to (a) restore and preserve threatened and endangered species, (b) protect public health from disease-carrying vectors, (c) protect municipal drinking supplies, and (d) prevent damage to valuable aquatic habitats by controlling the spread of aquatic invasive species. Accomplishing these tasks effectively may require treating surface waters with aquatic pesticides.

Discharges of pesticide concentrations needed for effective resource management may cause waters to temporarily exceed established narrative or numeric water quality objectives (e.g., color, chemical constituents, toxicity, species composition). When an exemption to the prohibition on pesticide use in water is granted, a short-term or seasonal exemption to the prohibition on violating narrative or numeric water quality objectives may also be granted for specific water quality objectives. A longer-term exemption to the species composition objective may be granted on a project-by-project basis.

Provided aquatic pesticides are applied under the circumstances listed below, projects subject to this exemption will be considered consistent with the state antidegradation policy incorporated into this Basin Plan because such projects provide the maximum benefit to people of the State and are necessary to accommodate important economic or social development. Additionally, any degradation of water quality associated with the proposed aquatic pesticide use would only be temporary in nature and protective of beneficial uses provided the project complies with the exemption criteria specified below.

Findings Necessary to Grant Exemption
An exemption to the waste discharge prohibition for aquatic pesticide use may be granted by the Regional Board if all the following findings are made:

(a) The project is an eligible circumstance as described below.

(b) The project satisfies all the applicable exemption criteria.

Granting an exemption is at the discretion of the Regional Board. The Regional Board may deny an exemption request even though the project meets all the necessary project conditions and criteria. For example, this may occur as the Regional Board is considering the tradeoffs between use of pesticides and the actual and/or potential environmental impacts of an invasive species infestation. For instance, when considering a repeated application of an herbicide to address an infestation of aquatic invasive vegetation, the Regional Board may determine that it would be less harmful to let the infestation continue than to repeatedly apply pesticides.

Circumstances Eligible for Prohibition Exemption
Requests for exemption to this prohibition will be considered for the following circumstances:

Vector Control

Prohibition exemptions will be considered for the purposes of "Vector Control" where the proposed project is conducted to protect public health by eliminating pests with the direct application of larvicides to surface waters or aerial spraying of adulticides that have the potential to drift to surface waters.

Government agencies (e.g., local and county vector control districts) that apply aquatic pesticides for vector control to protect public health, must be a signatory to a Cooperative Agreement with the California Department of Public Health (DPH) pursuant to Section 116180 of the Health and Safety Code. (There are situations where vector control agencies contract their applications to private applicators. For these scenarios, the private applicators must be covered under the terms of the Cooperative Agreement and work under the authority and guidance of the vector control district.)

Individuals applying larvicides or adulticides must be either (1) a government agency employee (or authorized contractor) certified by DPH as a public health pesticide applicator or (2) a private applicator protecting public health on private lands who can provide documentation that he or she is licensed or certified, if required, by the County Agricultural Commissioner (CAC), or Director of DPR when there is no CAC.

Fisheries Management

Prohibition exemptions will be considered for "Fisheries Management" if the project proponent is the California Department of Fish and Game (DFG) or United States Fish and Wildlife Service (USFWS).

Aquatic pesticide applications implemented by the USFWS and the DFG for Fisheries Management may be considered for an exemption if the pesticide use is proposed to (1) restore and protect of threatened or endangered species, (2) control of fish diseases where the failure to treat could result in significant damage to fisheries resources or aquatic habitat, or (3) elimination of species (as defined in CA Fish and Game Code § 2118), where competition or predation from such species threatens native fish populations, or populations of other organisms (includes rare, unique, sensitive, or candidates for listing as endangered or threatened species).

The Regional Board may, on a project-by-project basis, grant an exemption for the use of fish toxicants in other kinds of fisheries management activities, when the DFG or the USFWS can provide the necessary justification for allowing a temporary lowering of water quality consistent with the provisions of the federal Antidegradation Policy (contained in 40 CFR § 131.12) and State Board Resolution No. 68-16.

Controlling Aquatic Invasive Species (AIS) or Other Harmful Species

Prohibition exemptions will be considered for "Controlling AIS or Other Harmful Species" if the use of aquatic pesticides is to protect public health and safety, the environment, or for other situations described below. Projects proposed for these circumstances will have different criteria depending on whether the projects are considered as emergency, time sensitive, or projects that are neither emergencies nor time sensitive.

Emergency Projects. Emergency Projects are those undertaken in response to an emergency as set forth in Public Resource Code section 21060.3; or projects that meet the CEQA definition of Emergency Projects set forth in CEQA Guidelines 15269(a)(b)(c) and require immediate action to control the pest of concern.

Time Sensitive Projects. For Time Sensitive Projects proposed for purposes of AIS control, the project proponent must demonstrate that the decision to apply aquatic pesticides is in compliance with an adopted Aquatic Invasive Species Management Plan. The AIS of concern must be affecting a water body where that species is not already established. The AIS must be recognized as a species of concern by the Aquatic Nuisance Species Task Force, listed as a Restricted Animal in California Administrative Code Title 14, section 671, listed as an Injurious Wildlife Species in the Lacey Act (50 CFR 16.11-16.15), addressed in the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990, listed as a Noxious Weed Species in either Title 3, Section 4500 of the California Department of Food and Agriculture, Federal Noxious Weed Act. P.L. 93-629, or is a dreissenid mussel as addressed in section 2301 of the Fish and Game code. The project proponent must be a state or federal agency with the legal authority to control aquatic invasive species as identified in the January 2008 (as amended) California Aquatic Invasive Species Management Plan, Appendices B and C.

For Time Sensitive Projects not involving AIS that are proposed to protect drinking water supplies, water distribution system, and flood control channels, the project proponent must be (1) the public agency mandated to protect such facilities, or (2) a private entity (e.g., a homeowners association, private water utility) that has control over the financing for, or the decision to perform, aquatic pesticide applications.

Projects That Are Neither Emergencies Nor Time Sensitive
For non-Emergency and non-Time Sensitive projects proposed for purposes of AIS control, the project proponent must demonstrate that the decision to apply aquatic pesticides is in compliance with an adopted Aquatic Invasive Species Management Plan. The project proponent must be a state or federal agency, with the legal authority to implement AIS control projects as identified in the California Aquatic Invasive Species Management Plan, Appendices B and C.

For non-Emergency and non-Time Sensitive projects proposed for purposes **not** involving AIS that are proposed to protect drinking water supplies, water distribution system, navigation, agricultural irrigation, and flood control channels, the project proponent must be (1) the public agency mandated to protect such facilities, or (2) a private entity (e.g., a homeowners association, private water utility) that has control over the financing for, or the decision to perform, aquatic pesticide applications.

Exemption Criteria for Aquatic Pesticide Use
Aquatic pesticide use proposed under the circumstances listed above may be considered for an exemption to the waste discharge prohibition for aquatic pesticides. Project proponents that receive a prohibition exemption must obtain coverage under an applicable permit, such as an individual or general NPDES permit or WDRs, or a waiver of WDRs issued by the State or Regional Water Board. Project proponents that receive a prohibition exemption must apply pesticides consistent with label instructions approved by the United States Environmental Protection Agency (USEPA) under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) and any Use Permits issued by the CAC which incorporate permit conditions recommended by the Department of Pesticide Regulation and the California Department of Public Health.

Project implementation, with its associated control measures and compliance monitoring, must demonstrate compliance with Basin Plan Water Quality objectives, effluent limitations, and receiving water limitations, which must be maintained (a) in the receiving water at all times during and after the treatment event, and (b) within the treatment area after completion of the aquatic pesticide treatment event. (Exemptions to the prohibition on violating narrative or numeric water quality objectives may be granted for specific water quality objectives. See Chapter 3 for project-specific water quality objectives or receiving water limitations that apply to fisheries management projects using rotenone.)

An exemption request must be submitted to the Water Board and contain the following information acceptable to the Regional Board. [7]

1. Project Information to include:

    a. Project description including, but not limited to, proposed schedule, duration, name of pesticide, method and rate of application, spatial extent, water body, control/mitigation measures to be used, contact information.

    b. Purpose and need for project.

    c. The chemical composition of the pesticide to be used, including inert ingredients if available from the manufacturer.

    d. Communication and notification plan to be implemented before, during and after the project. The plan will include documented measures to notify potentially affected parties who may use the potentially affected water for any beneficial use. The notification plan must include any associated water use restrictions or precautions. Project proponents will provide potable drinking water where necessary and shall obtain any necessary permits from CDPH and NDEP for supply of potable drinking water.

        For projects conducted in an ONRW (e.g. Lake Tahoe) the following additional requirements apply to project proponents:

        i. Provide via certified mail, or equivalent, notice of the proposed pesticide project to water purveyors whose source water relies on the surface water and/or groundwater wells designated under the direct influence of the surface water.

        ii. Provide to the Regional Board comments written from, and written responses to, the water purveyors notified pursuant to d.i., above.

        iii. An estimate of the maximum foreseeable concentrations of pesticide components in any surface water intake used for drinking water supplies.

        Public notification requirements may be waived where project proponent is an agency signatory to Cooperative Agreement with DPH and evidence is provided of notification exemption.

    e. Spill contingency plan to address proper transport, storage, spill prevention and cleanup.

2. Notice of Intent for coverage under the appropriate State Board or Regional Board permit or a report of waste discharge for pesticides or pesticide use not covered under an existing State Board or Regional Board NPDES General Permit for aquatic pesticide discharges.

3. California Environmental Quality Act (CEQA) Documentation – The lead agency is required to conduct the appropriate environmental analysis and the project proponent shall submit the certified environmental document with the exemption request. If the project lead is a federal agency then it must prepare a CEQA equivalent document.

4. Information to comply with section 5.3 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays and Estuaries of California (State Implementation Plan or SIP). This information is **only** required if the proposed application of aquatic pesticides contains priority pollutants. Projects involving discharges that contain priority pollutants require a short-term or seasonal exception from meeting the priority pollutant criteria/objectives prior to treatment of surface

[7] The Regional Board will consult with the Nevada Division of Environmental Protection (NDEP) when a project affects interstate waters that exist within, or flow to, the State of Nevada. The Regional Board will consult with the California Department of Public Health (CDPH) when reviewing exemption requests that may affect surface drinking water intakes.

waters with aquatic pesticides. Section 5.3 of the SIP allows the Regional Board, on a case-by-case basis, to consider and grant such short-term or seasonal exceptions.)

5. Information (evidence the project will benefit people of California, a management plan detailing control measures to avoid and mitigate adverse impacts, compliance with use restrictions, etc.) that allows the Regional Board to find that the proposed aquatic pesticide application complies with federal and state anti-degradation policies. (This request for information is waived for Vector Control projects and for projects proposed in response to an emergency as defined by Public Resources Code 21060.3. because these project types underwent antidegradation analysis for adoption of the exemption criteria into the Basin Plan.)

6. Information that the project satisfies the additional exemption criteria for the particular circumstance as specified below.

Exemption Criteria for Vector Control

The Regional Board herein grants an exemption to the prohibition on discharge of pesticides to surface or ground waters where the project proponent can verify that the project meets the following criteria, which must be submitted with an exemption request to the Regional Board. The Regional Board finds that Vector Control projects comply with state and federal anti-degradation policies, since (1) these projects are implemented in the best interest of people of California for the purposes of the protection of public health, and (2) these projects limit water quality impacts and provide reasonable protection of beneficial uses by satisfying the below-listed exemption criteria nos. 1 and 2.

1. The planned treatment will result in the minimum discharge of chemical substances that can reasonably be expected for an effective treatment.

2. Aquatic pesticide applications must minimize impacts to beneficial uses by implementing BMPs to limit the effects of the pesticide to the shortest time and within the smallest area necessary for project success.

Exemption Criteria for Fisheries Management

Project proponents seeking a prohibition exemption to use aquatic pesticides for "Fisheries Management" must satisfy the criteria listed in Chapter 4, section 4.9 titled Control Measures for Rotenone Use and Other Fish Toxicants" and must submit this information with an exemption request to the Regional Board.

Exemption Criteria for Controlling Aquatic Invasive Species (AIS) and Other Harmful Species

Emergency Projects. The Regional Board herein grants an exemption to the prohibition on discharge of pesticides to surface or ground waters where the project proponent can verify that (1) the project meets the following criterion, which must be submitted with an exemption request, and (2) a Notice of Exemption (NOE) has been filed, as required under CEQA. Coverage under the appropriate permit must be sought by the project proponent within 30 days after the NOE is filed.

For projects implemented by state or local agencies, the agency must demonstrate that the project meets the CEQA Emergency Project definition set forth in Public Resource Code section 21060.3 (same as CEQA Guidelines section 15359); or that the project meets the CEQA definition of Emergency Projects set forth in CEQA Guidelines 15269(a)(b)(c). For these state or local agency projects the state or local agency will file the NOE. If a federal agency, such as USFWS, is the project proponent, the federal agency must provide evidence that the pesticide application meets the CEQA emergency definition. For these federal projects, the Regional Board will file the NOE.

The Regional Board retains authority to require project and post-project monitoring and reporting and retains authority to take enforcement action where appropriate to restore/recover water quality or beneficial uses.

Time Sensitive Projects. In the exemption request, the project proponent must demonstrate to the Regional Board the time sensitive nature of the project by demonstrating the existing or imminent deleterious effects of an infestation and the importance of an expedited action. The Regional Board will

respond within ten days. The Regional Board may then grant the prohibition exemption where the project proponent can verify the project meets the following criteria, which must be submitted with the exemption request. (The Regional Board may expedite granting of the exemption and require that compliance with criteria be demonstrated within ten days of the prohibition exemption being granted.)

1. Demonstration that non-chemical measures were evaluated and found inappropriate/ineffective to achieve the project goals. (Alternatives to pesticide use must be thoroughly evaluated and implemented when feasible (as defined in CEQA Guideline 15364: "Feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.)).

2. A plan detailing mitigation and management measures must be submitted and implemented. The Plan must incorporate control measures to limit adverse impacts to the shortest time necessary for project success. The Plan should include measures to remove and dispose of dead biomass which are adequate to protect water quality and beneficial uses. (Removal of biomass may not be necessary in situations where recovering the dead biomass creates a greater potential to impact water quality.)

3. The planned treatment protocol will result in the minimum discharge of chemical substances that can reasonably be expected for an effective treatment.

4. Monitoring and reporting program must be submitted and implemented to evaluate impacts and verify restoration of water quality in the treatment area. The program must be sufficient to determine compliance with criteria no. 3.

   The project monitoring program must include pre- and post-project sampling of water, sediment, and biota to determine if toxicity persists as a result of project implementation. At the discretion of the Regional Board, due to the urgency of Time Sensitive projects, the collection and analysis of sediment and biological samples may be waived and/or a reference site may be used to represent pre-project conditions.

   Unless waived by the Regional Board, the project proponent shall develop a biological monitoring program to evaluate (a) the magnitude and extent of potential impacts to, and (b) the post-project recovery of non-target organisms and rare/threatened or endangered species. The biological monitoring program must be based on an appropriate study design, metrics, and performance criteria to evaluate restoration of aquatic life as specified below in criterion no. 7. This requirement may be waived at the discretion of the Regional Board where the Regional Board finds that there is no significant threat to non-target aquatic organisms.

Projects That Are Neither Emergencies Nor Time Sensitive. An exemption to the prohibition on discharge of pesticides to surface or ground waters may be granted by the Regional Board for Projects That Are Neither Emergencies or Time Sensitive where the project proponent can verify that the project meets both the above-listed criteria nos. 1 through 4 and the following additional criteria, which must be submitted with the exemption request.

5. Purpose and Goals statement that (a) demonstrates that the target organism is a primary cause of the problem being addressed, and (b) provides evidence that the proposed application of pesticides will accomplish the project goals.

6. A description of the failure of non-chemical measures to effectively address the target organisms. The description will include either (1) evidence that non-chemical efforts failed to address target organisms or (2) justification, accepted by Regional Board, of why non-chemical measures were not employed or are not feasible (CEQA Guideline 15364) to achieve the treatment goals.

7. A monitoring and reporting program accepted by the Regional Board, will be followed to assess the effects of treatment on surface and ground waters, and on bottom sediments if specified by the

Regional Board. The monitoring and reporting program must include, but not be limited to, monitoring sites, analytes, methods, frequencies, schedule, quality assurance, and measurable objectives to determine if the project goals were achieved (e.g., acreage treated, reduction in biomass of target species, improved water quality). The monitoring plan must identify a dedicated budget and specify the entity/person(s) responsible for the monitoring.

The pre-project biological monitoring program and the monitoring, reporting, and mitigation program[8] for non-target communities shall be peer-reviewed[9] by independent experts. The peer reviewers shall be proposed by project proponent(s) and shall be mutually agreeable to both the project proponent(s) and the Regional Board.

The biological monitoring program must be based on an appropriate study design, metrics, and performance criteria to evaluate restoration of non-target biological life potentially affected by the pesticide application. Monitoring of biota should include appropriate indicators (e.g., macroinvertebrates, aquatic plants). The indices used in the assessment must be commonly accepted by the scientific community and accepted by the Regional Board.

For projects with the goal of removing an invasive species community, project proponent shall consider using a reference site to gauge restoration of the non-target species to desired conditions or establish project goals and objectives. The recovery target will be measured using appropriate indicators (e.g., macroinvertebrates, aquatic plants) that demonstrate restoration of non-target species to levels equal to or better than pre-treatment conditions (a reference site may be used to represent pre-project conditions).

When applicable, biological monitoring shall be designed, and conducted as long as needed, no less than annually, to effectively demonstrate that non-target macroinvertebrate populations have been fully restored. Fully restored means that the structure and function of non-target macroinvertebrate communities have returned to conditions that reflect pre-project conditions. Function will be judged by metrics and indices related to trophic levels (e.g., functional feeding groups) and productivity (e.g., abundance, biomass). Structure will be judged based on metrics and indices related to richness and diversity (e.g., taxa richness, multivariate O/E (observed/expected) model predictions, multivariate ordinations) and presence of sensitive and rare taxa. This definition of "fully restored" shall be provided to the peer reviewers prior to peer review of the monitoring and reporting program, with instructions to determine whether the monitoring design is capable of determining whether full restoration has been achieved.

Within two years of the last treatment for a specific project, a qualified biologist(s) representing the project proponent must assess the restoration of non-target aquatic life and benthic communities within the treated waters, and if, based on the monitoring data, the evidence demonstrates, certify in writing that all affected non-target biological communities have been fully restored. The certification shall be accompanied by a report detailing the pre-project and post-project monitoring, including detailed explanation of the assessment methods used and the rationale for the certification. Macroinvertebrates shall be identified and classified, and data provided in electronic formats using conventions acceptable to the Regional Board.

If non-target biological communities are not fully restored after two years, the project proponent must conduct continued annual monitoring and implement the proposed mitigation measures until the Regional Board accepts the certification.

[8] The mitigation program must examine potential measures to facilitate the restoration of non-target species to pre-project abundance and diversity. The mitigation program must include a discussion of mitigation measures included and those that were considered but rejected. The project proponent must justify why these measures were rejected as feasible mitigation measures. The requirement to implement mitigation measures may be waived during post-project recovery at the discretion of the Regional Board.

[9] The Regional Board can exempt project proponents from the requirement of preparing an externally peer reviewed monitoring and reporting, and mitigation program (e.g., project applicant proposes the use of standardized peer reviewed monitoring protocols).

The Regional Board acknowledges that projects may occur where the non-target communities do not fully recover to pre-project levels. After five years of annual post-project monitoring, the project proponent may petition the Regional Board to release it from annual monitoring and reporting and mitigation obligations. Such petitions must include: (1) results of mitigation efforts, (2) monitoring trends demonstrating maturity of an asymptotic recovery, and (3) evidence that the ability to attain full recovery has been significantly affected by natural environmental factors (e.g., fires, floods, drought) or catastrophic events (e.g., chemical spills) during the years of monitoring. Annual monitoring shall continue unless and until the Regional Board rescinds the monitoring requirements.

Chapter 3 Adopted Language – Pesticide Basin Plan Amendment

The following changes apply to Chapter 3 of the Basin Plan available at http://www.waterboards.ca.gov/lahontan/water_issues/programs/basin_plan/references.shtml. Deletions to language are shown in strike-out and additions are in underline.

Instructions regarding edits and page number locations are shown in 12 point Times New Roman Font in bold type.

Chapter 3, pp. 3-2, 3-3

Water Quality Objectives for Surface Waters

Water quality objectives for surface waters are divided into the three categories of:

1. **Water Quality Objectives Which Apply to All Surface Waters.**
   Listed alphabetically below, these narrative and numerical water quality objectives apply to **all** surface waters (including wetlands) within the Lahontan Region:

   Ammonia
   Bacteria, Coliform
   Biostimulatory Substances
   Chemical Constituents
   Chlorine, Total Residual
   Color
   Dissolved Oxygen
   Floating Materials
   Oil and Grease
   Non-degradation of Aquatic Communities and Populations
   ~~Pesticides~~
   pH
   Radioactivity
   Sediment
   Settleable Materials
   Suspended Materials
   Taste and Odor
   Temperature
   Toxicity
   Turbidity

Chapter 3, pp. 3-3

3. ***Water Quality Objectives for Fisheries Management Activities Using the Fish Toxicant Rotenone***
   Rotenone is a fish toxicant presently used by the California Department of Fish and Game (DFG) and the United States Fish and Wildlife Service (USFWS) for fishery management purposes. (See detailed discussions later in this Chapter and in Chapter 4.) Additional water quality objectives pertinent to rotenone treatments are: Color, ~~Pesticides,~~ Chemical Constituents, ~~Species Composition~~, and Toxicity.

Chapter 3, pp. 3-5

Pesticides

~~For the purposes of this Basin Plan, pesticides are defined to include insecticides, herbicides, rodenticides, fungicides, piscicides and all other economic poisons. An economic poison is any substance intended to prevent, repel, destroy, or mitigate the damage from insects, rodents, predatory animals, bacteria, fungi or weeds capable of infesting or harming vegetation, humans, or animals (CA Agriculture Code, 12753).~~

~~Pesticide concentrations, individually or collectively, shall not exceed the lowest detectable levels, using the most recent detection procedures available. There shall not be an increase in pesticide concentrations found in bottom sediments. There shall be no detectable increase in bioaccumulation of pesticides in aquatic life.~~

~~Waters designated as MUN shall not contain concentrations of pesticides or herbicides in excess of the limiting concentrations specified in Table 64444-A of Section 64444 (Organic Chemicals) of Title 22 of the California Code of Regulations which is incorporated by reference into this plan. This incorporation-by-reference is prospective including future changes to the incorporated provisions as the changes take effect.~~

Chapter 3, pp. 3-10

Water Quality Objectives for Fisheries Management Activities Using the Fish Toxicant Rotenone

Rotenone is a fish toxicant presently used by the California Department of Fish and Game (DFG) and the United States Fish and Wildlife Service (USFWS) for fishery management purposes. (See Chapter 4 for a more complete discussion of this topic.)

The application of rotenone ~~solutions~~ and the detoxification agent potassium permanganate can cause several water quality objectives to be temporarily exceeded, both inside and outside of project boundaries. (Project boundaries are defined as encompassing the treatment area, the detoxification area, and the area downstream of the detoxification station up to a thirty-minute travel time.)

~~Additional narrative water quality objectives applicable to rotenone treatments are: color, pesticides, toxicity, and species composition~~. The Basin Plan (see Chapter 4) contains prohibitions against discharges of waste that result in violation of narrative or numeric water quality objectives. Conditional ~~variances~~ exemptions to these ~~objectives~~ prohibitions may be granted by the Regional Board~~'s~~ or its Executive Officer, if so delegated, for rotenone applications by the DFG or the USFWS, provided that such projects comply with the conditions described below and with the ~~conditions~~ criteria described in Chapter 4 ~~(Implementation)~~ under the section entitled ~~"Rotenone Use In Fisheries Management"~~ "Exemption Criteria for Fisheries Management." The following project-specific water quality objectives or receiving water limitations also apply to fisheries management projects using rotenone during and immediately following treatment.

Color

The characteristic purple discoloration resulting from the discharge of potassium permanganate shall not be discernible more than two miles downstream of project boundaries at any time. Twenty-four (24) hours after shutdown of the detoxification operation, no color alteration(s) resulting from the discharge of potassium permanganate shall be discernible within or downstream of project boundaries.

~~Pesticides~~ Chemical Constituents

Chemical residues resulting from rotenone treatment must not exceed the following limitations:

1. The concentration of naphthalene outside of project boundaries shall not exceed 25 ug/liter (ppb) at any time.

2. The concentration of rotenone, rotenolone, trichloroethylene (TCE), xylene, or acetone (or potential trace contaminants such as benzene or ethylbenzene) outside of project boundaries shall not exceed the detection levels for these respective compounds at any time. "Detection level" is defined as the minimum level that can be reasonably detected using state-of-the-art equipment and methodology.

3. After a two-week period has elapsed from the date that rotenone application was completed, no chemical residues resulting from the treatment shall be present at detectable levels within or downstream of project boundaries.

4. No chemical residues resulting from rotenone treatments shall exceed detection levels in ground water at any time.

~~Species Composition~~

~~The reduction in fish diversity associated with the elimination of non-native game fish or exotic species may be part of the project goal, and may therefore be unavoidable. However, non-target aquatic populations (e.g., invertebrates, amphibians) that are reduced by rotenone treatments are expected to repopulate project areas within one year. Where species composition objectives are established for specific water bodies, or hydrologic units, or ecoregions, the established objective(s) shall be met for all non-target aquatic~~

~~organisms within one year following rotenone treatment. For multi year treatments (i.e., when rotenone is applied to the same water body during two or more consecutive years), the established objective(s) shall be met for all non-target aquatic organisms within one year following the final rotenone application to a given water body.~~

~~Threatened or endangered aquatic populations (e.g., invertebrates, amphibians) shall not be adversely affected. The DFG shall conduct pre-project monitoring to prevent rotenone application where threatened or endangered species may be adversely affected.~~

Toxicity

Chemical residues resulting from rotenone treatment must not exceed the limitations listed above for ~~pesticides~~ chemical constituents.

Chapter 4 Adopted Language – Pesticide Basin Plan Amendment

The following changes apply to Chapter 4 of the Basin Plan available at http://www.waterboards.ca.gov/lahontan/water_issues/programs/basin_plan/references.shtml. Deletions to language are shown in strike-out and additions are in underline. Instructions regarding edits, page numbers, and relocation placement are shown type in 12 point Times New Roman Font in bold type.

Chapter 4, pp. 4.9-21 – 25

~~***Recommended Future Actions for Hatcheries***~~

~~The Regional Board should be advised of routine and other applications of pesticides or other substances potentially containing toxic substances.~~

Rotenone Use in Fisheries Management

The California Department of Fish and Game (DFG) and the United States Fish and Wildlife Service (USFWS) ~~often~~ occasionally has cause to eliminate competitors, predators, and otherwise undesirable fish populations as part of ~~its~~ their fishery management programs. Such management programs may include the restoration or protection of threatened or endangered species, control of fish diseases, elimination of ~~prohibited~~ restricted species, actions to increase the abundance of desirable sport fish species~~,~~ and actions to establish and maintain wild trout stocks.

In carrying out ~~its~~ their management programs, the DFG or the USFWS occasionally ~~often~~ find~~s~~ it necessary to completely eliminate existing fish populations in designated areas; this practice provides ~~optimum~~ conditions for propagation of healthy, desirable fish. The DFG has determined that in certain situations the use of rotenone, a fish toxicant, is the only effective, practical method of achieving this objective.

The discharge of rotenone formulations and the detoxifying agent, potassium permanganate, can violate water quality objectives and adversely affect beneficial uses of water. Impacts may occur both within project boundaries and outside of those boundaries. (Project boundaries are defined as encompassing the treatment area, the detoxification area, and the area downstream of the detoxification station up to a thirty-minute travel time.) ~~Outside of project boundaries, impacts are expected to be minimal. Trace amounts of rotenone or other compounds may escape project boundaries, but these residues do not tend to persist beyond one or two days, and beneficial uses are not expected to be impaired in the long-term.~~

Rotenone treatment is typically followed by the addition of potassium permanganate, which is a strong oxidant used to detoxify the active ingredient(s). ~~In the past, some potassium permanganate has occasionally escaped project boundaries, and has sometimes been visible as much as one or two miles below project boundaries (~~Potassium permanganate may cause ~~has~~ a characteristic purple or brown color to waters being detoxified and downstream receiving waters). Unexpected fish kills have also occurred downstream of project boundaries due, at least in part, to permanganate toxicity. However, potassium permanganate decomposes quickly in water and does not persist for more than a day following the end of detoxification. At these levels, potassium permanganate is not considered a health threat to humans.

In addition to the active ingredient, liquid rotenone formulations also contain “inert” ingredients (e.g., carriers, solvents, dispersants, emulsifiers), and may also contain, in trace amounts, organic contaminants. Such “inert” ingredients and contaminants may include naphthalene, methylnaphthalene, xylene, acetone, trichloroethylene (TCE), benzene, and ethylbenzene.

~~Benzene is a known human carcinogen. TCE is a known animal carcinogen, and a suspected human carcinogen. Concentrations of these compounds in rotenone-treated water are expected to meet current drinking water standards. However, the Regional Board expects the DFG to make every reasonable effort to encourage the development of rotenone formulations containing less objectionable compounds, and to prepare annual progress reports.~~

~~Long-term impacts of rotenone use are distinct from short-term impacts. Long-term impacts normally last from two to six years and are expected to be limited to the area within project boundaries. Long-term~~

~~impacts result because the treatments are typically repeated at a given project site for several consecutive years, after which time the treated waters are restocked with fish. During this time, however, most or all fish have been eliminated from the project site. Other gill-breathing organisms (such as aquatic invertebrate and amphibian populations) are also impacted, but are expected to recover over time.~~

~~The long-term impacts therefore consist of a temporary loss of beneficial uses, specifically aquatic habitat and recreational fishing opportunities. In the case of endangered species restoration projects, permanent replacement of existing species with a threatened or endangered species is the project objective, and fishing opportunities for the existing species are permanently lost at the project site.~~

The use of rotenone and detoxifying agents has both short-term and long-term impacts. Short-term impacts (such as toxicity, discoloration, and odors) last only as long as chemical residues from the rotenone treatment persist. ~~These c~~Chemicals are introduced to the water during the treatment and detoxification process, but tend to decompose or volatilize in a matter of hours or days, depending on site conditions. Some chemical residues may be detectable for longer periods, particularly where standing water (i.e. lakes) is treated ~~up to two weeks~~. In addition to effects on aquatic life, short-term impacts can adversely affect aesthetics, recreation, and water supplies. Short-term impacts are generally limited to the area within project boundaries., ~~except on occasions when chemical residues escape beyond these boundaries.~~

Long-term impacts of rotenone use are those that persist after the chemical residues have dissipated. Because rotenone is toxic to all gill-breathing animals, non-target aquatic invertebrates and amphibians are also killed. This may adversely affect non-target endemic species, including undiscovered species or threatened or endangered species, as well as instream assemblages of more common species. The time period for full recovery of instream invertebrate assemblages is unknown, and it is possible that endemic species with limited ranges could be lost entirely. Long-term impacts also result where treatments are repeated at a given project site for multiple years. During this time, most or all fish are eliminated from the project site causing a loss of fishing opportunities until fish are re-stocked after a multi-year project is completed.

As described above, the application of rotenone to surface waters by the DFG or the USFWS will result in a temporary lowering of water quality. The State Board's "Statement of Policy with Respect to Maintaining High Quality of Waters in California" (Resolution No. 68-16) directs that whenever the existing quality of waters is better than standards established in water quality objectives, the existing level of quality shall be maintained. ~~Deterioration of~~ ~~w~~Water quality degradation is permissible only if the Regional Board finds that such a change will be consistent with maximum benefit to the people of the State. Similarly, the ~~F~~federal Antidegradation Policy (40 CFR § 131.12) dictates that water quality shall be preserved unless ~~deterioration~~ degradation is necessary to accommodate important economic or social development.

The temporary ~~deterioration~~ degradation of water quality due to the use of rotenone by the DFG or the USFWS, may be ~~is~~ justifiable in certain situations. The Regional Board recognizes that the State and federal Endangered Species Acts require the restoration and preservation of threatened and endangered species. The Regional Board also recognizes that situations may arise where outbreaks of fish disease or the threat presented by prohibited or exotic species may require immediate action to prevent serious damage to valuable fisheries resources and aquatic habitat. These resources are of important economic and social value to the people of the State, and the transitory degradation of water quality and ~~short-term~~ impairment of beneficial uses that would result from rotenone application may be ~~is therefore~~ justified, provided suitable measures are taken to protect water quality within and downstream of the project area.

~~Pursuant to federal regulations (40 CFR § 131.13), the Regional Board may grant variances to water quality objectives under certain circumstances. Narrative water quality objectives applicable to rotenone treatments include: toxicity, pesticides, color, and species composition (see Chapter 3, "Water Quality Objectives.")~~

~~In 1990, the Regional Board adopted Resolution No. 6-90-43 to allow the conditional use of rotenone by the DFG in the Lahontan Region. The Resolution granted authority to the Regional Board's Executive Officer to waive waste discharge requirements and reports of waste discharge for rotenone application projects meeting the conditions listed below. The Resolution also directed the Executive Officer to execute a~~

~~Memorandum of Understanding with the DFG to facilitate the implementation of rotenone projects within the Lahontan Region. The MOU was executed on July 2, 1990.~~

Control Measures for Rotenone Use and Other Fish Toxicants

~~The Regional Board's Executive Officer may grant conditional variances from applicable water quality objectives for DFG projects involving the use of rotenone, subject to the following conditions. A variance will not be granted for any project that fails to meet these conditions. If a variance is denied, any discharge of rotenone formulation or potassium permanganate may be subject to enforcement action by the Regional Board.~~

The Regional Board may grant the conditional use of rotenone by the DFG or the USFWS, provided the rotenone application is proposed for purposes of (1) the restoration and protection of threatened or endangered species (2) the control of fish diseases where the failure to treat could result in significant damage to fisheries resources or aquatic habitat or (3) the elimination of species (as defined in CA Fish and Game Code § 2118), where competition or predation from such species threatens native fish populations, or populations of other organisms (includes rare, unique, sensitive, or candidates for listing as endangered or threatened species).

The Regional Board may, on a project-by-project basis, grant exemptions for the use of fish toxicants in other kinds of fisheries management activities, when the DFG or the USFWS can provide the necessary justification for allowing a temporary lowering of water quality (i.e. degradation) according to the provisions of the federal Antidegradation Policy (contained in 40 CFR § 131.12) and State Board Resolution No. 68-16.

Before the Regional Board considers an exemption to the prohibition against discharges of pesticides to surface waters, the project proponent must submit a project proposal that satisfies the below criteria. A prohibition exemption will not be granted for any project that fails to meet these criteria.

The following strike-out language is relocated above to the first two paragraphs of *Control Measures for Rotenone Use*. A few minor edits to the relocated language have been made. Text highlighted in gray has been omitted and not relocated.

~~**Conditions:**~~

~~1. The purpose of the proposed project must be one of the following:~~

~~(a) The restoration and protection of threatened or endangered species.~~

~~(b) The control of fish diseases where the failure to treat could result in significant damage to fisheries resources or aquatic habitat.~~

~~(c) The elimination of prohibited species (as defined in CA Fish and Game Code § 2118), where competition or predation from such species threatens valuable sport fish or native fish populations, or populations of other valuable organisms.~~

~~The Regional Board may, on a project-by-project basis, grant exceptions variances for the use of fish toxicants in other kinds of fisheries management activities, when the DFG can provide the necessary justification for allowing a temporary lowering of water quality according to the provisions of the Federal Antidegradation Policy (contained in 40 CFR § 131.12) and State Board Resolution No. 68-16.~~

~~2~~1. Chemical residues resulting from rotenone treatment must not exceed the narrative or numerical limitations established in Chapter 3 of this Basin Plan, under the section entitled "Water Quality Objectives For Fisheries Management Activities Using the Fish Toxicant Rotenone."

~~3~~. ~~Within two years of the last treatment for a specific project, a fisheries biologist or related specialist from the DFG must assess the restoration of applicable beneficial uses to the treated waters, and certify in~~

~~writing that those beneficial uses have been restored. A project will be considered to have been completed upon written acceptance by the Regional Board's Executive Officer of such certification~~

~~4. Based on information and project plans submitted by the DFG, the Regional Board's Executive Officer must determine that the proposed project will meet all applicable provisions (including subsequent amendments or revisions) of this Basin Plan, the DFG's Environmental Impact Report *Rotenone Use for Fisheries Management* (1994), and the Memorandum of Understanding between the Regional Board and the DFG regarding rotenone use. Whenever the language contained in the above-mentioned documents may overlap, the requirements that will provide the most restrictive protection of water quality shall apply. Furthermore, the Regional Board's Executive Officer must determine that the project meets all of the following additional criteria:~~

~~(a) The limitations on chemical residue levels referenced in Condition # 2 (above) can be met.~~

~~(b)~~2. The planned treatment protocol will result in the minimum discharge of chemical substances that can reasonably be expected for an effective treatment.

~~(c)~~3. Chemical transport, spill contingency plans, and application methods will adequately provide for protection of water quality.

~~(d)~~4. ~~Suitable measures will be taken to notify the public, and potentially affected residents.~~ A public notification plan accepted by the Executive Officer.

~~(e)~~5. Suitable measures will be taken to identify potentially affected sources of potable surface water intakes and ground water wells~~intakes~~, and to provide potable drinking water where necessary.

~~(f) A suitable monitoring program will be followed to assess the effects of treatment on surface and ground waters, and on bottom sediments.~~

~~(g) For each project, the DFG has satisfied the requirements of the California Environmental Quality Act (CEQA).~~

~~(h)~~6. The chemical composition of the rotenone formulation has not changed significantly (based on analytical chemical scans to be performed by the DFG or USFWS on each formulation lot to be used) in such a way that potential hazards may be present which have not been addressed.

~~(i)~~7. Plans for disposal of dead fish are adequate to protect water quality.

8. To promote decomposition and minimize persistence of active ingredients and detoxifying agents, rotenone shall not be applied to waters when the water temperature is below five (5) degrees celsius.

9. Pre-project monitoring and mitigation plan to determine the presence of and to protect threatened or endangered species. Where threatened or endangered species are present, appropriate mitigation measures (e.g., temporary or permanent relocation) shall be implemented to lessen adverse effects.

10. A monitoring and reporting program and a mitigation program[1], accepted by the Regional Board, will be followed to assess the effects of treatment on surface and ground waters, and on bottom sediments if specified by the Regional Board. The monitoring plan shall specify, but not be limited to: chemical monitoring methods (for active ingredients, detoxifying agents, and any pesticide "inert" ingredients of concern), biological monitoring methods (pre-project and post-project bioassessment surveys at appropriate test and control sites, sufficient to characterize project impacts and recovery considering spatial and temporal variability), sampling locations, index period(s), frequencies,

[1] The mitigation program must examine potential measures to facilitate the restoration of non-target species to pre-project abundance and diversity. The mitigation program must include a discussion of mitigation measures included and those that were considered but rejected. The project proponent must justify why these measures were rejected as feasible mitigation measures. The requirement to implement mitigation measures may be waived during post-project recovery at the discretion of the Regional Board.

schedule, and QA/QC procedures.

Both the pre-project monitoring and mitigation plan for T&E species, and the monitoring, reporting, and mitigation program for non-target communities shall be peer-reviewed by independent experts. The peer reviewers shall be proposed by the DFG and/or USFWS and shall be mutually agreeable to both the project proponent(s) and the Regional Board.[2]

The biological monitoring plan must be based on an appropriate study design, metrics, and performance criteria to evaluate restoration of aquatic life. The indices used in the assessment must be commonly accepted by the scientific community and accepted by the Regional Board. Biological monitoring shall be designed, and conducted as long as needed, to effectively demonstrate that non-target macroinvertebrate populations have been fully restored. Fully restored means that the structure and function of non-target macroinvertebrate communities have returned to conditions that reflect pre-project conditions. Function will be judged by metrics and indices related to trophic levels (e.g., functional feeding groups) and productivity (e.g., abundance/biomass). Structure will be judged based on metrics and indices related to richness and diversity (e.g., taxa richness, multivariate O/E (observed/expected) model predictions, multivariate ordinations) and presence of sensitive and rare taxa. This definition of "fully restored" shall be provided to the peer reviewers prior to peer review of the monitoring and reporting plan, with instructions to determine whether the monitoring design is capable of determining whether full restoration has been achieved.

Within two years of the last treatment for a specific project, a qualified biologist(s) from the DFG or USFWS must assess the restoration of non-target aquatic life and benthic communities within the treated waters, and if, based on the monitoring data, the evidence demonstrates, certify in writing that all affected non-target biological communities have been fully restored. The certification shall be accompanied by a report detailing the pre-project and post-project monitoring, including detailed explanation of the assessment methods used and the rationale for the certification. Macroinvertebrates shall be identified and classified, and data provided in electronic formats using conventions acceptable to the Regional Board. A project will be considered complete only upon written acceptance by the Regional Board of such report and certification.

If non-target biological communities are not fully restored after two years, the project proponent must conduct continued annual monitoring and implement the proposed mitigation measures until the Regional Board accepts the certification.

The Regional Board acknowledges that projects may occur where the non-target communities do not fully recover to pre-project levels. After five years of annual post-project monitoring, the project proponent may petition the Regional Board to release it from annual monitoring and reporting and mitigation obligations. Such petitions must include: (1) results of mitigation efforts, (2) monitoring trends demonstrating maturity of an asymptotic recovery, and (3) evidence that the ability to attain full recovery has been significantly affected by natural environmental factors (e.g., fires, floods, drought) or catastrophic events (e.g., chemical spills) during the years of monitoring. Annual monitoring shall continue unless and until the Regional Board rescinds the monitoring requirements.

~~The Regional Board recognizes that allowing rotenone use may have unavoidable adverse impacts. Some of these impacts could be mitigated in the long-term through the discovery or development of formulations whose "inert" ingredients (i.e., carriers, solvents, dispersants, and emulsifiers) have less objectionable properties, and which are free of objectionable contaminants. The DFG shall: (1) make every reasonable effort to encourage the development of such formulations, and (2) provide annual updates to the Regional Board (by December 31 of each calendar year) detailing DFG's progress and obstacles encountered during reformulation efforts.~~

[2] The Regional Board can exempt DFG or the USFWS from the requirement of the monitoring & reporting program and mitigation program being externally peer-reviewed.

Recommended Future Actions for Rotenone Use

1. In cooperation with the DFG or the USFWS, monitor projects involving the discharge of fish toxicants to determine impacts on water quality and beneficial uses.

2. In cooperation with the DFG or the USFWS, modify rotenone application, detoxification, and monitoring procedures, whenever measures are identified that will provide greater protection for water quality and beneficial uses.

3. In cooperation with other state and federal agencies, and private entities, encourage the ~~rapid~~ development of rotenone formulations which pose the lowest possible environmental hazards ~~to target species~~ while still achieving project goals. ~~containing less objectionable compounds~~.

4. In cooperation with other state and federal agencies, and private entities, encourage research to determine whether rotenone persists in stream sediment and, if so, what impact, if any, does it have on hyporheic invertebrates.

Sensitive Species and Biological Communities

Because of its great topographic, geologic and climatic diversity, and because of environmental changes over time which have created ecological islands which facilitate evolutionary change, the Lahontan Region supports a wide variety of plant and animal species and many biological community types. Numerous plant and animal species in the Region are listed as threatened or endangered under the federal Endangered Species Act and/or the California Endangered Species Act (CESA), or are candidates for such listing. Examples include the Lahontan and Paiute cutthroat trout, several kinds of desert pupfish, the Lake Tahoe shorezone plant Tahoe yellowcress, and springsnails which are restricted to a few springs in the Owens River watershed. These and many other sensitive species depend directly on aquatic or wetland habitats for survival. The Lahontan Region also includes water bodies which support rare or unique combinations of species (biological communities). Examples include the Grass Lake sphagnum bog in the Lake Tahoe Basin, the Mono Lake ecosystem, and the springs and wetlands in the Amargosa River watershed. In some cases, these communities have been given special recognition and protection, as U.S. Forest Service Research Natural Areas or Special Interest Areas, U.S. Bureau of Land Management Areas of Critical Environmental Concern, etc. Detailed information on sensitive species and communities in the Lahontan Region can be found in the Department of Fish and Game's (DFG's) Natural Diversity Database, which is updated on an ongoing basis. The Regional Board's Geospatial Waterbody System (GeoWBS) database can also provide information on the presence of sensitive species and communities in association with specific water bodies.

Aquatic and wetland habitats for many sensitive species have been degraded, impaired, or threatened by water diversions and/or the nonpoint source problems (mining, silviculture, livestock grazing, etc.) discussed elsewhere in this Chapter. ~~For example, nonpoint source pollution has contributed to the decreasing clarity of Lake Tahoe and this decreased clarity is believed to be a threat to its unique deepwater macrophyte communities.~~ The human introduction of nonnative predator and competitor species or species capable of hybridizing with sensitive plants and animals is also a problem. Because little chemical or biological monitoring has been done for most water bodies in the Lahontan Region, the habitat requirements of many sensitive species are not well known.

Control Measures for Sensitive Species and Biological Communities

1. The U.S. Fish and Wildlife Service and the California Department of Fish and Game (through the Fish and Game Commission) are responsible for “listing” threatened and endangered species, defining critical habitats, and preparing and implementing recovery plans. These agencies review proposed projects which could affect sensitive species or critical habitats. Under the CESA, state agencies which are lead agencies under the California Environmental Quality Act must consult with the California Department of Fish and Game (DFG) before approving projects with potential impacts on state-listed species. If the DFG issues a determination of “jeopardy,” the lead agency must provide for DFG-approved mitigation in order to approve the project. The Regional Board consults with DFG under CESA regarding potential impacts of its Basin Plan amendments, policy changes, and the development projects for which it occasionally takes lead agency responsibility.

2. The Regional Board has recognized existing or potential habitats for sensitive species and biological communities through the "RARE" and "BIOL" beneficial use designations in Chapter 2 of this Plan. Additional water bodies will be so designated as new species are listed or new information about species distribution becomes available. ~~In 1990,~~ The Regional Board ~~amended its narrative regionwide objective for pesticides to~~ may allow the use of rotenone and other piscicides in treatment of water bodies prior to the reintroduction of threatened or endangered fish species provided these projects (i.e. fish toxicant treatments) comply with the criteria described in Chapter 4 under the section entitled "Exemption Criteria for Aquatic Pesticide Use" under the sub-section titled "Exemption Criteria for Fisheries Management." ~~(see the sections on pesticides and rotenone elsewhere in this Chapter). During future revisions of water quality objectives for specific water bodies, the habitat needs of sensitive species will receive special consideration.~~

Chapter 4.9, p. 4.9-27

Control Measures for Lake/Reservoir Restoration

3. Herbicidal and algicidal chemicals have been associated with major adverse impacts on lake systems, none of which are considered restorative. These impacts include nutrient releases to the water after plant death, dissolved oxygen depletion following plant decay, toxic effects on nontarget organisms at recommended doses, rapid regrowth of plants following treatment, as well as conflicting and unresolved issues regarding the mutagenic and carcinogenic effects of some of the chemicals. Thus, the use of herbicides and algicides for lake/reservoir restoration purposes is strongly discouraged. The Regional Board's regionwide prohibition for pesticides and control measures for pesticides, discussed in Chapter 4, is applicable to the use of herbicides and algicides for lake/reservoir restoration. The Regional Board may grant prohibition exemptions to allow the use of aquatic pesticides for lake/reservoir restoration projects only if the pesticide application project is proposed for the circumstances described in Chapter 4 under the section entitled "Circumstances Eligible for Prohibition Exemption" and according to the criteria under the section entitled "Exemption Criteria for Aquatic Pesticide Use." ~~Any proposals for such uses will be carefully reviewed and regulated by the Regional Board if necessary to ensure that water quality standards will not be violated. The narrative objective of "no detectable pesticides" (see Chapter 3) essentially precludes the use of aquatic herbicides (also see discussion of "Agricultural Chemicals" in the "Agriculture" section of this Chapter).~~

Chapter 4.10, pp. 4.10-4 and 4.10-5

Vector Control and Weed Control

Agricultural chemicals are often employed for non-agricultural uses. For instance, aquatic herbicides are sometimes used for the control of aquatic weeds to improve vehicle access, to enhance recreational opportunities, or for aesthetic reasons. The use of terrestrial herbicides may be proposed for forest management, landscaping, fire control, golf course maintenance, or for other similar purposes. Pesticides are also used by public agencies for vector control (i.e., to eliminate pests and disease-carrying organisms such as mosquitoes).

The Regional Board has asked to be notified by public agencies of any large-scale applications of such chemicals within their jurisdiction. For example, the U.S. Forest Service is expected to notify the Regional Board of plans for chemical applications associated with timber harvest or other forest management activities. The California Department of Food and Agriculture, which is currently responsible for certain pest control programs such as that for the gypsy moth, has been asked to notify the Regional Board of plans for pesticide applications in this Region. The U.S. Bureau of Land Management, in implementing its Noxious Weed Control Program, has been asked to notify the Regional Board of aerial herbicide applications and of any spills in, or near, surface waters. Upon such notification, the Regional Board is able to become involved in the environmental consultation process required by the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). In this way, the Regional Board can ascertain whether potential water quality impacts from such activities will be mitigated.

For smaller-scale applications, such as the use of herbicides for golf courses or other turf areas, the Regional Board has adopted waste discharge requirements which include control measures for herbicide use. The Regional Board may wish to have staff review projects on a case-by-case basis, in order to

determine whether there is any potential for water quality impacts and if waste discharge requirements are necessary.

In some instances, use of these substances will have unavoidable water quality impacts, particularly in situations where the chemicals are applied directly into or near surface water (such as aquatic weed control or vector control). In these cases, the use of such chemicals can result in the violation of water quality objectives for ~~pesticides and~~ toxic substances, as well as in the violation of waste discharge prohibitions. Federal regulations (40 CFR § 131.13) allow the Regional Board to grant conditional variances to water quality objectives under certain circumstances. Additionally, the Regional Board may allow the use of pesticides for purposes of vector control provided the project is conducted under the circumstances described in Chapter 4 under the section entitled "Circumstances Eligible for Prohibition Exemption" under the subsection entitled "Vector Control" and according to the criteria described in Chapter 4 under the section entitled "Exemption Criteria for Aquatic Pesticide Use" under the subsection entitled "Exemption Criteria for Vector Control." Furthermore, pursuant to Section 13269 of the California Water Code, the Regional Board may waive the need for waste discharge requirements and reports of waste discharge, for specific types of discharge, where such a waiver is in the public interest. Such actions nevertheless must conform to State and federal nondegradation requirements. Although these policies do allow limited decline in water quality when the State finds that an overriding public benefit will result, both the federal and State policies require that water quality be maintained at a level sufficient to protect existing beneficial uses. USEPA guidance on variances from water quality standards is summarized in Chapter 3 of this Basin Plan under "General Direction Regarding Compliance With Objectives."

Chapter 4.10 , p. 4.10-5
Control Measures for Agricultural Chemicals

Regional Board Control Actions

Chapter 4 includes a prohibition against discharges of pesticides to surface or ground waters. The Regional Board may grant an exemption to the pesticide prohibition for projects that propose to apply aquatic pesticides for purposes of protecting public health (e.g., vector control) or natural resources (e.g., fisheries management, control of aquatic invasive species infestations) provided the project is proposed under the circumstances and according to the criteria detailed in Chapter 4. ~~Chapter 3 of this Basin Plan includes a narrative water quality objective for pesticides which states that pesticide concentrations in waters of the Region shall not exceed the lowest detectable levels, using the most recent detection procedures available. (This objective was amended in 1990 to provide limited exemptions for the use of rotenone by the California Department of Fish & Game.)~~

The use of agricultural chemicals shall be further regulated by ~~implementing~~ relevant provisions of the State Board's Nonpoint Source ~~Management~~ Program Plan, ~~and, once adopted, the plan~~ which guides~~ing~~ implementation of the State Board's 1991 MOU with the Department of Pesticide Regulation. Some pesticides are also included in the California Department of Health Services' Proposition 65 list of carcinogens which should not be present above "action levels" in sources of drinking water. (Proposition 65 is discussed in the "Spills, Leaks, Complaint Investigations and Cleanups" section of this Chapter.)

The ~~narrative water quality objective for pesticides~~ pesticide waste discharge prohibition and the applicable exemption criteria that must be satisfied to grant a prohibition exemption, ~~and nondegradation objectives for water quality and aquatic communities and populations~~, are important considerations in the Regional Board's regulation of discharges ~~which may include~~ of pesticides. ~~These objectives essentially precludes the use of aquatic pesticides or the direct discharge of pesticides to surface waters.~~

Chapter 4.10, pp. 4.10-6

Recommended Future Actions for Agricultural Chemicals

In cooperation with other appropriate local, state, and federal agencies, and private landowners, the Regional Board should:

- Encourage the State Board to develop a monitoring program to detect water quality trends related to agricultural chemicals, identify problem areas, and determine the needed levels of action.

- Review proposals for weed control and vector control ~~projects~~ and invasive species control on a case-by-case basis and consider ~~adopting Basin Plan policies and/or waivers to allow~~ allowing qualified projects to proceed by granting an exemption to the pesticide prohibition.

Chapter 5 Adopted Language – Pesticide Basin Plan Amendment

The following changes apply to Chapter 5 of the Basin Plan. Deletions to language are shown in strike-out and additions are in underline. Font sizes are as they appear in the Basin Plan available at http://www.waterboards.ca.gov/lahontan/water_issues/programs/basin_plan/references.shtml. Instructions regarding edits, page number locations, and relocation placement are shown in 12 point Times New Roman Font in bold type.

Chapter 5.1, pp. 5.1-7, 5.1-8

~~**Pesticides**~~

~~For the purposes of this Basin Plan, pesticides are defined to include insecticides, herbicides, rodenticides, fungicides, piscicides and all other economic poisons. An economic poison is any substance intended to prevent, repel, destroy, or mitigate the damage from insects, rodents, predatory animals, bacteria, fungi or weeds capable of infesting or harming vegetation, humans, or animals (CA Agriculture Code § 12753).~~

~~Pesticide concentrations, individually or collectively, shall not exceed the lowest detectable levels, using the most recent detection procedures available. There shall not be an increase in pesticide concentrations found in bottom sediments. There shall be no detectable increase in bioaccumulation of pesticides in aquatic life.~~

~~Waters designated as MUN shall not contain concentrations of pesticides or herbicides in excess of the limiting concentrations specified in Table 64444-A of Section 64444 (Organic Chemicals) of Title 22 of the California Code of Regulations which is incorporated by reference into this plan. This incorporation-by-reference is prospective including future changes to the incorporated provisions as the changes take effect.~~

Though applicable for fisheries management projects in the Lake Tahoe Basin, the following language will be struck from Chapter 5, since this language is mentioned previously in Chapter 3. Additionally, Chapter 5, p. 5.16-2, clearly states that projects proposing to use rotenone for use in waters of the Tahoe Basin must comply with the Exemption Criteria for Fisheries Management, which require compliance with criteria described in Chapter 3 in the sections entitled (1) Water Quality Objectives for Fisheries Management Using the Fish Toxicant Rotenone."

Chapter 5, pp. 5.1-10

~~***Water Quality Objectives for Fisheries Management Activities Using the Fish Toxicant Rotenone***~~

~~Rotenone is a fish toxicant used by the California Department of Fish and Game (DFG) for fishery management purposes. (See Chapter 4 for a more complete discussion of this topic.)~~

~~The application of rotenone solutions and the detoxification agent potassium permanganate can cause several water quality objectives to be temporarily exceeded, both inside and outside of project boundaries. (Project boundaries are defined as encompassing the treatment area, the detoxification area, and the area downstream of the detoxification station up to a thirty-minute travel time.)~~

~~Additional narrative water quality objectives applicable to rotenone treatments are: color, pesticides, toxicity, and species composition. Conditional variances to these objectives may be granted by the Regional Board's Executive Officer for rotenone applications by the DFG, provided that such projects comply with the conditions described below and with the conditions described in Chapter 4 (Implementation) under the section entitled "Rotenone Use In Fisheries Management"~~

Color

The characteristic purple discoloration resulting from the discharge of potassium permanganate shall not be discernible more than two miles downstream of project boundaries at any time. Twenty-four (24) hours after shutdown of the detoxification operation, no color alteration(s) resulting from the discharge of potassium permanganate shall be discernible within or downstream of project boundaries.

Pesticides

Chemical residues resulting from rotenone treatment must not exceed the following limitations:

1. The concentration of naphthalene outside of project boundaries shall not exceed 25 ug/liter (ppb) at any time.

2. The concentration of rotenone, rotenolone, trichloroethylene (TCE), xylene, or acetone (or potential trace contaminants such as benzene or ethylbenzene) outside of project boundaries shall not exceed the detection levels for these respective compounds at any time. "Detection level" is defined as the minimum level that can be reasonably detected using state-of-the-art equipment and methodology.

3. After a two-week period has elapsed from the date that rotenone application was completed, no chemical residues resulting from the treatment shall be present at detectable levels within or downstream of project boundaries.

4. No chemical residues resulting from rotenone treatments shall exceed detection levels in ground water at any time.

Species Composition

The reduction in fish diversity associated with the elimination of non-native game fish or exotic species may be part of the project goal, and may therefore be unavoidable. However, non-target aquatic populations (e.g., invertebrates, amphibians) that are reduced by rotenone treatments are expected to repopulate project areas within one year. Where species composition objectives are established for specific water bodies or hydrologic units, the established objective(s) shall be met for all non-target aquatic organisms within one year following rotenone treatment. For multi-year treatments (i.e., when rotenone is applied to the same water body during two or more consecutive years), the established objective(s) shall be met for all non-target aquatic organisms within one year following the final rotenone application to a given water body.

Threatened or endangered aquatic populations (e.g., invertebrates, amphibians) shall not be adversely affected. The DFG shall conduct pre-project monitoring to prevent rotenone application where threatened or endangered species may be adversely impacted.

Toxicity

Chemical residues resulting from rotenone treatment must not exceed the limitations listed above for pesticides.

The proposed amendment would insert the following language in Section 5.2, Lake Tahoe Basin, "Waste Discharge Prohibitions, Regionwide Prohibitions" immediately after Waste Discharge Prohibition 4:

5. The discharge of pesticides to surface or ground waters is prohibited.[1]

The following language should be included in a separate paragraph immediately following the proposed prohibition no. 5 in Section 5.2. and immediately before "Regionwide Exemption Criteria for Restoration Projects."

Specific projects may be eligible for an exemption to this prohibition. Refer to Chapter 4.1 of the Basin Plan to determine eligible circumstances and criteria that must be satisfied for consideration of an exemption.

Chapter 5, p. 5.16-2

Pesticides

Although there is no agricultural use of pesticides in the Lake Tahoe Basin, potential water quality problems from pesticide use in landscaping, turf management, silviculture, and wood preservatives are of concern. High levels of tributyltin (TBT), an antifouling compound formerly used in boat paint, have been measured in and near a marina in Lake Tahoe. Rotenone has been used for fisheries management in some waters of the Tahoe Basin.

~~Regionwide water quality objectives, and related objectives for nondegradation and toxicity, essentially preclude direct discharges of pesticides such as aquatic herbicides~~. The Lahontan Regional Board's regionwide prohibition for pesticides and control measures for pesticides, discussed in Chapter 4 of this Basin Plan, are applicable in the Lake Tahoe Basin. Exemptions to this regionwide prohibition may be granted as described in Chapter 4.1 provided the application of aquatic pesticides is proposed for the circumstances described under the section entitled "Circumstances Eligible for Prohibition Exemption" and according to the criteria under the section entitled "Exemption Criteria for Aquatic Pesticide Use." As described in Chapter 4.1, projects proposing to use rotenone for use in waters of the Tahoe Basin must comply with the "Exemption Criteria for Fisheries Management," which require compliance with criteria described in Chapter 3 in the section entitled (1) Water Quality Objectives for Fisheries Management Using the Fish Toxicant Rotenone**."**

The 208 Plan (TRPA 1988, Vol. I, page 102) notes that because of its harsh climate, short growing season, and high elevation, the Lake Tahoe Basin has fewer insect and fungal pests than many other areas in California and Nevada; however, there is some pesticide use for silviculture and turf management. The 208 Plan recognizes that controls are needed on the use of pesticides to ensure that detectable levels of toxic substances do not migrate into the surface or ground waters of the

[1] Compliance with this prohibition will be assessed or measured by evidence of pesticide application to liquid water or by analyzing water samples (from either surface or ground waters) for the presence of pesticides. Therefore, proper application of terrestrial pesticides directly to plants or animals located in a surface water (as defined by the Water Code) under dry conditions or directly to land adjacent to surface water should not (1) result in a violation of the prohibition, (2) require the project proponent submit an exemption request to the Regional Board, nor (3) require the Regional Board to consider exemptions to the prohibition.

Dry condition example: The application of terrestrial pesticides to the dry stream beds of ephemeral streams would not require a prohibition exemption since this situation involves pesticide application under a dry condition (i.e., no liquid water is present in the ephemeral stream).

Adjacent to surface water example: The application of terrestrial pesticides along a canal to kill weeds and help maintain structural stability would not require a prohibition exemption since this situation involves pesticide application to land, not liquid water.

region, but also recognizes the possibility of limited exceptions for the use of rotenone in fisheries management.

The 208 Plan states (Vol. I, page 154) that the use of insecticides, fungicides, and herbicides shall be consistent with the BMP Handbook (TRPA 1988, Vol. II), and that TRPA shall discourage pesticide use for pest management. Prior to applying any pesticide, potential users shall consider integrated pest management (IPM) practices, including alternatives to chemical applications, management of forest resources in a manner less conducive to pests, and reduced reliance on potentially hazardous chemicals.

The 208 Plan provides that only chemicals registered with the USEPA and the state agency of appropriate jurisdiction shall be used for pest control, and then only for their registered application. No detectable concentration of any pesticide shall be allowed to enter any SEZ unless TRPA finds that the application is necessary to attain or maintain its "environmental threshold carrying capacity" standards. Pesticide storage and use must be consistent with California and Nevada water quality standards and TRPA thresholds.

The 208 Plan recognizes that antifouling substances painted on the hulls of boats, such as TBT, may contribute to water quality problems. California legislation in 1988 prohibited the use of TBT paints except on aluminum vessel hulls and vessels 25 meters or more in length. Vessels painted with TBT before January 1, 1988 may still be used, but may not be repainted with TBT so long as they comply with other applicable requirements. The USEPA has also banned the use of TBT on non-aluminum hulls of vessels less than 82 feet in length and has limited the release rate of TBT from other hulls to 0.4 ug/cm^2/day. [The prohibition against discharges of pesticides to surface waters ~~"no detectable pesticides" water quality objective~~ in this Basin Plan is ~~probably~~ more stringent than this effluent limitation.] Controls on antifouling coatings and boat and marina maintenance practices are necessary to protect Lake Tahoe from the addition of toxic substances from this source. The 208 Plan (Vol. I, page 158) provides that antifouling coatings shall be regulated in accordance with California and federal laws, by the Lahontan Regional Board and TRPA. The BMP Handbook incorporates the California and federal restrictions on use of paints containing TBT, and applies those restrictions to all portions of the Tahoe Region.

Response to Comments – September 30, 2011

First Public Comment Period (Comment deadline 5 p.m., May 13, 2011)

Basin Plan Amendment – Pesticide Prohibition & Exemption Criteria

California Department of Fish and Game (April 12, 2011)
California Department of Food and Agriculture (May 13, 2011)
California Department of Public Health – Drinking Water (May 19, 2011)
California Department of Public Health –Vector (May 13, 2011)
General Public – Tom Spencer (April 13, 2011)
General Public – Don and Nancy Erman (May 10, 2011)
League to Save Lake Tahoe (April 13, 2011)
Los Angeles Department of Water and Power (May 12, 2011)
Mojave Desert Resource Conservation District (May 9, 2011)
Nevada County Board of Supervisors (April 26, 2011)
Nevada Division of Environmental Protection - Bureau of Safe Drinking Water and Bureau of Water Pollution Control (June 3, 2011)
Tahoe Area Sierra Club (April 12, 2011)
Tahoe Keys Property Owners Association - Letter 1 (May 4, 2011)
Tahoe Keys Property Owners Association - Letter 2 (May 2011)
Tahoe Water Suppliers Association (April 27, 2011)
United States Fish and Wildlife Service (May 12, 2011)

Response to Comments – November 23, 2011

Second Public Comment Period (Comment deadline 12 p.m., November 14, 2011)

Basin Plan Amendment – Pesticide Prohibition & Exemption Criteria

Clean Lakes Inc. (November 14, 2011)
General Public – B.J. Hodge (November 14, 2011)
Round Hill General Improvement District and Tahoe Water Suppliers Association – Greg Reed – Letter 1 (October 27, 2011)
Round Hill General Improvement District and Tahoe Water Suppliers Association – Greg Reed – Letter 2 (October 31, 2011)
League to Save Lake Tahoe – (Carl Young) – November 14, 2011. No written response provided.