California Regional Water Quality Control Board

Los Angeles Region

Matthew Rodriquez
Secretary for Environmental Protection

320 W. 4th Street, Suite 200, Los Angeles, California 90013
Phone (213) 576-6600 FAX (213) 576-6640 - Internet Address: http://www.waterboards.ca.gov/losangeles

Edmund G. Brown Jr.
Governor

Mr. Marty Melvin
Ventura County Resource Conservation District
P.O. Box 147
Somis, California 93066

VIA CERTIFIED MAIL
RETURN RECEIPT REQUESTED
No. 7010 3090 0002 1021 9407

WATER QUALITY CERTIFICATION FOR PROPOSED CALLEGUAS CREEK WATERSHED ARUNDO TAMARISK REMOVAL PROJECT (Corps' Project No. 2011-841-AJS), CALLEGUAS CREEK WATERSHED, VENTURA COUNTY (File No. 11-021)

Dear Mr. Melvin:

Board staff has reviewed your request on behalf of Ventura County Resource Conservation District (Applicant) for a Clean Water Act Section 401 Water Quality Certification for the above-referenced project. Your application was deemed complete on September 13, 2011.

I hereby issue an order certifying that any discharge from the referenced project will comply with the applicable provisions of sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 303 (Water Quality Standards and Implementation Plans), 306 (National Standards of Performance), and 307 (Toxic and Pretreatment Effluent Standards) of the Clean Water Act, and with other applicable requirements of State law. This discharge is also regulated under State Water Resources Control Board Order No. 2003 - 0017 - DWQ, "General Waste Discharge Requirements for Dredge and Fill Discharges that have received State Water Quality Certification" which requires compliance with all conditions of this Water Quality Certification.

The Applicant shall be liable civilly for any violations of this Certification in accordance with the California Water Code. This Certification does not eliminate the Applicant's responsibility to comply with any other applicable laws, requirements and/or permits.

Should you have questions concerning this Certification action, please contact Valerie Carrillo, Lead, Section 401 Program, at (213) 576-6759.

Samuel Unger

Samuel Unger, P.E.
Executive Officer

April 10, 2012
Date

DISTRIBUTION LIST

Marty Melvin (via electronic copy)
Ventura County Resource Conservation District
P.O. Box 147
Somis, California 93066

Peter Brand
Coastal Conservancy
1330 Broadway, Suite 1100
Oakland, CA 94612

Antal Szijj (via electronic copy)
U.S. Army Corps of Engineers
Regulatory Branch, Ventura Field Office
2151 Alessandro Drive, Suite 255
Ventura, CA 93001

Paul Amato (via electronic copy)
U.S. Environmental Protection Agency, Region 9
75 Hawthorne Street
San Francisco, CA 94105

Diane Noda
U.S. Fish and Wildlife Service
2493 Portola Road, Suite B
Ventura, CA 93003

Vicki Clark, Staff Attorney
Environmental Defense Center
906 Garden Street
Santa Barbara, CA 93101

Jessie Altstatt
Santa Barbara Channel Keeper
714 Bond Street
Santa Barbara, CA 93103

Chantal Cagle (via electronic copy)
Wildscape Restoration, Inc.
4484 Market Street, Suite 304
San Buenaventura, 93003

ATTACHMENT A

Project Information
File No. 11-021

1. Applicant:

Ventura County Resource Conservation District
P.O. Box 147
Somis, California 93066

Phone: (805) 386-4489 Fax: (805) 386-4890

2. Applicant's Agent:

Chantal Cagle
Wildscape Restoration, Inc.
4484 Market Street, Suite 304
San Buenaventura, 93003

Phone: (805) 644-6852 Fax: (805) 642-2146

3. Project Name:

Calleguas Creek Watershed Arundo Tamarisk Removal

4. Project Location:

Calleguas Creek Watershed, Ventura County

Latitude	Longitude
34.13145556	119.17683333
34.35648889	118.88488056
34.23313333	118.67288056
34.15442500	119.00697500
34.29032500	119.11004444
34.34490278	118.61598889
34.16039722	118.83732500
34.08808889	119.06192222

5. Type of Project:

Restoration Project and Invasive Removal

6. Project Purpose:

The purpose of this project is to remove non-native invasive plant species within riparian corridors and coastal areas of the Calleguas Creek watershed.

7. Project Description:

The Calleguas Creek Watershed Arundo & Tamarisk Removal Program (CCARP), will establish a program to facilitate the removal of non-native invasive plant species within riparian corridors and coastal areas of the Calleguas Creek Watershed. In particular, the Project is focused on two species, arundo (*Arundo donax*) and tamarisk (*Tamarisk spp.*). The main objective of CCARP is the development of a programmatic review and permitting process for individual removal projects as part of the

program (Program) on a watershed-wide basis. In addition, the Calleguas Creek Watershed Arundo & Tamarisk Removal Program Plan has been developed to provide guidance for the planning and implementation of individual projects within riprarian corridors of the watershed. The CCARP Plan provides criteria for individual projects to qualify for the use of the programmatic permits developed for CCARP, including descriptions recommended removal methodology, equipment and chemicals (herbicides and surfactants), and required procedures, such as following all best management practices provided. The CCARP also describes seven example removal projects that could conceivably be implemented under the Project.

Potential projects will have to complete a thorough review process by the Ventura County Resource Conservation District (VCRCD) holding the programmatic permit in order to utilize this Program. The Program will conduct the following actions in order to facilitate removal of non-native plants from the Watershed:

Solicitation & Marketing. Outreach efforts will be made to agencies and stakeholders with interest in the Calleguas Creek Watershed regarding the ability to conduct non-native plant removal projects under the programmatic permit. Potential applicants will be encouraged to submit an application or to contact the VCRCD to see if they qualify for the program and for help obtaining additional sources of funding for project implementation.

Application/Request for Assistance. Applicants will submit applications to the VCRDC along with an initial deposit or application processing fee. The application will include, but is not limited to, a detailed site plan, a description of the methods to be used for plant removal, a long-term plan to maintain eradication, and a narrative of how the project fits in to appropriate Watershed Protection Plan. Technical assistance can be provided for project design and planning.

Review. The proposed project will reviewed for consistency with the conditions required by the different regulatory agencies, as part of the programmatic permit. All projects must have a clear environmental benefit and meet the Program's environmental protection and permit conditions. Design review by engineering personnel will be conducted as needed.

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Review considerations include effects on downstream flows, short term and construction-related effects on the quality of downstream water, effects on aquatic and wildlife communities; and effects on turbidity of downstream water resources.

Compliance. Landowner or operator signs an Agreement assuming responsibility for compliance with the conditions of the Program permit. The lead agency reviews photo documentation and monitoring reports of project implementation to verify compliance with permit conditions.

All riparian corridors and associated channels in the Calleguas Creek watershed are intended for inclusion in CCARP. For the first year, three (3) projects have been identified as priorities for implementation. The maximum size of any proposed project will be within 20 acres in size.

Non-native plant removal methodology associated with CCARP has been designed to create as few impacts as possible. Removal activities (mechanism and manual) associated with individual projects located in or along the bed and banks of a channel may create minor amounts of soil disturbance, which may have the potential to increase channel erosion and downstream sedimentation during periods of significant channel flow. However, erosion, sedimentation, and turbidity that could result from the individual projects as part of CCARP are anticipated to be minimal, and would thus not add significantly to existing background levels of sedimentation or cause an adverse effect on aquatic plant or wildlife species in this watershed.

Of all of CCARP's approved removal methods; above-ground mechanical removal is most likely to cause limited soil disturbance due to soil exposure from the use of tracked equipment. However, this type of disturbance is expected to be minor and not contributory to erosion and sedimentation. None of the removal methods include excavation of root masses. By avoiding disturbance to roots, soil in removal areas is anticipated to remain relatively stable and would therefore not be subject to excessive erosion. Also, once native plants naturally re-establish or are actively planted at removal sites, any disturbed soil in removal areas would restabilize.

Waters could potentially also be impacted through the installation of temporary water diversion structures or temporary access ramps/paths. Such features are anticipated to only be necessary for a limited number of projects. Areas where such installations occur would be revegetated to prevent and reduce the potential for any future erosion and sedimentation.

Beneficial impacts are anticipated to occur with the implementation of CCARP. Arundo affects water quality by displacing native trees and other vegetation, thereby reducing the shading of surface water and increasing water temperature. This increase in light exposure and temperature can decrease water oxygen content and encourage algal blooms that elevate pH levels. These effects reduce the available habitat for aquatic organisms, diminishing the food supply for native wildlife. Increased pH also leads to the conversion of usable ammonia to toxic unionized ammonia, which degrades water quality. Therefore, removal of arundo and Tamarisk, along with revegetation of habitat areas with native plants is expected to have a long-term beneficial impact on water quality within the Calleguas Creek Watershed.

The specific removal activities will be described in Attachment C.

8. Federal Agency/Permit:	U.S. Army Corps of Engineers Permit No. 2011-841-AJS
9. Other Required Regulatory Approvals:	California Department of Fish and Game Streambed Alteration Agreement
10. California Environmental Quality Act Compliance:	The Ventura Resource Conservation District approved the project's Final Environmental Impact Report and filed a Notice of Determination on March 16, 2011.
11. Receiving Water:	Calleguas Creek Watershed (Hydrologic Unit No. 403.11)
12. Designated Beneficial Uses:	NAV, REC-1, REC-2, COMM, EST, MAR, WILD, BIOL, RARE, MIGR, SPWN, SHELL, WET
13. Impacted Waters of the United States:	Non-wetland waters (streambed): **20 temporary acres maximum per project**

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14. Dredge Volume: None

15. Related Projects Implemented/to be Implemented by the Applicant: The Applicant has not identified any related projects carried out in the last 5 years or planned for implementation in the next 5 years.

16. Avoidance/ Minimization Activities: The Applicant has proposed to implement several Best Management Practices, including, but not limited to, the following:

- The work area, including access and staging areas, shall be limited to the smallest possible area.
- Soil disturbance shall be limited to the smallest possible area.
- Project activities, including movement of personnel and equipment, shall be limited to designated work zones, staging areas, and access roads to the extent possible.
- Staging areas shall be located outside the active channel on the upper terrace, levee, or bank of the stream or tributary.
- Staging areas shall be located in degraded areas and/or where the soil is already compacted, preferably near access points when site conditions allow.
- Staging areas shall serve as parking locations for work vehicles and equipment when they are not in use.
- Access points shall be located at existing ramps/roads, or in areas that are already degraded to the extent possible.
- If any mechanical and/or hand held equipment was used for non-native invasive plant removal at another site, it shall be pressure washed or sufficiently cleaned at a location with appropriate containment of water runoff before it is used at a new project site to prevent the spread of seed or viable plant material.

Water (Work in Water, Water Quality, Erosion Control)

- No vehicles or heavy equipment shall be allowed in flowing or ponded water.
- A spill containment and cleanup kit shall be present on site during all removal activities.
- A site-specific Spill Prevention and Response Plan shall be prepared. This plan shall include the following: materials handling procedures, including procedure for refilling herbicide equipment and refueling of portable equipment in contained area or with the use of barriers to contain spills; storage

requirements; location of staging areas; spill cleanup procedures and processes in which spills may potentially occur; location of an onsite spill containment and cleanup kit; and notification procedures and contacts for use in the event of a spill.

- All contaminated spoils, rubbish, oil or other petroleum products, or any other substances which could be hazardous to aquatic or terrestrial life, resulting from project related activities, shall be prevented from contaminating the soil and/or entering water bodies.
- No project activity shall occur during a rain event or if forecasts indicate that rain is likely within 24 hours. If rain does occur, erosion control measures such as sand bags and/or silt fences shall be employed to reduce soil erosion. If storm flow enters the project site, work shall only resume...
- If potential exists for erosion or sedimentation, erosion control and sediment detention devices (e.g., silt fencing, mulch, matting, soil binder, seeding) shall be incorporated into the project design and installed to prevent sediment input to streams. Sediment collected in the detention devices shall be disposed of away from the collection site and outside riparian areas or flood hazard areas. These devices shall be inspected before and after rain events, and repaired if necessary, to ensure they are functioning properly. Herbicide usage shall be limited to the minimum amount required to be effective.
- All trash items shall be enclosed in sealed receptacles and regularly removed from the site.
- All vehicles and equipment, including the brush grinder, shall be moved to a staging area or removed from the site overnight.
- The fueling and lubrication of vehicles and large mechanical equipment shall be confined to staging areas.
- The fueling and lubrication of small mechanical equipment, such as chainsaws, outside of staging areas shall occur in a sufficiently sized tub or pan so that drips and spills are contained.
- Herbicide shall not be applied during rain events or when rain is forecast in the next 24 hours.
- The refilling of herbicide application equipment outside of staging areas shall occur in a sufficiently sized tub or pan so that drips and spills are contained.
- No biomass shall be left within 20 feet of any active low-flow channel.

- Cut biomass or other debris shall not be left overnight within the stream channel or on its banks.
- Cut and/or chipped biomass shall be hauled to the designated disposal site at the end of each workday when possible. If cut and/or chipped biomass must be left onsite overnight, it shall be moved to staging areas. Cut and/or chipped biomass shall be stored for no more than five days in designated staging areas.

Public Health (Public Health and Safety)

- Herbicide storage during application shall be confined to staging areas.
- Booms or ladders shall not be employed for foliar spraying within 200 feet of residences, parks, schools, or similar sensitive receptors. Foliar spray applications shall be limited to the cut and spray resprouts technique within this setback.

17. Proposed Compensatory Mitigation:

The Applicant has not proposed any additional compensatory mitigation, as this project is restorative in nature.

18. Required Compensatory Mitigation:

The Regional Board will not require compensatory mitigation for the proposed restoration project.

See *Attachment B, Conditions of Certifications, Additional Conditions* for modifications and additions to the above proposed compensatory mitigation.

ATTACHMENT B

Conditions of Certification
File No. 11-021

STANDARD CONDITIONS

Pursuant to §3860 of Title 23 of the California Code of Regulations (23 CCR), the following three standard conditions shall apply to this project:

1. This Certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to §13330 of the California Water Code and Article 6 (commencing with 23 CCR §3867).

2. This Certification action is not intended and shall not be construed to apply to any activity involving a hydroelectric facility and requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent Certification application was filed pursuant to 23 CCR Subsection 3855(b) and the application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.

3. Certification is conditioned upon total payment of any fee required pursuant to 23 CCR Chapter 28 and owed by the Applicant.

ADDITIONAL CONDITIONS

Pursuant to 23 CCR §3859(a), the Applicant shall comply with the following additional conditions:

1. The Applicant shall submit to this Regional Board copies of any other final permits and agreements required for this project, including, but not limited to, the U.S. Army Corps of Engineers' (ACOE) Section 404 Permit and the California Department of Fish and Game's (CDFG) Streambed Alteration Agreement. **These documents shall be submitted prior to any discharge to waters of the State.**

2. The Applicant shall adhere to the most stringent conditions indicated with either this Certification, the CDFG's Streambed Alteration Agreement, or the ACOE Section 404 Permit.

3. The Applicant shall comply with all water quality objectives, prohibitions, and policies set forth in the *Water Quality Control Plan, Los Angeles Region (1994),* as amended.

4. The Avoidance/Minimization activities proposed by the Applicant as described in Attachment A, No. **16**, are incorporated as additional conditions herein.

5. The Applicant and all contractors employed by the Applicant shall have copies of this Certification, and all other regulatory approvals for this project on site at all times and shall be familiar with all conditions set forth.

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6. Fueling, lubrication, maintenance, operation, and storage of vehicles and equipment shall not result in a discharge or a threatened discharge to waters of the State. At no time shall the Applicant use any vehicle or equipment which leaks any substance that may impact water quality. Staging and storage areas for vehicles and equipment shall be located outside of waters of the State.

7. All excavation, construction, or maintenance activities shall follow best management practices to minimize impacts to water quality and beneficial uses. Dust control activities shall be conducted in such a manner that will not produce downstream runoff.

8. No construction material, spoils, debris, or any other substances associated with this project that may adversely impact water quality standards, shall be located in a manner which may result in a discharge or a threatened discharge to waters of the State. Designated spoil and waste areas shall be visually marked prior to any excavation and/or construction activity, and storage of the materials shall be confined to these areas.

9. All waste and/or dredged material removed shall be relocated to a legal point of disposal if applicable. A legal point of disposal is defined as one for which Waste Discharge Requirements have been established by a California Regional Water Quality Control Board, and is in full compliance therewith. Please contact the Land Disposal Unit, at the Regional Board for further information.

10. The Applicant shall implement all necessary control measures to prevent the degradation of water quality from the proposed project in order to maintain compliance with the Basin Plan. The discharge shall meet all effluent limitations and toxic and effluent standards established to comply with the applicable water quality standards and other appropriate requirements, including the provisions of Sections 301, 302, 303, 306, and 307 of the Clean Water Act. This Certification does not authorize the discharge by the applicant for any other activity than specifically described in the 404 Permit.

11. The discharge shall not: a) degrade surface water communities and populations including vertebrate, invertebrate, and plant species; b) promote the breeding of mosquitoes, gnats, black flies, midges, or other pests; c) alter the color, create visual contrast with the natural appearance, nor cause aesthetically undesirable discoloration of the receiving waters; d) cause formation of sludge deposits; or e) adversely affect any designated beneficial uses.

12. The Applicant shall allow the Regional Board and its authorized representative entry to all project sites, to inspect and undertake any activity to determine compliance with this Certification, or as otherwise authorized by the California Water Code.

13. Application of pesticides must be supervised by a certified applicator and be in conformance with manufacturer's specifications for use. Compounds used must be appropriate to the

target species and habitat. All pesticides directed toward aquatic species must be approved by the Regional Board. Pesticide utilization shall be in accordance with State Water Resources Control Board Water Quality Order Nos. 2011-0004-DWQ and 2004-0009-DWQ or appropriate updated permits.

14. The Applicant shall not conduct any construction activities within waters of the State during a rainfall event. The Applicant shall maintain **a five-day (5-day) clear weather forecast** before conducting any operations within waters of the State.

15. The Applicant shall utilize the services of a qualified biologist with expertise in riparian assessments during any vegetation clearing activities. The biologist shall be available on site during construction activities to ensure that all protected areas are marked properly and ensure that no vegetation outside the specified areas is removed. The biologist shall have the authority to stop the work, as necessary, if instructions are not followed. The biologist shall be available upon request from this Regional Board for consultation within 24 hours of request of consultation.

16. No activities shall involve wet excavations (i.e., no excavations shall occur below the seasonal high water table). A minimum **5-foot** buffer zone shall be maintained above the existing groundwater level. If construction or groundwater dewatering is proposed or anticipated, the Applicant shall file a **Report of Waste Discharge** (ROWD) to this Regional Board and obtain any necessary NPDES permits/Waste Discharge Requirements prior to discharging waste.

17. All project/maintenance activities not included in this Certification, and which may require a permit, must be reported to the Regional Board for appropriate permitting. Bank stabilization and grading, as well as any other ground disturbances, are subject to restoration and revegetation requirements, and may require additional Certification action.

18. All surface waters, including ponded waters, shall be diverted away from areas undergoing grading, construction, excavation, vegetation removal, and/or any other activity which may result in a discharge to the receiving water. If surface water diversions or temporary water diversion structures are anticipated, the Applicant shall develop and submit a **Surface Water Diversion Plan** (plan) to this Regional Board. The plan shall include the proposed method and duration of diversion activities, structure configuration, construction materials, equipment, erosion and sediment controls, and a map or drawing indicating the locations of diversion and discharge points. Contingency measures shall be a part of this plan to address various flow discharge rates. The plan shall be submitted prior to any surface water diversions. If surface flows are present, then upstream and downstream monitoring for the following shall be implemented:
    - pH
    - temperature
    - dissolved oxygen

- turbidity
- total suspended solids(TSS)

Analyses must be performed using approved US Environmental Protection Agency methods, where applicable. These constituents shall be measured at least once prior to diversion and then monitored for on a daily basis during the first week of diversion and then on a weekly basis, thereafter, until the in-stream work is complete.

Results of the analyses shall be submitted to this Regional Board by the 15th day of each subsequent sampling month. A map or drawing indicating the locations of sampling points shall be included with each submittal. Diversion activities shall not result in the degradation of beneficial uses or exceedance of water quality objectives of the receiving waters. Downstream TSS shall be maintained at ambient levels. Where natural turbidity is between 0 and 50 Nephelometric Turbidity Units (NTU), increases shall not exceed 20%. Where natural turbidity is greater than 50 NTU, increases shall not exceed 10%. Any such violations may result in corrective and/or enforcement actions, including increased monitoring and sample collection.

19. The Applicant shall restore **all areas** of TEMPORARY IMPACTS to waters of the United States and all other areas of temporary disturbance which could result in a discharge or a threatened discharge to waters of the State. Restoration shall include grading of disturbed areas to pre-project contours and revegetation with native species. Restored areas shall be monitored and maintained with native species as necessary for five years. The Applicant shall implement all necessary Best Management Practices to control erosion and runoff from areas associated with this project.

20. The Applicant shall submit to this Regional Board **Annual Monitoring Reports** (Annual Reports) by **January 1st** of each year for a minimum period of **five (5) years** following each individual project. The Annual Reports shall describe in detail all of the project activities performed during the previous year and all restoration efforts; including percent survival by plant species and percent cover. At a minimum the Annual Reports shall include the following documentation:

(a) Color photo documentation of the pre- and post-project site conditions;

(b) Geographical Positioning System (GPS) coordinates in decimal-degrees format outlining the boundary of the project areas;

(c) The overall status of project including a detailed schedule of work;

(d) Copies of all permits revised as required in Additional Condition 1;

(e) Water quality monitoring results (as required) compiled in an easy to interpret format;

(f) A certified Statement of "no net loss" of wetlands associated with this project;

(g) Discussion of any monitoring activities and exotic plant control efforts; and

(h) A certified Statement from the permittee or his/her representative that all conditions of this Certification have been met.

21. All applications, reports, or information submitted to the Regional Board shall be signed:

(a) For corporations, by a principal executive officer at least of the level of vice president or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which discharge originates.

(b) For a partnership, by a general partner.

(c) For a sole proprietorship, by the proprietor.

(d) For a municipal, State, or other public facility, by either a principal executive officer, ranking elected official, or other duly authorized employee.

22. Each and any report submitted in accordance with this Certification shall contain the following completed declaration:

"I declare under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who managed the system or those directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Executed on the _____ day of _____ at _____.

_____ (Signature)
_____ (Title)"

23. All communications regarding this project and submitted to this Regional Board shall identify the Project File Number 11-021. Submittals shall be sent to the attention of the 401 Certification Unit.

24. Any modifications of the proposed project may require submittal of a new Clean Water Act Section 401 Water Quality Certification application and appropriate filing fee.

ATTACHMENT B

Conditions of Certification
File No. 11-021

25. The project shall comply with the local regulations associated with the Regional Board's **Municipal Stormwater Permit** issued to Ventura County and co-permittees under NPDES No. CAS004002 and Waste Discharge Requirements Order No. 2010-0108. This includes the Stormwater Quality Urban Impact Mitigation Plan (SQUIMP) and all related implementing local ordinances and regulations for the control of stormwater pollution from new development and redevelopment. The project shall also comply with all requirements of the National Pollutant Discharge Elimination System (NPDES) **General Permit** for Storm Water Discharges Associated with Construction Activity, Order No. 99-08-DWQ. All stormwater treatment systems shall be located outside of any water of the State and shall not be used as a wetland or riparian mitigation credit.

26. Coverage under this Certification may be transferred to the extent the underlying federal permit may legally be transferred and further provided that the Applicant notifies the Executive Officer at least 30 days before the proposed transfer date, and the notice includes a written agreement between the existing and new Applicants containing a specific date of coverage, responsibility for compliance with this Certification, and liability between them.

27. The Applicant or their agents shall report any noncompliance. Any such information shall be provided verbally to the Executive Officer within 24 hours from the time the Applicant becomes aware of the circumstances. A written submission shall also be provided within five days of the time the Applicant becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected; the anticipated time it is expected to continue and steps taken or planned to reduce, eliminate and prevent recurrence of the noncompliance. The Executive Officer, or an authorized representative, may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

28. *Enforcement:*

    (a) In the event of any violation or threatened violation of the conditions of this Certification, the violation or threatened violation shall be subject to any remedies, penalties, process or sanctions as provided for under State law. For purposes of section 401(d) of the Clean Water Act, the applicability of any State law authorizing remedies, penalties, process or sanctions for the violation or threatened violation constitutes a limitation necessary to assure compliance with the water quality standards and other pertinent requirements incorporated into this Certification.

    (b) In response to a suspected violation of any condition of this Certification, the State Water Resources Control Board (SWRCB) or Regional Water Quality Control Board (RWQCB) may require the holder of any permit or license subject to this Certification to furnish, under penalty of perjury, any technical or monitoring reports the SWRCB

deems appropriate, provided that the burden, including costs, of the reports shall be a reasonable relationship to the need for the reports and the benefits to be obtained from the reports.

(c) In response to any violation of the conditions of this Certification, the SWRCB or RWQCB may add to or modify the conditions of this Certification as appropriate to ensure compliance.

29. This Certification shall expire **five (5) years** from date of this Certification. The Applicant shall submit a complete application prior to termination of this Certification if renewal is requested.

ATTACHMENT C

Table 2-3: Authorized Removal Methods

Table 2-3: Authorized Removal Methods

Method	Appropriate Use	Timing	Materials and Tools	Instructions	Advantages	Disadvantages
Herbicide						
Hand Removal and Paint/Daub Cut above-ground biomass and apply herbicide to cut stems.	Arundo, tamarisk, trees, shrubs, and vines. Any size patch of targeted vegetation. Target vegetation may be intermixed with native plants.	Spring through fall depending on herbicide used. Best if done before plants have gone to seed.	Chainsaws, loppers, or similar equipment for cutting biomass. Herbicide and colorant. Paintbrushes, sponge daubers, or similar equipment for herbicide application. Chippers to reduce biomass of cut vegetation (optional). Haul trucks or similar equipment to remove cut biomass.	Cut target plants within 6 inches of the ground. Leave roots and rhizomes in the ground. Apply herbicide to cut stem surface within minutes after cutting. Dispose of cut biomass at a landfill, chip and dispose of biomass at a landfill, or chip biomass and haul off-site for beneficial reuse. Do not chip seed bearing biomass. Cover seed-bearing biomass completely with tarp during transport and storage to prevent spread of seed.	Effective on any size patch of targeted vegetation. High mortality rate of target species. Little risk of herbicide drift to non-target plants and wildlife. Little soil disturbance. Minimal potential disturbance to native plants and/or wildlife. Chipped biomass may be used for mulch or other beneficial purposes. Biomass removal may reduce flooding and fire hazard.	May be public concern with herbicide use. If extensive biomass removal is required, additional time and labor costs may be incurred.
Hand Removal and Spray Resprouts Cut above-ground biomass and spray resprouts with herbicide solution.	Arundo, tamarisk, herbaceous plants, seedling trees, small or medium sized shrubs and/or vines. Small or medium sized patches of targeted vegetation. Target vegetation may be intermixed with native plants.	Spring through fall depending on herbicide used. Best if done before plants have gone to seed.	Chainsaws, loppers, or similar equipment for cutting biomass. Chippers to reduce biomass of cut vegetation (optional). Haul trucks or similar equipment to remove cut biomass. Herbicide, surfactant, colorant, and water. Backpack sprayers, spray rigs, or similar equipment for herbicide application.	Cut target plants within 6 inches of the ground one to two months prior to spraying. Leave roots and rhizomes in the ground. Dispose of cut biomass at a landfill, chip and dispose of biomass at a landfill, or chip biomass and haul off-site for beneficial reuse. Do not chip seed bearing biomass. Apply herbicide 1 to 2 months after initial biomass removal to allow for significant resprouting (until resprouts are 2 to 4 feet tall). Apply herbicide on leaves and stems of target species.	Less herbicide needed than with foliar application without removal of biomass. Little risk of herbicide drift to non-target plants and wildlife. Little soil disturbance. Minimal potential disturbance to native plants and/or wildlife. Chipped biomass may be used for mulch or other beneficial purposes. Biomass removal may reduce flooding and fire hazard.	Waiting for resprouts after cutting may be impractical in remote areas. May be public concern with herbicide use. If extensive biomass removal is required, additional time and labor costs may be incurred.
Mechanical Removal and Spray Resprouts Shred above-ground biomass using mechanical equipment and spray resprouts with herbicide solution.	Arundo, tamarisk, herbaceous plants, small trees, any sized shrub and/or vine. Any size patch of targeted vegetation not intermixed with native plants. Areas with easy access for equipment.	Spring through fall depending on herbicide used. Best if done before plants have gone to seed.	Brush grinders, flail mowers, or similar equipment for shredding biomass. Herbicide, surfactant, colorant, and water. Backpack sprayers, spray rigs, or similar equipment for herbicide application.	Shred target plants within 6 inches of the ground 1 to 2 months prior to spraying. Leave roots and rhizomes in the ground. Leave shredded biomass in place. Apply herbicide 1 to 2 months after initial biomass removal to allow for significant resprouting (until resprouts are 2 to 4 feet tall). Apply herbicide on leaves and stems of target species.	Less herbicide needed than with foliar application without removal of biomass. Little risk of herbicide drift to non-target plants and wildlife. Effective reduction of biomass with mechanical removal. Biomass removal may reduce flooding and fire hazard.	Waiting for resprouts after cutting may be impractical in remote areas. Potential for soil disturbance and collateral impacts to native plants, wildlife, and habitat. May be public concern with herbicide use. Need suitable access for mechanical removal equipment.

Table 2-3: Authorized Removal Methods (continued)

Method	Appropriate Use	Timing	Materials and Tools	Instructions	Advantages	Disadvantages
Herbicide (continued)						
Foliar Spray Spray above-ground biomass with herbicide solution.	Arundo, tamarisk, herbaceous plants, seedling trees, any sized shrub and/or vine. Any size patch of targeted vegetation. Where no fire/flood hazard is present. Areas with easy access for equipment if lift is used.	Spring through fall depending on herbicide used. Best if done before plants have gone to seed.	Herbicide, surfactant, colorant, and water. Backpack sprayers, spray rigs, or similar equipment for herbicide application. Ladders or lifts to access tall vegetation (if needed).	Apply herbicide on leaves and stems of target species. Leave dead biomass standing to naturally degrade over time.	Effective on any size patch of targeted vegetation. Short duration of labor. Little soil disturbance. Minimal potential disturbance to native plants and/or wildlife.	Potential risk of herbicide drift to non-target plants and wildlife or adjacent sensitive receptors. May be public concern with herbicide use. Need suitable access for equipment.
Foliar Spray and Hand Removal Spray stems with herbicide solution, cut biomass after herbicide has taken effect.	Arundo, tamarisk, herbaceous plants, seedling trees, small shrubs and/or vines. Small or medium size patch of targeted vegetation. Target vegetation may be intermixed with native plants.	Spring through fall depending on herbicide used. Best if done before plants have gone to seed.	Herbicide, surfactant, colorant, and water. Backpack sprayers, spray rigs, or similar equipment for herbicide application. Ladders or lifts to access tall vegetation (if needed). Chainsaws, loppers, or similar equipment for cutting biomass. Chippers to reduce biomass of hand-cut vegetation (optional). Haul trucks or similar equipment to remove cut biomass.	Apply herbicide on leaves and stems of target species. Allow adequate time for herbicide to act. Cut dead biomass within 6 inches of the ground. Leave roots and rhizomes in the ground. Dispose of cut biomass at a landfill, chip and dispose of biomass at a landfill, or chip biomass and haul off-site for beneficial reuse.	Effective on any size patch of targeted vegetation. Little soil disturbance. Minimal potential disturbance to native plants and/or wildlife. Depending on herbicide used, chipped biomass may be used for mulch or other beneficial purposes. Biomass removal may reduce flooding and fire hazard.	Potential risk of herbicide drift to non-target plants and wildlife or adjacent sensitive receptors. May be public concern with herbicide use. If extensive biomass removal is required, additional time and labor costs may be incurred.
Foliar Spray and Mechanical Removal Spray stems with herbicide solution and shred biomass with mechanical equipment after herbicide has taken effect.	Arundo, tamarisk, herbaceous plants, seedling trees, any size shrubs and/or vines. Any size patch of targeted vegetation not intermixed with native plants. Areas with easy access for equipment.	Spring through fall depending on herbicide used. Best if done before plants have gone to seed.	Herbicide, surfactant, colorant, and water. Backpack sprayers, spray rigs, or similar equipment for herbicide application. Ladders or lifts to access tall vegetation (if needed). Brush grinders, flail mowers, or similar equipment for shredding biomass.	Apply herbicide on leaves and stems of target species. Allow adequate time for herbicide to act. Shred dead biomass within 6 inches of the ground. Leave roots and rhizomes in the ground. Leave shredded biomass in place.	Effective on any size patch of targeted vegetation. Efficient reduction of biomass for large patches of targeted vegetation. Biomass removal may reduce flooding and fire hazard.	Potential for soil disturbance and additional impacts to native plants, wildlife, and habitat. Need suitable access for equipment.
Cut Surface Treatment Make cuts around trunk and apply herbicide to cuts.	Any sized trees and shrubs only (including tamarisk). Any size patch of targeted vegetation. Target species may be intermixed with native plants. Where no fire/flood hazard is present.	Spring through fall depending on herbicide used.	Herbicide, colorant, and water. Backpack sprayers or similar equipment or herbicide injector for herbicide application. Hatchet or similar equipment for making cuts around trunk.	Make a cut or series of cuts around the circumference of the target plant with a hatchet or similar tool at a convenient height to expose the cambium layer. Spray or apply herbicide to the cut(s) to adequately wet the wound. Herbicide may also be applied with an herbicide injector at regular intervals around the trunk.	Effective on any size patch of targeted vegetation. Short duration of labor. Little risk of herbicide drift to non target plants and wildlife. Little soil disturbance. Minimal potential disturbance to native plants and/or wildlife.	May be public concern with herbicide use.

Table 2-3: Authorized Removal Methods (continued)

Method	Appropriate Use	Timing	Materials and Tools	Instructions	Advantages	Disadvantages
Herbicide (continued)						
Cut Surface Treatment and Hand Removal Make cuts around trunk and apply herbicide to cuts. After herbicide has taken effect, cut down target plant and remove biomass from site.	Trees and shrubs only (including tamarisk). Any size patch of targeted vegetation. Target species may be intermixed with native plants. For any size trunk.	Spring through fall depending on herbicide used.	Herbicide, colorant, and water. Backpack sprayers or similar equipment for herbicide application. Hatchet or similar equipment for making cuts around trunk. Chainsaws, loppers, or similar equipment for cutting biomass. Chippers to reduce biomass of hand-cut vegetation (optional). Haul trucks or similar equipment to remove cut biomass.	Apply herbicide with the cut surface method. Allow adequate time for herbicide to act. Cut trunks and/or stems of dead biomass within 6 inches of the ground. Leave roots and rhizomes in the ground. Dispose of cut biomass at a landfill or chip and dispose of biomass at a landfill.	Effective on any size patch of targeted vegetation. Little risk of herbicide drift to non-target plants and wildlife. Little soil disturbance. Minimal potential disturbance to native plants and/or wildlife. Biomass removal may reduce flooding and fire hazard.	May be public concern with herbicide use. If extensive biomass removal is required, additional time and labor costs may be incurred.
No Herbicide						
Tarping Cut target vegetation to six inches or less above ground and secure tarp or pond liner over cut vegetation for extended period of time.	Arundo, herbaceous plants, seedling trees, small shrubs, or vines. Small patch of targeted vegetation (less than 0.25 acres) not intermixed with native plants. Where there is concern about herbicide use.	Tarps applied in late spring/early summer.	Chainsaws, loppers, or similar equipment for cutting biomass. Chippers to reduce biomass of hand-cut vegetation (optional). Haul trucks or similar equipment to remove cut biomass. Thick, opaque tarps or pond liners. Stakes or weights.	Cut canes of arundo within 6 inches of the ground. Chip biomass and place over cut stems/stumps as mulch. Extra chipped biomass may be disposed of at a landfill or reused elsewhere as mulch. Lay tarps or pond liners over the cut material. Secure tarps or pond liners with stakes or weights. Tarps remain on the targeted vegetation for 2 years, but should be removed from November through April in flood areas.	High success rate. Available for active channel areas if performed during dry season. Minimal potential disturbance to native plants and/or certain wildlife. Little soil disturbance. Effective on small patches of targeted vegetation.	Limited by size of targeted vegetation area. May damage soil microorganisms. Not appropriate in active channels. Vulnerable to wind and vandalism damage and puncturing from cut stems.
Above-Ground Hand Removal Cut above-ground biomass using hand equipment.	Fan Palm >2 feet tall only. Target species may be intermixed with native plants.	Most effective during the growing season (spring through fall).	Chainsaws or similar equipment to cut biomass. Haul trucks or similar equipment to remove cut biomass.	Cut within 12 inches of the ground. Dispose of cut biomass at a landfill.	Minimal potential disturbance to native plants and/or wildlife. Little soil disturbance. Chipped biomass may be used for mulch or other beneficial purposes. Biomass removal may reduce flooding and fire hazard.	If extensive biomass removal is required, additional time and labor costs may be incurred.
Above and Below-Ground Hand Removal Hand pull or use hand equipment to remove above and below-ground biomass (only with little soil disturbance).	Herbaceous plants, seedling trees, small shrubs, or vines Not suitable for arundo or other vegetation with large root masses. Small patches of targeted vegetation. Where there is concern with herbicide use. Target species may be intermixed with native plants.	Any time of year.	Chainsaws, loppers, or similar equipment to cut above-ground biomass; or gloves to hand pull above and below-ground biomass. A "Weed Wrench™" or similar equipment for extracting below-ground biomass. Chippers to reduce biomass (optional). Haul trucks or similar equipment to remove cut biomass.	Cut target plants within 6 inches of the ground and dig up roots and rhizomes, or hand pull above and below-ground biomass. Chip biomass to reduce biomass or for beneficial reuse (optional). Dispose of all biomass at a landfill, or haul chipped biomass off-site for beneficial reuse and dispose of below-ground biomass at a landfill. Smaller trees may be removed by a "Weed Wrench™", especially in sandy soils and/or after rainfall.	Minimal potential disturbance to native plants and/or wildlife. Little soil disturbance. Effective if rhizomes and root masses are thoroughly cleared from site. Chipped biomass may be used for mulch or other beneficial purposes. Biomass removal may reduce flooding and fire hazard.	If extensive biomass removal is required, additional time and labor costs may be incurred. Requires thorough extraction of roots/ rhizomes and removal of biomass to be effective.