COOPERATIVE AGREEMENT FOR THE VENTURA RIVER WATERSHED GIANT REED REMOVAL PROJECT

Between the Ventura County Watershed Protection District and the Ojai Valley Land Conservancy

This Cooperative Agreement for the Ventura River Watershed Giant Reed Removal Project ("Agreement") is made this 14th day of September 2021, between the Ventura County Watershed Protection District (hereinafter called "District") and the Ojai Valley Land Conservancy (hereinafter called "OVLC") (District and OVLC are hereinafter collectively called "Parties").

RECITALS

WHEREAS, OVLC intends to perform the Ventura River Watershed Giant Reed Removal Project (hereinafter called "Project") to remove approximately 23.1 acres of invasive giant reed (*Arundo donax*) from San Antonio Creek and the Ventura River using funds administered through Ventura County Fire Department (hereinafter called "VCFD"); and

WHEREAS, the District and OVLC have successfully partnered on similar non-native invasive plant removal projects in the Ventura River Watershed; and

WHEREAS, the Project is located on the real property shown on the maps attached hereto as Exhibit A (hereinafter called "Sites"); and

WHEREAS, OVLC has conducted similar non-native invasive plant removal projects, either on its own or in coordination with other stakeholders, and has the necessary expertise and resources to complete the Project; and

WHEREAS, the District has obtained a permit from the California Department of Fish and Wildlife ("CDFW") for the Ventura River Invasive Plant Removal and Ecosystem Restoration Project (Streambed Alteration Agreement No. 1600-2015-0112-R5) issued on August 26, 2015 ("CDFW Permit") and has applied for an amendment to the CDFW Permit to include the Sites; and

WHEREAS, the District has obtained a permit from the U.S. Army Corps of Engineers ("USACE") for its Routine Operations and Maintenance Program (Individual Permit No. SPL-2018-00040-AJS) issued on February 25, 2020; and

WHEREAS, the District has obtained the following permits from the U.S. Fish and Wildlife Service ("USFWS") for its Routine Operations and Maintenance Program (District Project No. 80030) which cover habitat restoration projects: (1) Final Programmatic Biological and Conference Opinion (08EVEN00-2012-F-0531) issued by on December 12, 2012; (2) Reinitiated Biological Opinion (08EVEN00-2015-F-0055) issued on October 19, 2015; and (3) Reinitiated Biological Opinion

(08EVEN00-2018-F-0330) issued on December 31, 2019 (hereinafter USACE and USFWS permits collectively referred to as “Permits and Biological Opinions”); and

WHEREAS, the District is willing to allow OVLC to perform non-native invasive plant removal in the Sites using the Project Permit and the Permits and Biological Opinions (Exhibit B) subject to the terms set forth herein.

AGREEMENT

NOW, THEREFORE, IT IS AGREED by and between the Parties hereto as follows:

Section 1. Purpose.

This Agreement is entered into for the purpose of enhancing public resources by furthering interagency cooperation in completing non-native invasive plant removal within 23.1 acres within the Ventura River watershed. The Parties agree to execute such further instruments and to take such further action as may reasonably be necessary to carry out the intent of this Agreement.

Section 2. Term.

The term of this Agreement shall begin on October 1, 2021, and end on June 30, 2025.

Section 3. Scope of Work.

OVLC shall conduct giant reed removal and retreatment work at the Sites by methods in compliance with the Project Permit and the Permits and Biological Opinions, and Best Management Practices (Exhibit C).

Section 4. Schedule.

All work at the Project Sites under this Agreement shall be completed by June 30, 2025.

Section 5. Regulatory Responsibilities and Obligations.

The District makes no warranty or representation as to the suitability of the Project Permit or the Permits and Biological Opinions (Exhibit B) for use on the Project or as to approval or non-acceptance by CDFW and USFWS, or any other regulatory authority with respect to the Project. OVLC acknowledges and agrees that it has not relied on any such representations by District.

The Parties acknowledge and understand that the decision to authorize the Project under the District’s Streambed Alteration Agreement for the Ventura River Invasive Plant Removal and Ecosystem Restoration Project and the District’s Routine Operations and Maintenance Program and to allow coverage of the Project under the Biological Opinions is within the sole discretion of the respective regulatory agencies

(i.e., CDFW and USFWS). The District agrees to notify the respective regulatory agencies of the existence of this Agreement and of the District's consent given herein. In the event that any of the required regulatory agencies withholds or rescinds its authorization, then the District's responsibilities and obligations under this Agreement will terminate.

OVLC warrants and represents that if approved by CDFW, USACE, and USFWS, OVLC will carry out the Project in conformance with all provisions of the Streambed Alteration Agreement No. 1600-2015-0112-R5, as amended, and the District's Routine Operations and Maintenance Program Permits and Biological Opinions, including but not limited to any take allowed, the Reasonable and Prudent Measures specified in the Biological Opinions to minimize the impacts of the Project, and all terms and conditions of the Permits and Biological Opinions.

The District will be responsible for Project oversight and reporting to the regulatory agencies under the District's Streambed Alteration Agreement for the Ventura River Invasive Plant Removal and Ecosystem Restoration Project and the District's Routine Operations and Maintenance Program.

It is mutually understood and agreed that this Agreement in no manner modifies the regulatory responsibilities and obligations of the Parties. Any such responsibilities and obligations remain the same, while this Agreement is in force, as they were before this Agreement was made. Except as expressly provided, OVLC shall be responsible for obtaining any and all permits, licenses, and approvals required for performing any work on the Project. OVLC shall be responsible for observing and complying with any applicable federal, state, and local laws, rules or regulations affecting the Project.

Section 6. Best Management Practices.

OVLC shall adhere to and enforce compliance with all of the Best Management Practices listed in Exhibit C attached hereto.

Section 7. Inspection.

All work on the Project is subject to inspection by District for compliance with the Project Permit, the Permits and Biological Opinions, and the best management practices set forth in Exhibit C. OVLC shall ensure that the District and its authorized representatives have access to the Sites at all times.

Section 8. Relationship of Parties.

Nothing herein is intended to create or is to be construed as creating a joint venture, partnership, agency, or other entity between the Parties. The rights and obligations of the Parties shall be independent of one another and shall be limited to those expressly set forth herein.

Section 9. Indemnification and Hold Harmless.

OVLC shall defend, indemnify, and hold District, its officers, employees, and agents harmless from and against any and all liability, loss, expense (including reasonable attorney's fees), or claims for injury or damages arising out of its performance of this Agreement but only in proportion to and to the extent such liability, loss, expense, attorney's fees, or claims for injury or damages are caused by or result from the negligent or intentional acts or omissions of OVLC, its officers, agents, or employees.

This section shall survive the termination or expiration of this Agreement.

Section 10. Insurance.

OVLC, at its sole cost and expense, shall obtain and maintain, or cause its contractor to obtain and maintain, in full force during the term of this Agreement, the following types of insurance:

(a) General Liability "occurrence" coverage in the minimum amount of $1,000,000 combined single limit (CSL) bodily injury & property damage each occurrence and $2,000,000 aggregate, including personal injury, broad form property damage, products/completed operations, broad form blanket contractual and $50,000 fire legal liability.
(b) Automobile Liability coverage in the minimum amount of $1,000,000 CSL bodily injury & property damage, including owned, non-owned, and hired automobiles. Also, to include uninsured/Underinsured Motorists coverage in the minimum amount of $100,000 when there are owned vehicles. UCSB must have on file evidence of auto insurance in the minimum amount of $100,000 CSL bodily injury & property damage for all employees and volunteers associated with the contract.
(c) Workers' Compensation coverage, in full compliance with California statutory requirements, for all employees and Employer's Liability in the minimum amount of $1,000,000. All insurance required will be primary coverage as respects District and any insurance or self-insurance maintained by District will be excess of this insurance coverage and will not contribute to it.
(d) The District, its Board, officers, employees, agents, and volunteers are to be named as Additional Insured as respects work done under the terms of this Agreement on all policies required (except Workers' Compensation and Professional Liability).

Section 11. Disputes

In the event of any dispute, claim, question, or disagreement arising from or relating to this agreement or the breach thereof, the Parties shall use their best efforts to settle the dispute, claim, question, or disagreement. To this effect, they shall consult and negotiate with each other in good faith and, recognizing their mutual interests, attempt to reach a just and equitable solution satisfactory to both Parties.

Section 12. Termination.

Either District or OVLC may terminate this Agreement for any reason by giving 60 days' notice of termination in writing to the other party.

Section 13. Assignment.

This Agreement may not be assigned without advance written consent of District.

Section 14. Entire Agreement.

This Agreement constitutes the complete and exclusive understanding of the Parties and supersedes all prior understandings and agreements, whether written or oral, with respect to the subject matter herein, and correctly sets forth the rights, duties, and obligations of each to the other.

Section 15. Amendment.

This Agreement may be amended only upon the written approval of the Parties.

Section 16. No Third-Party Beneficiaries.

Nothing expressed or mentioned in this Agreement is intended or shall be construed to give any entity or person, other than the Parties, any legal or equitable right, remedy or claim under or in respect of this Agreement or any provisions herein contained.

Section 17. Notices

All notices required under this Agreement will be made in writing and addressed or delivered as follows:

TO DISTRICT: Ventura County Watershed Protection District
800 South Victoria Avenue
Ventura, California 93009
Attn: Mr. Glenn Shephard, P.E., Director

TO OVLC: Ojai Valley Land Conservancy
PO Box 1092
Ojai, CA 93024
Attn: Mr. Thomas Maloney, Executive Director

Either party may, by giving written notice in accordance with this paragraph, change the names or addresses of the persons of departments designated for receipt of future notices. When addressed in accordance with this paragraph and deposited in the United States mail, postage prepaid, notices will be deemed given on the third day following

such deposit in the United States mail. In all other instances, notices will be deemed given at the time of actual delivery.

Section 18. Governing Law; Venue.

This Agreement shall be governed by the laws of the State of California and venue for any legal action or proceeding shall be in the Superior Court for the State of California, County of Ventura.

Section 19. Execution of Agreement.

This Agreement may be executed in counterpart and the signed counterparts shall constitute a single instrument.

IN WITNESS WHEREOF, the Parties have executed this Agreement on the dates opposite their respective signatures:

Thomas W Maloney 09/07/21

Mr. Tom Maloney Date
Executive Director, Ojai Valley Land Conservancy

Mr. Glenn Shephard, P.E. Date
Director, Watershed Protection District

Exhibit A
Site Maps

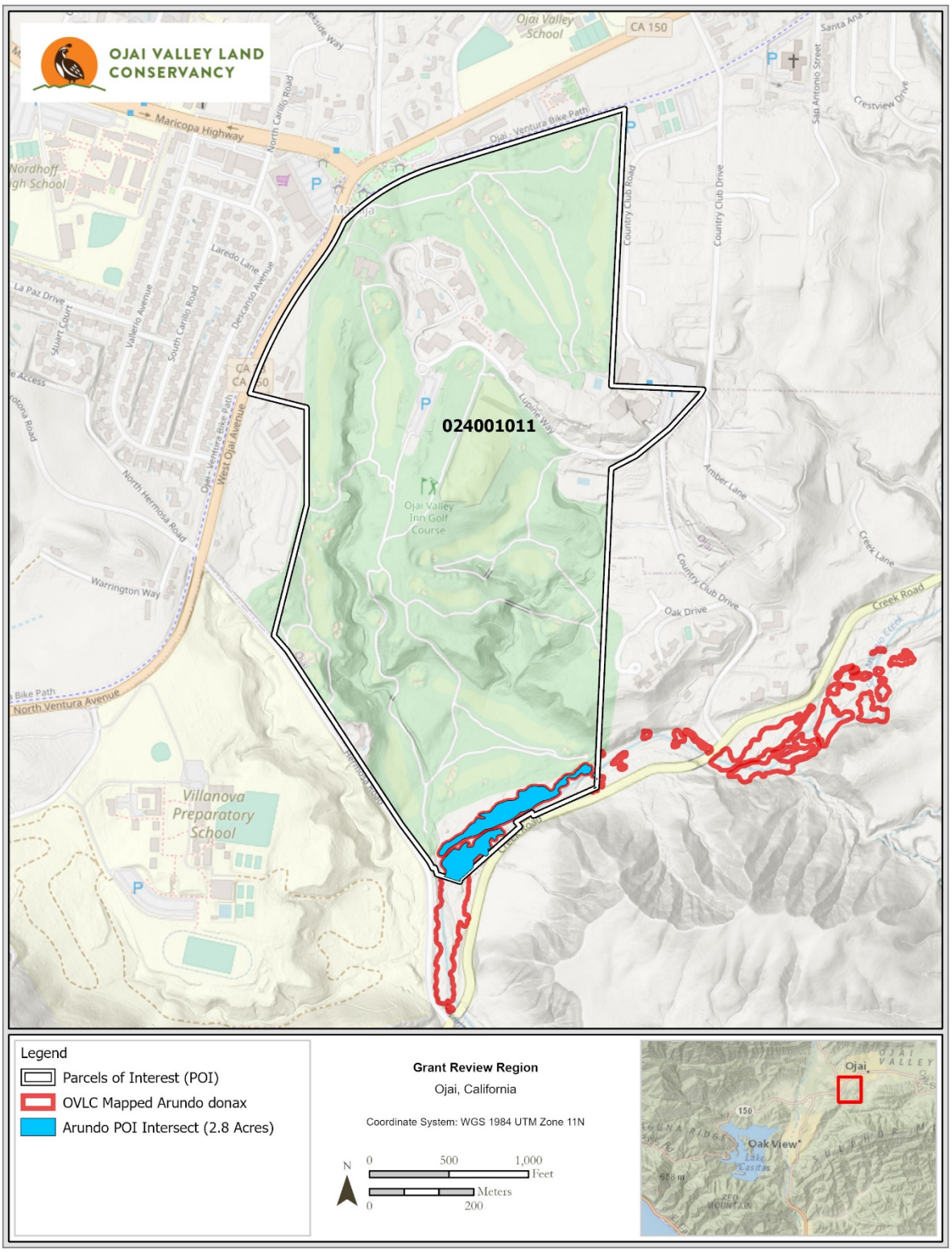


Exhibit A
Site Maps

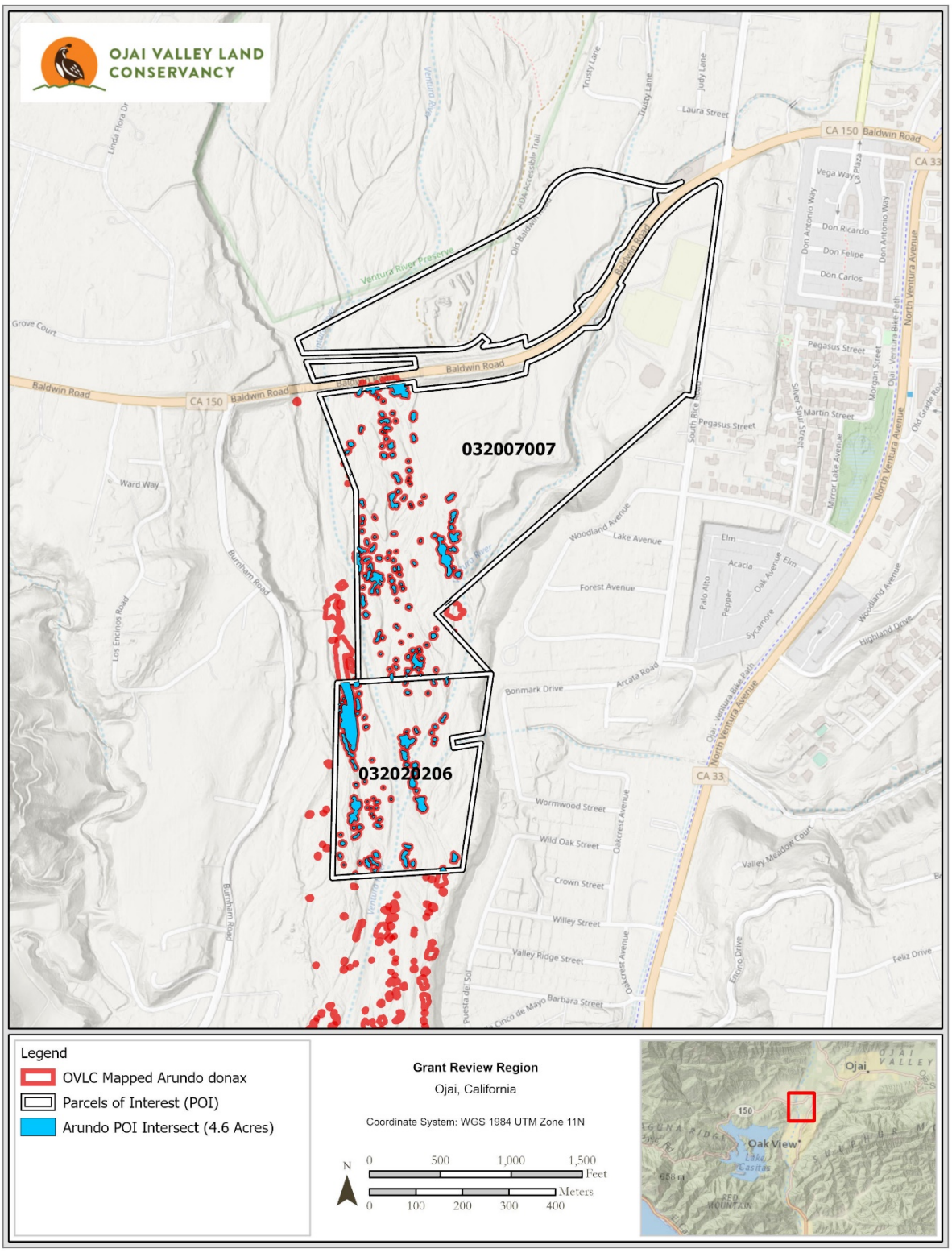


Exhibit A
Site Maps

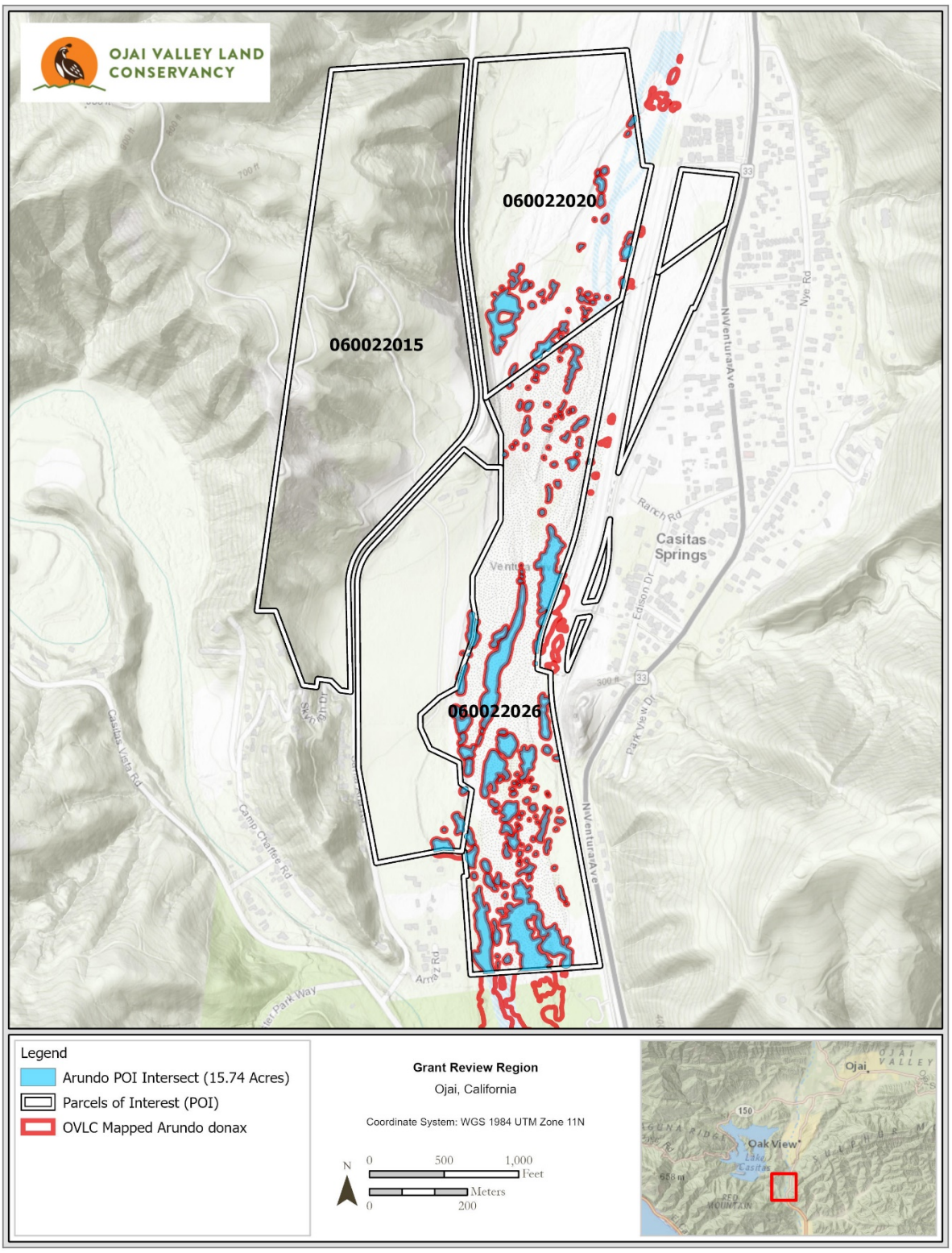


Exhibit B

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
South Coast Region
3883 Ruffin Road
San Diego, CA 92123
(858) 467-4201
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

April 13, 2020

Glenn Shephard
Ventura County Watershed Protection District
800 S. Victoria Ave., Ventura, CA 93009
Email: Glenn.Shephard@ventura.com
Phone number: (805) 624-2040

Dear Mr. Shephard

Extension of Lake or Streambed Alteration Agreement, Notification No. 1600-2015-0112-R5, Ventura River Invasive Plant Removal and Ecosystem Restoration Project

The California Department of Fish and Wildlife (CDFW) received your request to extend Lake or Streambed Alteration Agreement (Agreement) and extension fee, for the above referenced Agreement. CDFW hereby grants your request to extend the Agreement expiration from July 1, 2020 to June 30, 2025. All other conditions in the original Agreement remain in effect.

Copies of the original Agreement and this letter must be readily available at project worksites and must be presented when requested by a CDFW representative or other agency with inspection authority.

If you have any questions regarding this letter, please contact Emily Galli, Environmental Scientist at (805) 524-0901 or by email at Emily.Galli@wildlife.ca.gov.

Sincerely,

DocuSigned by:
Steve Gibson
614D9A782D93439...

Steve Gibson
Senior Environmental Scientist (Supervisor)

Ec: CDFW
Emily Galli, ES Specialist – Fillmore
Emily.Galli@wildlife.ca.gov

Malinda Santonil, SSA – Los Alamitos
Malinda.Santonil@wildlife.ca.gov

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
South Coast Region
3883 Ruffin Road
San Diego, CA 92123
www.wildlife.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

August 26, 2015

Elizabeth Martinez
Ventura County Watershed Protection District
800 S. Victoria Avenue
Ventura, CA 93009

Subject: Final Lake or Streambed Alteration Agreement
Notification No. 1600-2015-0112-R5
Ventura River Invasive Plant Removal and Ecosystem Restoration Project

Dear Ms. Martinez:

Enclosed is the final Streambed Alteration Agreement (Agreement) for the Ventura River Invasive Plant Removal and Ecosystem Restoration Project (Project). Before the California Department of Fish and Wildlife (Department) may issue an Agreement, it must comply with the California Environmental Quality Act (CEQA). In this case, the Department, acting as a Responsible Agency, filed a Notice of Determination (NOD) within five working days of signing the Agreement. The NOD was based on information contained in the Environmental Impact Report prepared by the lead agency.

Under CEQA, the filing of an NOD triggers a 30-day statute of limitations period during which an interested party may challenge the filing agency's approval of the Project. You may begin the Project before the statute of limitations expires if you have obtained all necessary local, state, and federal permits or other authorizations. However, if you elect to do so, it will be at your own risk.

If you have any questions regarding this matter, please contact Jeff Humble, Environmental Scientist at 805-652-1868 or Jeff.Humble@wildlife.ca.gov

Sincerely,

Betty J. Courtney
Environmental Program Manager

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE
SOUTH COAST REGION
3883 RUFFIN ROAD
SAN DIEGO, CA 92123

LAKE or STREAMBED ALTERATION AGREEMENT
NOTIFICATION NO. 1600-2015-0112-R5
VENTURA RIVER

VENTURA COUNTY WATERSHED PROTECTION DISTRICT
VENTURA RIVER INVASIVE PLANT REMOVAL & ECOSYSTEM RESTORATION PROJECT

This Streambed Alteration Agreement (Agreement) is entered into between the California Department of Fish and Wildlife (CDFW) and the Ventura County Watershed Protection District (Permittee).

RECITALS

WHEREAS, pursuant to Fish and Game Code (FGC) section 1602, Permittee notified CDFW on June 22, 2015, that Permittee intends to complete the project described herein.

WHEREAS, pursuant to FGC section 1603, CDFW has determined that the project could substantially adversely affect existing fish or wildlife resources and has included measures in the Agreement necessary to protect those resources.

WHEREAS, Permittee has reviewed the Agreement and accepts its terms and conditions, including the measures to protect fish and wildlife resources.

NOW THEREFORE, Permittee agrees to complete the project in accordance with the Agreement.

PROJECT LOCATION

The project is located on three sites within the Ventura River, west of Highway 33, from south of Foster Park to north of the confluence with San Antonio Creek in unincorporated County of Ventura, State of California. Rio Vista Preserve: 119° 15' 29.165" W Latitude 34° 23' 29.294" N Longitude; upper Steelhead Preserve: 119° 18' 34.939" W Latitude 34° 23' 0.487" N Longitude; Lower Steelhead Preserve 119° 18' 30.856" W Latitude 34° 22' 37.337" N Longitude; Foster Park Preserve: 119° 17' 58.172" W Latitude 34° 20' 52.162" N Longitude.

PROJECT DESCRIPTION

Permittee proposes to remove non-native, invasive plant species in the Ventura River Watershed and contribute to the broader Matilija Dam Ecosystem Restoration Project. The primary invasive species targeted will be giant reed (*Arundo donax*), with fennel (*Foeniculum vulgare*), Scotch broom (*Cytisus scoparius*), tamarisk (*Tamarix* spp.), cape ivy (*Delairea oderata*) and castor bean (*Ricinus communis*) as secondary targets in the lower Ventura River area. The removal of the invasive plants is part of the Matilija Dam Ecosystem Restoration Project; this project component is funded by Watersheds Coalition of Ventura County

Proposition 84, IRWMP Implementation Grant, Round 2. Approximately 27.9 acres of invasive species within 144.3 acres will be treated primarily by cut and daub (glyphosate only and glyphosate/imazapyr) for initial treatment and either cut and daub or foliar herbicide application. An option for shredding giant reed that is present in high densities prior to treating it with an herbicide will be included in the project specifications.

Initial removal will take approximately 60 working days and will begin fall, 2015. Follow-up retreatments will occur approximately quarterly through May, 2019. No grading or other ground disturbance will occur and no water diversions will occur. Backpack applicators or small off-road vehicles with tanks and hoses will be used to apply herbicide during retreatment. Permittee is not proposing to re-vegetate the treated areas but will rely on natural recruitment.

Permittee has developed the "Invasive Plant Removal Plan for the Ventura River Invasive Plant Removal and Ecosystem Restoration Project", dated June, 2015. This Plan addresses in detail the different aspects of the project, methods of removal and re-treatment of non-native vegetation, schedule of activities, impacts to resources, and performance monitoring. Permittee shall implement all the best management practices, as described in Chapter 8 of the Plan.

PROJECT IMPACTS

Based on existing resource data and information received from Permittee, existing fish or wildlife resources the project could substantially adversely affect include: **Fishes**: tidewater goby (*Eucyclogobius newberryi*), steelhead (*Oncorhynchus mykiss irideus*); **Amphibians**: coast range newt (*Taricha torosa torosa*), foothill yellow-legged frog (*Rana boylii*), western spadefoot toad (*Spea hammondii*), red-legged frog (*Rana aurora*); **Reptiles**: silvery legless lizard (*Anniella pulchra pulchra*), coast horned lizard (*Phrynosoma coronatum*), southwestern pond turtle (*Actinemys marmorata pallida*), coastal western whiptail (*Cnemidophorus tigris multiscutatus*), two-striped garter snake (*Thamnophis hammondii)*, coast garter snake (*Thamnophis elegans terrestris*); **Birds**: red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), great-horned owl (*Bubo virginianus*), burrowing owl (*Athene cunicularia*), Cooper's hawk (*Accipiter cooperii*), yellow warbler (*Dendroica petechia brewsteri*), yellow-billed cuckoo (*Coccyzus americanus occidentalis*), yellow-breasted chat (*Icteria virens*), least Bell's vireo (*bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii extimus*), loggerhead shrike (*Lanius ludovicianus*), tri-colored blackbird (*Agelaius tricolor*), Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), horned lark (*Eremophila alpestris*), Northern harrier (*Circus cyaneus*), snowy egret (*Egretta thula*), great horned owl (*Bubo virginianus*), acorn woodpecker, (*Melanerpes formicivorus*), Bewick's wren (*Thryomanes bewickii*), song sparrow (*Melospiza melodia*); **Mammals**: woodrat (*Neotoma spp.*), American badger (*Taxidea taxus*), ringtail cat (*Bassariscus astutus*), Dulzura pocket mouse (*Chaetodipus californicus femoralis*), western mastiff bat (*Eumops perotis*), Mexican long-tongued bat (*Choeronycteris mexicana*), yuma myotis (*Myotis yumanensis*); **Native Plant Communities**: Coast Live Oak Riparian Woodland, California Walnut Woodland, Southern Cottonwood Willow Riparian Woodland, Southern Riparian Scrub; and all other aquatic and wildlife resources in the area, including the riparian vegetation that provides habitat for such species in the area.

The adverse effects the project could have on fish and wildlife resources identified above include: Temporary impacts associated with work activities, including noise, use of heavy machinery, and decreased use of the project areas by wildlife. This work will also result in the temporary loss of vegetation and vegetative cover, a temporary increase in sedimentation where ground disturbance occurs, and disturbance of bird nesting activities and nesting behavior during re-treatment activities. These impacts will occur within a 144.3 acre area, of which 27.9 acres consist of non-native vegetation to be removed. Permittee does not propose to

have any permanent impacts associated with this project.

MEASURES TO PROTECT FISH AND WILDLIFE RESOURCES

1. Administrative Measures

Permittee shall meet each administrative requirement described below.

1.1 Documentation at Project Site. Permittee shall make the Agreement, any extensions and amendments to the Agreement, and all related notification materials and California Environmental Quality Act (CEQA) documents, readily available at the project site at all times and shall be presented to CDFW personnel, or personnel from another state, federal, or local agency upon request.

1.2 Providing Agreement to Persons at Project Site. Permittee shall provide copies of the Agreement and any extensions and amendments to the Agreement to all persons who will be working on the project at the project site on behalf of Permittee, including but not limited to contractors, subcontractors, inspectors, and monitors.

1.3 Notification of Conflicting Provisions. Permittee shall notify CDFW if Permittee determines or learns that a provision in the Agreement might conflict with a provision imposed on the project by another local, state, or federal agency. In that event, CDFW shall contact Permittee to resolve any conflict. If any subsequent provisions related to the project and not addressed prior to the issuance of this Agreement, then CDFW shall be contacted to discuss possibility of amending this Agreement.

1.4 Project Site Entry. Permittee agrees that CDFW personnel may enter the project site at any time to verify compliance with the Agreement, provided any safety issues are addressed beforehand.

1.5 Personnel Compliance On-site. If Permittee or any employees, agents, contractors and/or subcontractors violate any of the terms or conditions of this Agreement, all work shall terminate immediately and shall not proceed until CDFW has been contacted and the issue remedied, or CDFW has taken all of its legal actions.

1.6 Pre-Work Briefing. A pre-construction meeting/briefing shall be held involving all the contractors and subcontractors, concerning the conditions in this Agreement.

1.7 Notification of Project Activities. Permittee shall notify CDFW at least five days prior to the start of project activities. This notification shall either be: a) submitted to CDFW Regional Office, at 3883 Ruffin Road, San Diego, CA, 92123, Attn: Streambed Alteration Staff, b) sent electronically to CDFW inbox via email at: R5LSACompliance@wildlife.ca.gov For these notifications, please reference Agreement No. 1600-2015-0112-R5 in the subject line.

1.8 Project Documentation Submitted to CDFW. All required reports, survey results, and other project documentation shall be shall be submitted to CDFW regional office, at 3883 Ruffin Road, San Diego, CA, 92123, Attn: Streambed Alteration Staff, or, may be sent electronically to the CDFW streambed program inbox via email at: R5LSACompliance@wildlife.ca.gov Please reference Agreement No. 1600-2015-0112-R5 in the subject line.

1.9 Time Sensitive Documents Submitted to CDFW. For time sensitive documents, please submit to CDFW using one of the above methods while simultaneously providing it to the local CDFW staff/contact for this Agreement via the most appropriate and agreed upon method.

1.10 Private Landowner Consent. If project activities are conducted on private property that is not owned by Permittee or property owned by an established conservancy, then documentation of "landowner consent" shall be obtained and provided to CDFW upon request. To date, a list has been provided of all the stakeholders/land owners involved with this project.

2. Avoidance and Minimization Measures

To avoid or minimize adverse impacts to fish and wildlife resources identified above, Permittee shall implement each measure listed below.

Biological Surveys and Species Protection

2.0 Pre-Project Surveys. For initial removal activities, Permittee shall have a qualified biologist conduct pre-project surveys within a 1-2 week period prior to the start of project activities. Pre-project surveys shall include general wildlife and botanical surveys within the work area and a surrounding buffer. Survey results shall be submitted to CDFW (including being summarized in an email) at least three days prior to the start of work. These surveys shall not be required for re-treatment activities provided a biological monitor is present to walk the site in advance of the re-treatment work crews.

2.1 Surveys for Nesting/Breeding Birds. Permittee shall avoid work activities during the period from February 1st to September 15th to avoid impacts to breeding/nesting birds (non-raptors). Additionally, Permittee shall avoid work activities during the raptor nesting season, which is estimated to be January 31st to September 1st. If work cannot be avoided during these times, then prior to vegetation disturbance activities, Permittee shall have a qualified biologist conduct 3 separate surveys, 3 days apart, and in compliance with the U.S. Fish and Wildlife Service modified survey protocols (WPD Biological Opinion) for state and federally listed species. During these surveys, all bird breeding and nesting activity shall be recorded. The final survey shall occur no later than 72 hours prior to the start of work and survey results shall be summarized and submitted to CDFW prior to the start of work.

2.2 Observed Breeding and/or Nesting for Bird or Raptor Species. If any bird or raptor nesting and/or breeding activities are observed during the required surveys, Permittee shall contact CDFW immediately to determine how best to proceed. If work is proposed within 500 feet of a nesting area, then Permittee shall be required to draft a detailed "Bird Nesting Avoidance and Minimization Plan" that includes avoidance and minimization measures to ensure the nesting/breeding area(s) are not impacted in any manner by project activities. Be advised, native bird species are protected by the Federal Migratory Bird Treaty Act and Sections 3503, 3503.5 and 3513 of the California Fish and Game Code.

2.3 Surveys for Sensitive Botanical Resources. Pre- project surveys shall determine if suitable habitat for sensitive botanical resources is present within the work area. If suitable habitat or individuals are present, Permittee shall implement avoidance and/or mitigation measures to ensure these resources are not impacted. Permittee shall utilize the CDFW "Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities" (November 24, 2009) document, which can be located on the CDFW website.

2.4 Sensitive Species Protection Plan (SSPP). For any special status species that are observed or are known to occur within the project areas, Permittee shall develop a SSPP, including best management practices (BMP's), for the protection of those species. The SSPP shall be approved by CDFW prior to the start of work.

2.5 Observation of Special Status Species During the Work Term. During project activities, if any state threatened, or endangered species are observed within the work area, Permittee shall cease all work within a 500-foot radius from where the sighting occurred and shall contact CDFW immediately to determine if and under what conditions work shall recommence. For the observation of species of special concern or rare species, Permittee shall cease all work within a 150-foot radius from where the sighting occurred, make CDFW aware of the sighting, and proceed with work utilizing the measures in the SSPP.

2.6 On-Site Biological Monitoring. A qualified biological monitor shall be on-site during initial giant reed removal activities, re-treatments, and work within sensitive habitats or areas where special status species may be present. The on-site biological monitor shall be responsible for: a) locating a safe and pre-determined relocation area(s) suitable for the host of species that may be encountered; b) have the authority to temporarily stop work activities to resolve any biological issues; c) educate the contractors and equipment operators regarding the conditions of this Agreement; d) ensuring escape ramps or covers are installed at the end of each work day to prevent wildlife getting trapped in excavated/exposed work areas; e) visually check all sections of open pipe/construction materials for the presence of wildlife sheltering within them prior to the pipe sections being enclosed; and, h) make note of any mortality of native species observed during project activities.

2.7 Red-Legged Frog Protection. Permittee shall use the US Fish & Wildlife Service "Revised Guidance on Site Assessment and Field Surveys for the California Red-legged Frog" (August 2005) to determine if project activities may impact this species. Any survey results shall be provided to CDFW.

2.8 Work Within Steelhead Habitat. No work shall be conducted within the flowing or ponded water which has potential to support southern coastal steelhead. If the proposed maintenance occurs within areas where steelhead may be present, then prior to work, Permittee shall have a qualified fisheries biologist conduct a survey of the proposed work area.

2.9 Threatened and/or Endangered Species. An Incidental Take Permit (ITP) from CDFW may be required if the project, project construction, or any project-related activity during the life of the project will result in "take," as defined by the Fish and Game Code, of any species protected by the California Endangered Species Act (CESA; Fish & G. Code, §§86, 2080, 2081, subd. (b), (c)). This Agreement does not authorize take of any rare, threatened or endangered species that may occur within or adjacent to the proposed work area. If there is a potential for take, Permittee may request consultation with CDFW and obtain the necessary state permits and/or submit plans to avoid any impacts to the species. Consultation with federal agencies would be required to receive take authority for federally threatened and endangered species.

2.10 Environmental Education Program/Materials. Educational materials shall be developed and incorporated into a brief environmental training, to be conducted for all project personnel entering the work area.

2.11 Night Work Restriction. Permittee activities shall be limited to the period of daylight hours to limit disturbances on wildlife activity; no night work is authorized unless deemed an emergency situation as described within Fish and Game Code, Section 1610.

2.12 Secure Open Pipes to Preclude Wildlife Entrapment. Permittee, where possible, shall make an effort to secure all vertical and open metal pipes (PVC pipes, fence posts, stand-pipes, irrigation pipes, vents, heavy equipment piping) within a work or maintenance area to prevent wildlife from entering and being trapped within an open pipe.

2.13 Reporting Sensitive Species Observations to the California Natural Diversity Database (CNDDB). Permittee shall be responsible for reporting all observations of threatened, endangered, or species of special concern to California Natural Diversity Data Base (CNDDB) within 10 days after the observation. When observation forms are submitted via e-mail, please include local CDFW personnel. Please submit these forms for all previous observations of threatened, endangered, or species of special concern within 30 days after this Agreement has been executed.

2.14 Non-Native Aquatic Organisms. Any non-native aquatic species encountered during project activities shall be removed from the area and disposed of. A Sport Fishing License may be needed for these activities. This information can be found on the CDFW website at: http://www.dfg.ca.gov/licensing/

Vegetation Removal

2.15 Protection of Native Vegetation in the Work Area. Boundaries of the work area limits shall be flagged prior to the start of work. Native shrubs and trees within the work area shall be protected to prevent damage from equipment use and soil compaction within the dripline.

2.16 Vegetation Removal in Temporary Impact Areas. In areas where vegetation needs to be temporarily removed for access or other activities, native trees and shrubs shall be cut down to near ground level, trampled on, or driven over without being removed, or, if removal is required then the root system shall be left intact.

2.17 Stockpiled Vegetation Debris. Vegetation removed from the stream shall not be stockpiled in the stream bed or on its bank overnight. The sites selected on which to push this material out of the stream should be selected in compliance with the other provisions of this Agreement.

Vehicles and Equipment

2.18 Equipment and Vehicle Check. Any equipment or vehicles driven and/or operated adjacent to a stream shall be checked prior to work and then maintained daily to prevent fluid leaks or contamination. No equipment maintenance shall occur within or near any stream channel, where petroleum products or other pollutants from the equipment may enter these areas.

2.19 Temporary Access for Equipment. If access to a stream areas is required (and work cannot be done from the top of bank), Permittee shall install a temporary ramp, access route, or other structure to gain access to the maintenance area. After the work is completed, any materials shall be removed and the areas shall be restored to an original condition and

topography unless otherwise approved. No heavy equipment shall be operated in flowing water. If access is required, CDFW shall be consulted prior to the start of work.

2.20 Staging and Vehicle Storage. Staging/storage areas for equipment and materials shall be located outside any stream or drainage channel.

2.21 Decontamination of Vehicles/Heavy Equipment. Permittee shall decontaminate vehicles and other project-related equipment too large to immerse in a hot water bath by pressure washing with hot water a minimum of 140°F at the point of contact or 155°F at the nozzle. Decontamination shall focus on the tires and other potentially submerged areas of a vehicle. Following the hot water wash, Permittee shall dry all vehicles and other large equipment as thoroughly as possible. All equipment shall be washed and free of weed seeds prior to delivery to the site.

2.22 Decontamination Sites. Decontamination of vehicles, watercraft, other project gear and equipment shall occur in a designated location where runoff can be contained and not allowed to pass into CDFW jurisdictional areas and other sensitive habitat areas.

Pollution Prevention and Litter Control Measures

2.23 Deleterious Materials. No debris, soil, silt, sand, bark, slash, sawdust, rubbish, construction waste, cement or concrete or washings thereof, asphalt, paint, oil or other petroleum products or any other substances which could be hazardous to aquatic life shall be allowed to contaminate the soil and/or enter into or placed where it may be washed by rainfall or runoff into, waters of the State. Any of these materials, placed within or where they may enter a stream, by Permittee or any party working under contract, or with the permission of Permittee, shall be removed immediately.

2.24 Post Work Site Clean-Up. When project-related activities are completed, any excess materials or debris shall be removed from within the work area boundaries according to the Invasive Plant Removal Plan. Permittee shall comply with all litter and pollution laws. All contractors, subcontractors and employees shall also obey these laws and it shall be the responsibility of Permittee to ensure compliance.

2.25 Spill Containment for Equipment. Stationary equipment such as motors, pumps, generators, and welders, shall be positioned over drip pans. Stationary heavy equipment shall have suitable containment to handle a catastrophic spill/leak.

2.26 Wash Water. Water containing mud, silt, or other pollutants from equipment washing or other activities, shall not be allowed to enter a lake or flowing stream or placed in locations that may be subjected to high storm flows.

Sedimentation, Erosion, and Turbidity Control Measures

2.27 Precautions to Minimize Work Related Turbidity. Measures shall be included in project planning to prevent any excess siltation or turbidity of the work area, areas downstream of the work area, or areas that are re-watered.

2.28 Silt Catchment Basin Usage. If silt catchment basins are used, the basins must be constructed across the stream immediately downstream of the project site. Catchment basins shall be constructed of materials that are free from mud and silt. Upon completion of the project, all basin materials along with the trapped sediments shall be removed from the stream to prevent sediment from entering the stream.

2.29 Silt Settling Basins. Silt settling basins, if used, must be located away from the stream to prevent discolored, silt-bearing water from reaching the stream or basin during any flow regime.

2.30 Off-Stream Siltation Ponds. If off-stream siltation ponds are used to control sediment, the ponds must be constructed in a location, or must be designed, such that potential spills into a flowing stream during periods of high water levels/flow do not occur.

2.31 Non-native Plant Removal: Permittee shall remove non-native plants per the Invasive Plant Removal Plan (June, 2015) for the Ventura River Invasive Plant Removal and Ecosystem Restoration Project. Permittee shall target invasive species described in the Project Description of this agreement and follow removal methodologies in the Plan. All plant materials removed from the project area shall be disposed of in a manner and location that prevents its reestablishment elsewhere, and to prevent re-infestation of giant reed removal areas by other non-native species.

2.32 Herbicide Use: Permittee shall follow non-native plant control methods described in the Invasive Plant Removal Plan. Permittee shall employ only those herbicides, such as Rodeo/Aquamaster (Glyphosate), and imazapyr, which are approved for aquatic use when working near or over water. If surfactants are required, they shall be restricted to non-ionic chemicals, such as Agri-Dex, which are approved for aquatic use. All herbicide products shall contain a dye to prevent over-application. No foliar application shall be implemented when wind speed exceeds 5 mph.

3.0 Mitigation Measures and Best Management Practices

To compensate for potential impacts to fish and wildlife resources identified above, Permittee shall implement each measure listed below.

3.1 Compensatory Mitigation for Areas of Disturbance: Permittee shall not temporarily impact more than 144.3 acres and shall not have any permanent impacts. This project consists of the removal of non-native vegetation to benefit the resources and is considered a self-mitigating project.

3.2 Re-vegetation of Work Areas. If the project area(s), as shown within the monitoring reports, do not exhibit signs of native recruitment and native vegetation growth, Permittee shall make an effort to re-vegetate these areas, or, conduct further re-treatments to allow native vegetation to become established. If these treated areas are not becoming established (or showing signs of becoming established) with native vegetation to a level compared to adjacent, un-impacted reference sites, then Permittee shall confer with CDFW to determine the causes and what steps need to be taken to establish an intact native habitat that will prevent future establishment of the project's target species.

3.3 Tree Removal Impacts: In the event that project activities result in the mortality of any oak, black walnut, alder, or sycamore trees greater than 4 inches diameter at breast height (DBH), they shall be replaced in-kind at a 10:1 replacement to impact ratio. Valley oaks shall be replaced in-kind at a 15:1 ratio. Elderberry, cottonwood, and willow trees over 4-inches at DBH shall be replaced at 5:1.

3.4 Replacement Plantings. A brief plan or memo shall be developed to address replacement plantings and shall include the species to be planted, the number and species of trees removed, location where planting will occur, irrigation methodology, and a monitoring and maintenance program. Planting, maintenance, and monitoring activities shall be overseen by a specialist familiar with restoration of native plants. Planting shall not occur within private property, easements, fuel modification zones, or areas of future maintenance.

3.5 Success Criteria: Planted trees shall have a minimum of 80% survival the first year and 100% survival thereafter for five years. Oaks, walnuts and elderberries shall reach a height of at least three feet at three years and six feet after five years. Alders, sycamores, cottonwoods and willows shall reach six feet in three years and 10 feet in five years. If the survival and other requirements described in this Agreement and in the submitted documents have not been met, Permittee is responsible for additional planting to achieve these requirements. These replacement plants shall be monitored with the same survival and growth requirements.

3.6 Plant sources: Any replacement tree stock, which cannot be grown from cuttings or seeds, shall be obtained from a native plant nursery, and shall be ant free. Permittee shall provide a list of all materials which must be obtained from other than onsite sources.

4. Reporting Measures

Permittee shall meet each reporting requirement described below. Reports should include the Agreement number and project name on the front cover or within the first sentence of the report.

4.1 Annual report: An annual report shall be submitted to CDFW by December 31 of each year after implementation until December, 2019, when funding for this project expires. This report shall include a summary of the activities conducted, wildlife encountered, best management practices, native plant re-establishment, etc. An overview of the revegetation and exotic plant control efforts, and the method used to assess these parameters shall also be included. Photos from designated photo stations shall be included. Permittee shall submit quarterly reports to CDFW that are prepared for and submitted to the granting agency, which contain the required information.

4.2 Final report: Permittee shall provide a final project report to CDFW no later than two months after the project is fully completed. The report at a minimum shall contain total impact areas, number of trees removed or damaged, if any spills occurred, mortality of any species, and if any species were relocated. Permittee shall submit the final project report prepared for and submitted to the granting agencies, which contains the required information.

CONTACT INFORMATION

Any communication that Permittee or CDFW submits to the other shall be in writing and any communication or documentation shall be delivered to the address below by U.S. mail, fax, or email, or to such other address as Permittee or CDFW specifies by written notice to the other.

To Permittee:
Tully Clifford
Ventura County Watershed Protection District
800 S. Victoria Avenue
Ventura, CA 93009
tully.clifford@ventura.org

To CDFW:
Department of Fish and Wildlife
South Coast Region
3883 Ruffin Road
San Diego, California 92123
Attn: Lake and Streambed Alteration Program
Notification #1600-2015-0112-R5
Streambed Program Inbox: R5LSACompliance@Wildlife.ca.gov

LIABILITY

Permittee shall be solely liable for any violations of the Agreement, whether committed by Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents or contractors and subcontractors, to complete the project or any activity related to it that the Agreement authorizes.

This Agreement does not constitute CDFW's endorsement of, or require Permittee to proceed with the project. The decision to proceed with the project is Permittee's alone.

SUSPENSION AND REVOCATION

CDFW may suspend or revoke in its entirety the Agreement if it determines that Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, is not in compliance with the Agreement.

Before CDFW suspends or revokes the Agreement, it shall provide Permittee written notice by certified or registered mail that it intends to suspend or revoke. The notice shall state the reason(s) for the proposed suspension or revocation, provide Permittee an opportunity to correct any deficiency before CDFW suspends or revokes the Agreement, and include instructions to Permittee, if necessary, including but not limited to a directive to immediately cease the specific activity or activities that caused CDFW to issue the notice.

ENFORCEMENT

Nothing in the Agreement precludes CDFW from pursuing an enforcement action against Permittee instead of, or in addition to, suspending or revoking the Agreement.

Nothing in the Agreement limits or otherwise affects CDFW's enforcement authority or that of its enforcement personnel.

OTHER LEGAL OBLIGATIONS

This Agreement does not relieve Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, from obtaining any other permits or authorizations that might be required under other federal, state, or local laws or regulations before beginning the project or an activity related to it.

This Agreement does not relieve Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, from complying with other applicable statutes in the FGC including, but not limited to, FGC sections 2050 *et seq*. (threatened and endangered species), 3503 (bird nests and eggs), 3503.5 (birds of prey), 5650 (water pollution), 5652 (refuse disposal into water), 5901 (fish passage), 5937 (sufficient water for fish), and 5948 (obstruction of stream).

Nothing in the Agreement authorizes Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, to trespass.

AMENDMENT

CDFW may amend the Agreement at any time during its term if CDFW determines the amendment is necessary to protect an existing fish or wildlife resource.

Permittee may amend the Agreement at any time during its term, provided the amendment is mutually agreed to in writing by CDFW and Permittee. To request an amendment, Permittee shall submit to CDFW a completed CDFW "Request to Amend Lake or Streambed Alteration" form and include with the completed form payment of the corresponding amendment fee identified in CDFW's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5).

TRANSFER AND ASSIGNMENT

This Agreement may not be transferred or assigned to another entity, and any purported transfer or assignment of the Agreement to another entity shall not be valid or effective, unless the transfer or assignment is requested by Permittee in writing, as specified below, and thereafter CDFW approves the transfer or assignment in writing.

The transfer or assignment of the Agreement to another entity shall constitute a minor amendment, and therefore to request a transfer or assignment, Permittee shall submit to CDFW a completed CDFW "Request to Amend Lake or Streambed Alteration" form and include with the completed form payment of the minor amendment fee identified in CDFW's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5).

EXTENSIONS

In accordance with FGC section 1605(b), Permittee may request one extension of the Agreement, provided the request is made prior to the expiration of the Agreement's term. To request an extension, Permittee shall submit to CDFW a completed CDFW "Request to Extend Lake or Streambed Alteration" form and include with the completed form payment of the

extension fee identified in CDFW's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5). CDFW shall process the extension request in accordance with FGC 1605(b) through (e). If Permittee fails to submit a request to extend the Agreement prior to its expiration, Permittee must submit a new notification and notification fee before beginning or continuing the project the Agreement covers (Fish & G. Code, § 1605, subd. (f)).

EFFECTIVE DATE

The Agreement becomes effective on the date of CDFW's signature, which shall be: 1) after Permittee's signature; 2) after CDFW complies with all applicable requirements under the California Environmental Quality Act (CEQA); and 3) after payment of the applicable FGC section 711.4 filing fee listed at http://www.CDFW.ca.gov/habcon/ceqa/ceqa_changes.html.

TERM

This Agreement shall expire on **July 1st, 2020**, unless it is terminated or extended before then. All provisions in the Agreement shall remain in force throughout its term. Permittee shall remain responsible for implementing any provisions specified herein to protect fish and wildlife resources after the Agreement expires or is terminated, as FGC section 1605(a)(2) requires.

AUTHORITY

If the person signing the Agreement (signatory) is doing so as a representative of Permittee, the signatory hereby acknowledges that he or she is doing so on Permittee's behalf and represents and warrants that he or she has the authority to legally bind Permittee to the provisions herein.

AUTHORIZATION

This Agreement authorizes only the project described herein. If Permittee begins or completes a project different from the project the Agreement authorizes, Permittee may be subject to civil or criminal prosecution for failing to notify CDFW in accordance with FGC section 1602.

CONCURRENCE

The undersigned accepts and agrees to comply with all provisions contained herein.

FOR VENTURA COUNTY WATERSHED PROTECTION DISTRICT

Tully Clifford
Director

7/17/2015
Date

FOR DEPARTMENT OF FISH AND WILDLIFE

Betty Courtney
Environmental Program Manager

Aug 26, 2015
Date

Agreement Prepared by: Jeff Humble, Environmental Scientist

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, LOS ANGELES DISTRICT
60 SOUTH CALIFORNIA STREET, SUITE 201
VENTURA, CA 93001-2598

February 25, 2020

SUBJECT: Initial Proffered Standard Individual Permit

Glenn Shephard
Ventura County Watershed Protection District
800 South Victoria Avenue
Ventura, California 93009-1610

Dear Mr. Shephard

I received your application for a Department of the Army Permit application, dated January 16, 2018. Enclosed are two copies of the permit (ENG FORM 1721) authorizing you to discharge fill into waters of the U.S., in association with the VCWPD Routine Operation and Maintenance Activities Program. The proposed work would take place within various waters of the U.S. throughout Ventura County, California.

THIS PERMIT WILL NOT BECOME VALID UNTIL ALL OF THE FOLLOWING STEPS HAVE BEEN COMPLETED:

1. The owner or authorized responsible official must sign and date both copies of the permit indicating that he/she agrees to the work as described and agrees to comply with all conditions stated in the permit.

2. Both signed copies of the permit must be returned to the U.S. Army Corps of Engineers (Corps) at the above address (Attention: CESPL-RG). Upon receipt of the signed copies, the Corps will sign and forward one of the copies back to you.

Furthermore, you are hereby advised that the Corps has established an Administrative Appeal Process that is fully described in 33 CFR Part 331. The complete appeal process is diagrammed in the enclosed Appendix B. If you object to the terms or special conditions of this permit, you may submit the attached appeal form stating your objections and describing your proposed modifications to the permit terms and special conditions to:

Colonel Aaron C. Barta, District Engineer
Los Angeles District, U.S. Army Corps of Engineers
915 Wilshire Boulevard, Suite 930
Los Angeles, California 90017
Telephone (213) 452-3961
Email: Aaron.C.Barta@usace.army.mil

The District Engineer would then evaluate your objections and determine whether it is appropriate to change some, all, or none of the terms and special conditions of the permit. The permit would then be provided to you a second time, at which point you could accept the permit, appeal the permit conditions to the Corps South Pacific Division office, or withdraw your permit request.

If we do not receive the signed copies of the permit by March 25, 2020, your request for the proposed work will be withdrawn. It is not necessary to submit an appeal form unless you object to the conditions of the permit.

Thank you for participating in the Regulatory Program. If you have questions, please contact me at (805) 484-2147or via e-mail at antal.j.szijj@usace.army.mil. Please help me to evaluate and improve the regulatory experience for others by completing the customer survey form at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey.

Sincerely,

Digitally signed by SZIJJ.ANTAL.J.1231776784
Date: 2020.02.25 14:10:31 -08'00'

Antal Szijj
Team Lead
Ventura Field Office
North Coast Branch

Enclosures

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL		
Applicant: Ventura County Watershed Protection District	File Number: SPL-2018-00040-AJS	Date: FEBRUARY 25, 2020
Attached is:		See Section below
X	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/cecw/pages/reg_materials.aspx or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.

- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:

Antal Szijj
Project Manager
U.S. Army Corps of Engineers
Los Angeles District
60 South California Street, Suite 201
Ventura, CA 93001-2598
Phone: (805) 585-2147
Email: Antal.J.Szijj@usace.army.mil

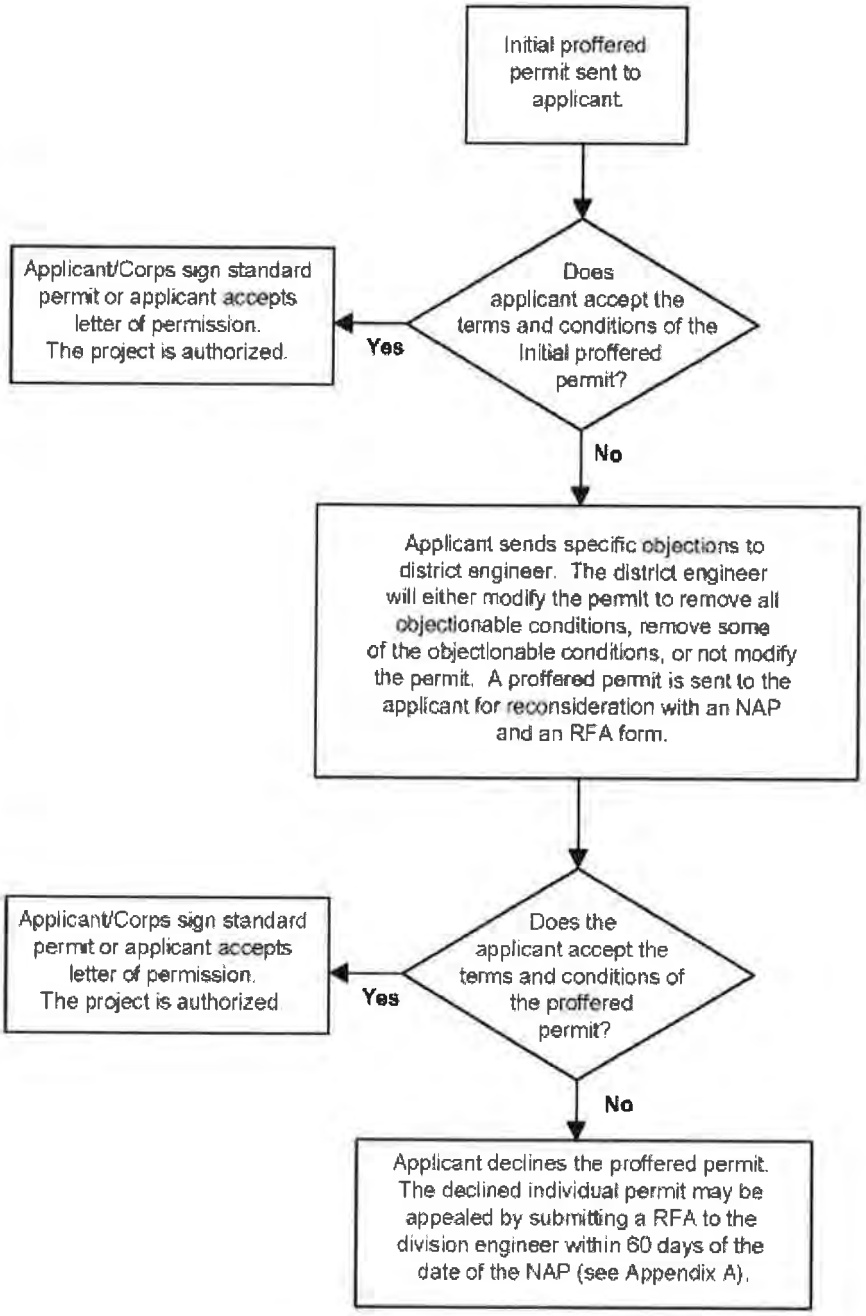
If you only have questions regarding the appeal process you may also contact: Thomas J. Cavanaugh

Administrative Appeal Review Officer
U.S. Army Corps of Engineers
South Pacific Division
450 Golden Gate Ave.
San Francisco, California 94102
Phone: (415) 503-6574
Fax: (415) 503-6646
Email: thomas.j.cavanaugh@usace.army.mil

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

	Date:	Telephone number:
_____ Signature of appellant or agent.		

Applicant Options with Initial Proffered Permit



Appendix B

DEPARTMENT OF THE ARMY PERMIT

Permittee: Ventura County Watershed Protection District (VCWPD); Glenn Shephard

Project Name: VCWPD Routine Operation and Maintenance Program

Permit Number: SPL-2018-00040-AJS

Issuing Office: Los Angeles District

Note: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description:

To construct structures and/or conduct work in or affecting "navigable waters of the United States" pursuant to Section 10 of the Rivers and Harbors Act of 1899, and to discharge fill into waters of the U.S. pursuant to Section 404 of the Clean Water Act of 1972, in association with the VCWPD Routine Operation and Maintenance Activities Program as shown on the attached drawings.

Specifically, you are authorized to:

1. Conduct routine maintenance of "Covered Facilities" including levees, storm drains, debris basins, grade control structures, stream gauges, culverts, and appurtenant structures to all of the above. A complete list of Covered Facilities is provided in Attachment 1. Authorized maintenance includes in-kind structural repairs, sediment and vegetation removal to restore baseline conditions, erosion repair, and temporary surface water diversions to facilitate maintenance and repairs. Minor deviations in the structure's configuration or filled area, including those due to changes in materials, construction techniques, requirements of other regulatory agencies, or current construction codes or safety standards that are necessary to make repairs are also authorized.
2. Implement the "Beach Elevation Management Plan" adjacent to Ormond Lagoon and Ormond Beach near the city of Port Hueneme.
3. Conduct exotic vegetation removal including, but not limited to, giant reed (*Arundo donax*) and tamarisk (*Tamarix* sp.) within waters of the U.S. when required for compensatory mitigation purposes or as stand-alone efforts as funds become available (e.g. through watershed improvement grants).

Project Location: Various locations associated with Covered Facilities within Ventura County, California.

Permit Conditions:

General Conditions:

1. The time limit for completing the authorized activity ends on **February 25, 2030**. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification from this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished with the terms and conditions of your permit.

Special Conditions:

1. No maintenance activity authorized under this programmatic individual permit, with the exception of those listed below, shall be implemented until the permittee receives written notification from the Corps (in the form of a notice to proceed) verifying compliance with the terms and conditions of the permit. The Corps may at its discretion include additional project-specific special conditions in the notice to proceed to ensure impacts are minimal. The notice to proceed will also indicate whether any specific maintenance activity or activities do not comply with the permit. The permittee may elect to modify such activities

to meet the terms and conditions of the permit or to apply for separate authorization under an alternative permit process (e.g. nationwide permit, standard individual permit, or other general permit). The following maintenance activities do not require project-specific authorization from the Corps and are authorized by default unless such activities may affect a federally listed threatened or endangered species or its designated critical habitat:

a) Routine debris removal and repairs to structural components in debris and detention basins that do not result in the removal of woody vegetation
b) In-kind repairs to fully lined concrete channels in non-tidal waters
c) Temporary surface water diversions and dewatering that may be required to accomplish a) or b)

2. The permittee shall submit annual maintenance plans by April 1 of each year providing the following information for all maintenance activities proposed for the upcoming maintenance year. Supplemental plans may be submitted to address maintenance actions that are unforeseen at the time of the annual plan submission. With the exception of those activities listed in Special Condition 1 a-c, activities proposed in any supplemental plan(s) shall also require written verification from the Corps before work is authorized to begin. Annual maintenance plans and any supplements shall also be provided to the Los Angeles Regional Water Quality Control Board, California Coastal Commission Office of Federal Compliance, U.S. Fish & Wildlife Service (FWS) and National Marine Fisheries Service (NMFS). Annual maintenance plans and any supplements shall include the following information:
   a) List of proposed maintenance activities to be implemented during the upcoming maintenance year including the name of each facility where maintenance is proposed and the need for each maintenance activity;
   b) maps and drawings clearly depicting location, proposed work limits and impacts of each maintenance activity prepared in accordance with the Corps Los Angeles District Map and Drawing Standards;
   c) environmental BMPs to be implemented at each maintenance activity;
   d) total area of temporary impacts to waters of the United States and associated habitat types at each maintenance activity;
   e) total area of permanent impact to waters of the United States and associated habitat types at each maintenance activity;
   f) approximate dates and duration of each maintenance activity;
   g) proposed compensatory mitigation (if required);
   h) extent of any suitable habitat for federally listed threatened and endangered species in the project vicinity including but not limited to designated critical habitat;
   i) disposal sites for any sediment/debris excavated from a facility in excess of 50 cubic yards.

3. The permittee shall submit a compliance report of all maintenance activities authorized under the RGP during the previous maintenance year no later than August 1 following each maintenance year during which maintenance activities authorized under this RGP are conducted. The compliance report shall include the following information:
   a) Summary of all authorized maintenance activities completed under the RGP;
   b) summary of any authorized maintenance activities not completed and their status (postponed, in-progress, etc);

c) compliance with BMPs applied to each completed maintenance activity;
d) results of pre-project biological surveys and biological monitoring during construction;
e) compliance with RGP special conditions;
f) representative photographs of completed maintenance activities;
g) monitoring reports for any approved permittee-responsible compensatory mitigation implemented for activities authorized under the RGP in accordance with the special conditions included at the time of approval;
h) all instances of non-compliance with the terms and conditions of the RGP and/or special conditions included in the notice to proceed.

4. This Corps permit does not authorize you to take the following threatened and endangered species: Coastal California gnatcatcher (*Polioptila californica californica*), least Bell's vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii extimus*), California least tern (*Sternula antillarum browni*), western snowy plover (*Charadrius nivosus nivosus*), western yellow-billed cuckoo (*Coccyzus americanus),* California red-legged frog (*Rana draytonii*), tidewater goby (*Eucyclogobius newberryi*), Southern California coastal steelhead trout (*Oncorhynchus mykiss*), Gambel's watercress (*Nasturtium [Rorippa] gambellii*), and marsh sandwort (*Arenaria paludicola*); or to adversely modify designated critical habitat for the coastal California gnatcatcher, western snowy plover, California red-legged frog, tidewater goby, and steelhead trout. In order to legally take a listed species, you must have separate authorization under the Endangered Species Act (ESA) (e.g. ESA Section 10 permit, or a Biological Opinion (BO) under ESA Section 7, with "incidental take" provisions with which you must comply). The enclosed FWS and NMFS BOs (nos. 08DEVEN00-2018-F-0330 and WCR-2018-9054, respectively) contain mandatory terms and conditions to implement the reasonable and prudent measures that are associated with incidental take that is also specified in the BO. Your authorization under this Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with incidental take of the attached BOs, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the BO, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with your Corps permit. The FWS and NMFS are the appropriate authorities to determine compliance with the terms and conditions of their respective BOs and with the ESA.

5. Incidents where any individuals of southern steelhead trout (*Oncorhynchus mykiss*) listed by NOAA Fisheries under the Endangered Species Act appear to be injured or killed as a result of discharges of dredged or fill material into waters of the United States or structures or work in navigable waters of the United States authorized by this NWP shall be reported to NOAA Fisheries, Office of Protected Resources at (301) 713-1401 and the Regulatory Office of the Los Angeles District of the U.S. Army Corps of Engineers at (805) 585-2147. The finder should leave the plant or animal alone, make note of any circumstances likely causing the death or injury, note the location and number of individuals involved and, if possible, take photographs. Adult animals should not be disturbed unless circumstances arise where they are obviously

injured or killed by discharge exposure, or some unnatural cause. The finder may be asked to carry out instructions provided by NOAA Fisheries, Office of Protected Resources, to collect specimens or take other measures to ensure that evidence intrinsic to the specimen is preserved.

6. The permittee shall fully implement all environmental BMPs as applied to each maintenance activity described in the annual work plan and any addenda.

7. Beach grooming activity at Ormond Beach authorized under this RGP shall follow the "Beach Elevation and Management Plan" including all avoidance and minimization measures as described in Section 3.7 of the "Final Environmental Impact Report J Street Drain Project Ventura County, California" prepared by HDR Engineering and dated January 2012, and revised access plans dated February 2013.

8. Any temporary surface water diversions required to implement authorized maintenance activities shall adhere to the "Water Diversion Guide for the Program Environmental Impact Report" prepared on behalf of VCWPD by URS and dated November 2007.

9. Pursuant to 36 C.F.R. section 800.13, in the event of any discoveries during construction of either human remains, archeological deposits, or any other type of historic property, the Permittee shall notify the Corps' Regulatory Division at 805-585-2147 and Archeology Staff within 24 hours (Danielle Storey at 213-452-3855 OR Meg McDonald at 213-452-3849). The Permittee shall immediately suspend all work in any area(s) where potential cultural resources are discovered. The Permittee shall not resume construction in the area surrounding the potential cultural resources until the Corps Regulatory Division reauthorizes project construction, per 36 C.F.R. section 800.13.

10. Authorization of maintenance activities within the following Covered Facilities is contingent upon the issuance of a Coastal Zone Management Act (CZMA) consistency certification by the California Coastal Commission:
    - Ventura River levee and associated secondary channels (from downstream terminus to 5,830 feet upstream)
    - San Jon Barranca
    - Prince Barranca
    - Arundell Barranca downstream of US 101
    - Doris Avenue Drain
    - Oxnard West Drain
    - Silver Strand Drain System
    - Hueneme Drain (downstream of Hueneme Road) and Pump Station
    - tšumaš Creek (downstream of Hueneme Road)
    - Ormond Lagoon Waterway (downstream of Hueneme Road)
    - Lower Revolon Slough
    - Lower Calleguas Creek (to approx. 5 miles upstream of Hwy 1

The Permittee shall abide by the terms and conditions of the CZMA consistency certification. The Permittee shall submit the CZMA consistency certification to the Corps Regulatory Division (preferably via email) within two weeks of receipt from the issuing state agency. The Permittee shall not proceed with construction until receiving an email or other written notification from Corps Regulatory Division acknowledging the CZMA consistency certification has been received, reviewed, and determined to be acceptable. If the California Coastal Commission fails to act on a request for concurrence with your certification within six months after receipt, please notify the Corps so we may consider whether to presume a concurrence pursuant to 33 CFR 325.2(b)(2)(ii).

Further Information:

1. Congressional Authorities. You have been authorized to undertake the activity described above pursuant to:

(X) Section 10 of the River and Harbor Act of 1899 (33 U.S.C. 403).

(X) Section 404 of the Clean Water Act (33 U.S.C. 1344).

( ) Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data. The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measure ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give you favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

2/27/2020

Glenn Shephard, P.E.
Director
Watershed Protection District
Ventura County Public Works

DATE

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

3/2/2020

Antal Szijj
Team Lead
North Coast Branch
Regulatory Division

DATE

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

TRANSFEREE

DATE

Master Index of Facilities with Work Codes
USACE

This Index of Facilities includes facilities by Reach Number with Work Codes.

Zone 1: Ventura River Watershed			
List #	**Facility Name**	**Reaches**	**Work Codes**
1	Cozy Dell/ McDonald Canyon/ Bypass & Dam	41311/ 41301, 41302, 41303/ 41911	PS41, PS42, PT21, PT26, PT34-37, PT41, PT42, PT43, PT44, PT45, PT55, PT89, PT32, PT70, PT76,PT48, PT61, PT77, PT92, PT25, PT40, PT53, PT56, PT57, PT66, PT80, PT88
2	Dent Drain/ Dent 2°/ Dent Debris Basin	41121, 41122, 41124/ 41721/ 41903	PS41, PS42, PT21, PT26, PT32, PT34-37, PT41, PT42, PT43, PT53, PT55, PT76, PT80, PT89, PT92, PT61, PT70, PT25, PT40, PT44, PT45, PT56, PT57, PT66, PT77, PT88
3	Fox Canyon	41421, 41422, 41423, 41424	PT23, PT24, PT28, PT32, PT41, PT61
4	Happy Valley Drain/ Happy Valley Drain South	41281, 41282, 41283, 41284, 41285	PS41, PS42, PT21, PT26, PT28, PT32, PT41, PT42, PT43, PT53, PT55, PT60, PT76, PT80, PT89, PT92, PT24, PT26, PT61, PT64, PT65, PT77
5	Howard Ave 2°	41717	PS41, PS42, PT32, PT34, PT41, PT42, PT43, PT45, PT48, PT76, PT89, PT92
6	Kenewa St. 2°	41716	PS41, PS42, PT26, PT28, PT32, PT41, PT42, PT43, PT61, PT76, PT89
7	Live Oak Creek Diversion & Dam	41217, 41218, 41904	PT34, PT 36, PT41, PT42, PT43, PT44, PT45, PT53, PT55, PT61, PT66, PT70, PT76, PT85, PT89, PT92 PS41, PS42, PT24, PT25, PT60, PT96
8	Matilija Dam	41901	PS41, PS42, PT25, PT32, PT34, PT40, PT41, PT42, PT43, PT44, PT45, PT53, PT55, PT56, PT57, PT66, PT70, PT76, PT77, PT80, PT88, PT89, PT92
9	Matilija Hot Springs Gauge Maintenance	602	PT21, PT22, PT32, PT42, PT43, PT89
10	Mirror Lake Drain/ Tributary	41231, 41232/ 41241	PS41, PS42, PT32, PT34, PT41, PT42, PT43, PT48, PT61, PT76, PT83, PT89, PT92, PT21, PT53, PT55
11	North Fork Matilija Creek Stream Gauge	604	PT21, PT22, PT32, PT42, PT43, PT89
12	Oakview Drain	41205	PS41, PS42, PT29, PT41, PT42, PT43, PT76, PT77, PT85, PT89

Master Index of Facilities with Work Codes
USACE

Zone 1: Ventura River Watershed Continued			
List #	**Facility Name**	**Reaches**	**Work Codes**
13	Prince Barranca/ San Jon Barranca	41561, 41562, 41563, 41564/ 41551, 41552, 41553 41554	PS41, PS42, PT28, PT32, PT41, PT42, PT43, PT53, PT55, PT60, PT64, PT65, PT76, PT77, PT89, PT93, PT26, PT34, PT48, PT61, PT62, PT66, PT70, PT83, PT92, PT26, PT24
14	San Antonio Creek at Casitas Springs Stream Gauge	605	PT21, PT22, PT32, PT42, PT43, PT89
15	San Antonio Creek Spreading Grounds	41915	PT32, PT33, PT34, PT40, PT41, PT42, PT43, PT45, PT51, PT53, PT55, PT60, PT61, PT64, PT66, PT70, PT76, PT83, PT86, PT89, PT91
16	Santa Ana Creek Stream Gauge	606	PT32, PT43
17	Skyline Drain/ Felix Drive 2°	41221, 41222, 41223, 41224, 41712	PS41, PS42, PT26, PT28, PT32, PT41, PT42, PT43, PT45, PT48, PT60, PT61, PT65, PT70, PT76, PT89, PT92
18	Stewart Canyon/ Stewart Debris Basin	41411, 41412, 41413, 41414/ 41902	PS41, PS42, PT26, PT28, PT35-37, PT41, PT42, PT43, PT45, PT48, PT53, PT57, PT60, PT61, PT64, PT76, PT80, PT89, PT90, PT92, PT55, PT56, PT62, PT25, PT32, PT34, PT40, PT44, PT66, PT70, PT77, PT88
19	Thacher Creek at Boardman Road Stream Gauge	669	PT21, PT22, PT32, PT42, PT43, PT89
20	Thatcher Creek	41443	PS41, PS42, PT21, PT34, PT41, PT42, PT43, PT45, PT48, PT60, PT66, PT68, PT70, PT76, PT77, PT80, PT89, PT92
21	Ventura River at Foster Park Stream Gauge	608	PT21, PT22, PT32, PT42, PT43, PT89
22	Vince St. 2°/ Stanley Ave Drain/ Simpson St. 2°/ Ramona St. 2°/ Peking 2°/ Parkview Drive 2°/ Harrison 2°/ Freeway Side Drains 1-5/ Cal-Trans 2°/ Canada Larga/ Canada de San Joaquin/	41732/ 41110/ 41731/ 41730/ 41729/ 41727/ 41751, 41752, 41753, 41754, 41755/ 41728/ 41152/ 41131, 41132, 41134	PS41, PS42, PT41, PT42, PT26, PT43, PT48, PT53, PT55, PT66, PT70, PT76, PT89, PT92, PT32, PT34, PT56, PT58, PT61, PT62, PT65, PT80, PT64

Master Index of Facilities with Work Codes
USACE

Zone 1: Ventura River Watershed Continued			
List #	**Facility Name**	**Reaches**	**Work Codes**
23	Parkview Drive 2°/ Fresno Canyon	41701/ 41181, 41182	PS41, PS42, PT25,PT35-37, PT41, PT42, PT43, PT48, PT60, PT61, PT65, PT70, PT76, PT89, PT25, PT32, PT34, PT40, PT43, PT44, PT45, PT53, PT55, PT57, PT66, PT77, PT80, PT88, PT92
24	ME-VR2: Stream gage at Ojai Valley Sanitary District bank protection site	41016	PT22, PT32, PT 41, PT42, PT43, PT45
Zone 2: Santa Clara River Watershed			
1	Adams Debris Basin	43906	PS41, PS42, PT25, PT32, PT34,PT35-37, PT40, PT41, PT42,PT43, PT44, PT45, PT53, PT55, PT56, PT57, PT66, PT70, PT76, PT77, PT80, PT88, PT89, PT92
2	Arundell Barranca Dam/ Det. Basin/ Reservoir Barranca/ Barlow Barranca/ Mills Road Drain/ Telephone Road Drain	42401, 42402, 42403, 42404, 42405, 42406, 42407, 42408, 42409/ 42901/ 42441, 42421, 42423/ 42411/ 42432	PS41, PS42, PT26, PT28, PT32, PT35-37, PT41, PT42, PT43, PT45, PT48, PT53, PT55, PT60, PT61, PT76, PT80, PT89, PT92, PT34, PT64, PT77, PT93, PT20, PT70, PT25, PT40, PT44, PT57, PT66, PT29, PT85
3	Bardsdale Ditch	43161	PS41, PS42, PT21, PT34, PT41, PT42, PT43, PT45, PT53, PT55, PT56, PT65, PT66, PT80, PT89, PT64, PT70, PT72, PT32, PT44, PT60, PT92
4	Basolo Ditch	43191	PS41, PS42, PT21, PT23, PT34, PT41, PT42, PT43, PT48, PT53, PT55, PT56, PT61, PT89, PT92
5	Beardsley Wash/ Camarillo Hills Drain/ Nyeland Drain, Nyeland Trib. Lateral A/ Santa Clara Ave. Drain & Diversion/ Revelon Slough/ Wright Road Drain	42151, 42152, 42154/ 42131/ 42161, 42162, 42171/ 42191, 42192, 42193, 42181/ 42101, 42102, 42104/ 42201	PS41, PS42, PT26, PT27, PT28, PT32, PT34, PT41, PT42, PT43, PT53, PT55, PT56, PT58, PT60, PT61, PT64, PT65, PT66, PT76, PT77, PT85, PT89, PT92, PT47, PT25, PT80, PT23, PT70, PT74, PT62, PT31, PT40,PT44, PT88, PT93
6	Brown Barranca/ Saticoy Drain & 2°	42511, 42512, 42514/ 42521, 42522	PS41, PS42, PT22, PT32, PT34, PT41, PT42, PT43, PT48, PT53, PT70, PT74, PT77, PT89, PT92, PT56, PT57, PT60, PT61, PT64, PT66, PT80, PT90, PT83
7	Cavin Road Drain/ Debris Basin	43221, 43222/ 43902	PS41, PS42, PT21, PT28, PT35-37, PT41, PT42, PT43, PT49, PT89, PT92, PT32, PT25, PT34, PT40, PT44, PT45, PT53, PT55, PT56, PT57, PT66, PT70, PT76, PT77, PT80, PT88

Master Index of Facilities with Work Codes
USACE

Zone 2: Santa Clara River Watershed Continued			
List #	**Facility Name**	**Reaches**	**Work Codes**
8	Doris Drain	42381	PS41, PS42, PT26, PT28, PT32, PT34, PT41, PT42, PT43, PT47, PT53, PT55, PT56, PT58, PT60, PT61, PT64, PT65, PT66, PT70, PT77, PT83, PT85, PT89, PT92
9	Ellsworth Barranca	42552	PS41, PS42, PT41, PT42, PT74, PT89
10	Fagan Canyon/ Debris Basin	43051, 43052, 43053, 43054, 43055, 43056/ 43907	PS41, PS42, PT20, PT21, PT32, PT34, PT35-37, PT41, PT42, PT43, PT48, PT53, PT55, PT76, PT89, PT92, PT26, PT28,PT60, PT61, PT64, PT77, PT70, PT74, PT25, PT40, PT44, PT45, PT56, PT57, PT66, PT80, PT88
11	Franklin Barranca/ Debris Basin/ Wason Barranca	42531, 42532, 42534/ 42902/ 42541/ 42542	PS41, PS42, PT25, PT32, PT34, PT 35-37, PT40, PT41, PT42, PT43, PT44, PT45, PT53, PT55, PT56, PT57, PT66,PT70, PT72, PT76, PT77, PT80, PT83, PT88, PT89, PT92, PT20, PT21, PT60, PT74, PT24, PT26, PT28, PT48, PT60, PT61, PT64, PT85, PT22
12	Grimes Canyon	43181, 43182	PS41, PS42, PT20, PT21, PT26, PT34, PT41, PT42, PT43, PT55, PT56, PT61, PT62, PT65, PT87, PT89, PT92, PT24, PT28, PT32, T48, PT60, PT64, PT66, PT76, PT77, PT80, PT85
13	Harmon Barranca/ Ondulando Barranca/ Ondulando Basin	42471, 42472, 42473, 42474, 42475, 42476, 42477, 42478/ 42481, 42482/ 42903	PS41, PS42, PT20, PT21, PT41, PT42, PT43, PT49, PT55, PT56, PT60, PT64, PT70, PT77, PT89, PT92, PT32, PT34, PT53, PT80, PT44, PT48, PT61, PT66, PT76
14	Hopper Creek Stream Gauge	701	PT22, PT32, PT43
15	Hueneme Drain/ Hueneme Pump Station/ tšumaš Creek	42332, 42333/ 42321, 42322	PS41, PS42, PT21, PT23, PT28, PT29, PT41, PT42, PT43, PT53, PT55, PT56, PT57, PT60, PT61, PT70,PT74, PT76, PT77, PT86, PT89, PT26, PT32, PT64, PT83, PT87, PT92, PT22, PT32, PT45, PT64, PT65, PT66, PT92 , PT26

Master Index of Facilities with Work Codes
USACE

Zone 2: Santa Clara River Watershed Continued			
List #	**Facility Name**	**Reaches**	**Work Codes**
16	Ormond Lagoon Waterway/ Rice Road Drain	42301, 42302, 42303, 42304/ 42311, 42312, 42313, 42314, 42317, 42318, 42319	PS41, PS42, PT41, PT42, PT43, PT53, PT55, PT56, PT57, PT61, PT64, PT89, PT24, PT26, PT28, PT32, PT34, PT49, PT60,PT76, T92, PT58, PT80, PT83, PT85, PT87, PT45, PT62, PT65, PT66, PT23, PT58
17	Oxnard West Drain/ West Wooley Road Drain	42351, 42352, 42353, 42354, 42355/ 42361, 42362	PS41, PS42, PT24, PT28, PT32, PT41, PT42, PT43, PT45, PT60, PT61, PT64, PT85, PT89, PT92, PT76, PT87, PT26, PT93, PT34, T53, PT55
18	Peck Road Drain	43041, 43042, 43043	PS41, PS42, PT26, PT28, PT41, PT42, PT43, PT45, PT48, PT53, PT55, PT60, PT61, PT89, PT92, PT76, PT77
19	Piru Storage & Stockpile	43009	PS41, PS42, PT41, PT42, PT31, PT34, PT43, PT44, PT53, PT55, PT56, PT57, PT60, PT64, PT66, PT70, PT76, PT88, PT89
20	Pole Creek	43202, 43203	PS41, PS42, PT25, PT32, PT34, PT35-37, PT40, PT41, PT42, PT43, PT44, PT45, PT53, PT55, PT56, PT57, PT66, PT70, PT76, PT77, PT80, PT88, PT89, PT92, PT21, PT23, PT26, PT28, PT31, PT60, PT61, PT64, PT65, PT87, PT24
21	Real Canyon/ Debris Basin/ Warring Wash/ Warring Wash South/ & Basin	43251, 43252, 43253, 43254, 43255/ 43903/ 43261, 43262, 43263/ 43271/ 43904	PS41, PS42, PT26, PT28, PT34, PT35-37PT41, PT42, PT43, PT48, PT53, PT55, PT57, PT60, PT61, PT64, PT76, PT89, PT92, PT24, PT49, PT22, PT56, PT66, PT74, PT80, PT32, PT44, PT45, PT65, PT21, PT25, PT40, PT70, PT77, PT88, PT23, PT72
22	Santa Clara River at 12th St. Bridge Stream Gauge	720	Removed and replaced by 723
23	Santa Clara River at UWCD Freeman Diversion Stream Gauge	724	No maintenance in Santa Clara River.
24	Santa Clara River at Victoria Avenue Bridge Stream Gauge	723	PT21, PT22, PT32, PT42, PT43, PT89

Master Index of Facilities with Work Codes
USACE

Zone 2: Santa Clara River Watershed Continued			
List #	**Facility Name**	**Reaches**	**Work Codes**
25	Ventura Road Bank Protection/ Side Drain 1A/ Central Avenue Drain/ Clark Barranca/ Sudden Barranca/ Victoria Ave. Drain Secondary/ North El Rio Drain/ El Rio Drain/ Moon Ditch/ Montalvo Golf Course	42018/ 42031/ 42205, 42206/ 42491, 42492, 42493, 42494/ 42501,42502, 42504, 42505, 42506/ 42704/ 42395/ 42391/ 42461, 42462, 42463/ 42701	PS41, PS42, PT34, PT41, PT42, PT43, PT53, PT55, PT64, PT70, PT72, PT89, PT32, PT44, PT60, PT80, PT92, PT45,PT48, PT56, PT66, PT76, PT24, PT28, PT57, PT61, PT65, PT88, PT62, PT26, PT40, PT20, PT21, PT60, PT77, PT85, PT87, PT49
26	Santa Paula Airport Bank Protection	42035, 42036	PS41, PS42, PT32, PT41, PT42, PT43, PT53, PT55, PT70, PT72, PT77, PT89, PT44
27	Santa Paula Creek (not yet accepted for maintenance)	43061, 43062	PS41, PS42, PT25, PT26, PT27, PT28, PT41, PT42, PT43, PT48, PT60, PT61, PT62, PT64, PT65, PT66, PT89, PT92,PT28, PT34, PT40, PT53, PT76, PT44
28	Santa Paula Creek at Mupu Bridge Stream Gauge	709	PT21, PT22, PT32, PT42, PT43, PT89
29	Saticoy Storage & Stockpile	42009	PS41, PS42, PT41, PT42, PT31, PT34, PT43, PT44, PT53, PT55, PT56, PT57, PT60, PT64, PT66, PT70, PT76, PT88, PT89
30	Sespe Creek Bank Protection at Goodenough Rd/ Jepson Wash/ Jepson Basin/ Keefe Ditch/ North Fillmore Drain, Sespe Side Drains 1-3	43308/ 43351, 43352/ 43901/ 43361, 43362/ 43305 (individual drain numbers pending)	PS41, PS42, PT31, PT35-37 PT41, PT42, PT43, PT48, PT53, PT55, PT56, PT60, PT61, PT64, PT66, PT72, PT80, PT89, PT98, PT70, PT76, PT32, PT34, PT45, PT62, PT65, PT20, PT21, PT92, PT26, PT28, PT74, PT25, PT40, PT44, PT57, PT77, PT88, PT23, PT24, PT87
31	Silver Strand Drains & Pump Stations	42341,42342, 42345, 42346, 42348, 43249	PT29, PT32, PT43, PT64, PT76, PT80, PT83, PT86, PT89, PT92
32	Todd Barranca at Telegraph Rd Bridge Stream Gauge	738	PT21, PT22, PT32, PT42, PT43, PT89
33	Willard Road Drain 2°	43701	PS41, PS42, PT20, PT21, PT34, PT41, PT42, PT43, PT53, PT55, PT89, PT92

Master Index of Facilities with Work Codes
USACE

Zone 3: Calleguas Creek Watershed			
List #	**Facility Name**	**Reaches**	**Work Codes**
1	Arroyo Colorado/ Beardsley Wash	45271/ 45241, 45243, 45245, 45246, 45247	PS41, PS42, PT28,PT32, PT34,PT41, PT42, PT43, PT45, PT53, PT55, PT56, PT61, PT64, PT66, PT74, PT76, PT80,PT89, PT92
2	Arroyo Conejo N Fork & Trib./ Waverly Channel/ Castano Channel & Tributary/ Olsen Channel	46161, 46164, 46165, 46167, 46171, 46172/ 46202, 46203/ 46181, 46182, 46183, 46191, 46192/ 46151, 46152, 46153	PS41, PS42, PT23, PT24, PT26, PT28, PT32, PT33, PT34, PT41, PT42, PT43, PT44, PT45, PT47, PT49, PT53, PT55, PT57, PT60, PT61, PT64, PT76, PT77, PT85, PT89, PT92 PT97
3	Arroyo Conejo / Park Drain/ Thousand Oaks N Drain/ Lynn Ranch 2°/ Camino Flores-Corta 2° Erbes Road Drain/ Los Robles Drain. Cm Dos Rios 2°	46103, 46104, 46105, 46106, 46107, 46108/ 46211/ 46231, 46232, 46233, 46234, 46235/ 46749/ 46751/ 46241/ 46251, 46252/ 46752	PS41, PS42, PT26, PT28, PT32, PT34, PT41, PT42, PT43, PT44, PT45, PT48, PT53, PT55, PT57, PT60, PT61, PT64, PT76, PT77, PT85, PT87, PT89, PT92
4	Arroyo Las Posas	45051, 45053, 45063, 45065	PS41, PS42, PT32, PT41, PT42, PT43, PT44, PT47, PT53, PT55, PT57, PT60, PT61, PT64, PT66, PT70, PT74, PT77,PT89, PT92
5	Arroyo Santa Rosa u/s Conejo Ck confluence/ Blanchard Road Drain, Arroyo Santa Rosa Stream Gauge at Blanchard Rd/ Rotsler Ditch 2°/ Duval Rd. Drain 2°/ Rose Lane Drain 2°/ N. Redondo 2°/ Santa Rosa No.4/Santa Rosa Road Deb. Basin	46072, 46073, 46074, 46075, 46076, 46077/ 46702/ 46081, 46083, 46084, 46086/ 838 / 46701/ 46703/ 46704/ 46709/ 46901, 46902	PS41, PS42, PT21,PT22, PT23, PT24, PT25, PT26, PT28, PT32, PT33, PT34, PT40, PT41, PT42, PT43, PT44, PT45, PT47, PT53, PT55, PT56, PT57, PT60, PT61, PT64, PT66, PT70, PT76, PT77, PT80, PT89, PT92
6	Arroyo Santa Rosa d/s Conejo Cr. Confluence	46071	PT23, PT24, PT28, PT32, PT41, PT42, PT61

Master Index of Facilities with Work Codes
USACE

Zone 3: Calleguas Creek Watershed Continued			
List #	**Facility Name**	**Reaches**	**Work Codes**
7	Arroyo Simi/ Stream Gauge at Hitch/ Brea Canyon/ Castro Williams Channel, Basin/ Moorpark #1 2°/ Katherine St. 2° #1, 2, 3	47011, 47012, 47013, 47014, 47015, 47016, 47017, 47021, 47022, 47024, 47025, 47027, 47031, 47033, 47035, 47037, 47038/ 841/ 47311/ 47161, 47902/ 49078, 49080, 49081	PS41, PS42, PT21, PT22, PT23, PT24, PT25, PT26, PT28, PT32, PT33, PT34, PT40, PT41, PT42, PT43, PT44, PT45, PT47, PT48, PT49, PT53, PT55, PT56, PT57, PT60, PT61, PT62, PT64, PT65, PT66, PT70, PT74, PT76, PT77, PT80, PT85, PT88, PT89, PT92
8	Arroyo Simi/ Piedra Canyon/ Santa Susana Knolls Drain 2°/ Black Canyon 2°	47039/ 47571/ 47760/ 47750	PS41, PS42, PT21, PT28, PT32, PT41, PT42, PT43, PT53, PT55, PT60, PT61, PT64, PT65, PT76, PT77, P85, PT89, PT92
9	Bus Canyon/ Bus Canyon Tributary	47351, 47352, 47353, 47354, 47355/ 47361, 47362, 47363, 47364	PS41, PS42, PT26, PT28, PT32, PT41, PT42, PT43, PT45, PT48, PT49, PT53, PT55, PT56, PT57, PT60, PT61, PT64, PT65, PT76, PT77, PT89, PT92
10	Calleguas Creek/ Stream Gauge at CSUCI/ Stream Gauge at Hwy 101 Stream Gauge/ Long Canyon /Adolfo Storage and Stockpile Site	45021, 45023, 45025, 45027, 45029,45031/ 45033, 45035, 45037/ 805/ 806/ 45009	PS41, PS42, PT25, PT26, PT27, PT32, PT34, PT40, PT41, PT42, PT43, PT44, PT45, PT53, PT55, PT56, PT57, PT66, PT70, PT76, PT77, PT80, PT88, PT89, PT92, PT31, PT47, PT61, PT48, PT74, PT60, PT64, PT65
11	Camarillo Hills Drain/ Edgemore Debris Basin/ Edgemore Drain/ Edgemore Tributary 2°/ Anacapa Drain/ W. Camarillo Hills Deb. Basins E & W Branch/ W. Cam. Hills Drain/ Mission Drain/ Ponderosa Drain/ Las Posas Estates Det. Basin/ Las Posas Estates Drain/ Las Posas Estates Diversion/ Las Posas Estates Dam/ N. Ramona Place Drain/ Arneill Drain/ Crestview Deb Basin & Drain/ Crestview Basin/ Ramona Det. Basin/Dam	45141, 45143, 45144, 45145, 45147, 45148/ 45902/ 45161, 45163/ 45701/ 45211/ 45904, 45903/ 45171, 45173, 45175/ 45181, 45183/ 45191, 45192/ 45906/ 45224, 45225/ 45226/ 45231/ 45201/ 45151, 45153, 45155/ 45901/ 45907	PS41, PS42, PT23, PT32, PT34, PT35-37, PT41, PT42, PT43, PT57, PT60, PT61, PT64, PT70, PT76, PT77, PT89, PT92, PT21, PT22, PT24, PT27, PT28, PT45, PT53, PT55, PT85, PT32, PT26, PT65, PT25, PT40, PT44, PT47, PT56, PT66, PT80, PT88, PT62, PT25, PT32, PT34, PT40, PT44, PT66, PT70, PT76, PT77, PT80, PT88, PT89, PT92

Master Index of Facilities with Work Codes
USACE

Zone 3: Calleguas Creek Watershed Continued			
List #	**Facility Name**	**Reaches**	**Work Codes**
12	Conejo Creek/ Mission Oaks Drain/ East Camarillo Drain/ Upland Road Drain	46011, 46012, 46013, 46014, 46015, 46016, 46041, 46042, 46031, 46037, 46051	PS41, PS42, PT23, PT26, PT32, PT33, PT34, PT41, PT42, PT43, PT44, PT47, PT53, PT55, PT56, PT57, PT60, PT61, PT62, PT64, PT66, PT70, PT74, PT76, PT77, PT89, PT92
13	Conejo Mountain Creek Detention / Debris Basins #1 - #5	46121/ 46906, 46907, 46908, 46909, 46910	PT23, PT24, PT28, PT32, PT36, PT41, PT42, PT61, PT43
14	Coyote Canyon/ Coyote Basin/ Puerta Zuela Barranca	45522/ 45911/45531	PT23, PT24, PT28, PT32, PT 35-37, PT41, PT42, PT61, PT36
15	Dry Canyon Channel /Tributary /Dry Canyon West Fork	47381, 47382, 47383, 47384, 47385, 47386, 47387/ 47391 /47389	PS41, PS42, PT28, PT41, PT42, PT43, PT44, PT45, PT47, PT48, PT49, PT53, PT55, PT57, PT60, PT61, PT64, PT65, PT70, PT74, PT76, PT77, PT85, PT89, PT92
16	Erringer Road Drain/ Erringer Road Debris Basin	47371,47373, 47375/ 47904	PS41, PS42, PT23, PT24, PT26, PT28, PT32, PT35-37, PT41, PT42, PT43, PT45, PT60, PT61, PT64, PT65, PT76, PT77, PT87, PT89, PT92
17	Ferro Ditch/ Ferro Debris Basin	45301/ 45908	PS41, PS42, PT23, PT24, PT28, PT32, PT34, PT35-37, PT41, PT42, PT53, PT61, PT74, PT76, PT77, PT89, PT92
18	Flood Street	49059	PS41, PS42, PT42, PT43, PT45, PT57, PT60, PT61, PT64, PT76, PT89, PT92
19	Fox Barranca/ Debris Basin	45503, 45505, 45910	PT23, PT24, PT28, PT32, PT35-37, PT41, PT42, PT61
20	Gabbert Canyon/ Debris Basin/ Moorpark Storm Drain #1 & #2/ Walnut Canyon/Walnut Canyon Detention/ Debris Basin	47101, 47102, 47103/ 47901/ 47141, 47151/ 47111, 47112, 47114, 47116/47919	PS41, PS42, PT23, PT24, PT26, PT28, PT32, PT33, PT34, PT41, PT 35-37, PT42, PT43, PT47, PT49, PT53, PT55, PT56, PT60, PT61, PT64, PT66, PT76, PT77, PT80, PT89, PT92
21	Groves Place Drop Structure	45913	PT38, PT42, PT43, PT60, PT61, PT74
22	Happy Camp Canyon	47171, 47172, 47173	PS41, PS42, PT23, PT24, PT25, PT26, PT32, PT33, PT34, PT41, PT42, PT43, PT44, PT48, PT49, PT53, PT55, PT56, PT60, PT61, PT64, PT65, PT76, PT77, PT89, PT92

Master Index of Facilities with Work Codes
USACE

Zone 3: Calleguas Creek Watershed Continued			
List #	**Facility Name**	**Reaches**	**Work Codes**
23	Home Acres Dam/ Home Acres Drain/ Peach Hill Wash	47909/ 47131, 47133/ 47121, 47123	PS42, PT23, PT24, PT28, PT32, PT35-37, PT41, PT42, PT43, PT48, PT55, PT56, PT57, PT60, PT61, PT64, PT87, PT90, PT92
24	Honda Barranca/ E. Fork/ Honda West Debris Basin/ Santa Clara Ave Drain/ Milligan Barranca	45251, 45252, 45255/ 45262/ 45909/ 45293/ 45285, 45286	PS41, PS42, PT23, PT24, PT26, PT28, PT32, PT33, PT34, PT41,PT36, PT42, PT43, PT45, PT47, PT53, PT55, PT57, PT60, PT61, PT64, PT74, PT76, PT77, PT89, PT92
25	Hummingbird Creek/ White Oak Creek	47561, 47562, 47563/ 47551, 47552, 47553, 47554	PS41, PS42, PT26, PT28, PT32, PT41, PT42, PT43, PT45, PT47, PT53, PT55, PT56, PT60, PT61, PT64, PT76, PT77, PT87, PT89, PT92
26	Lang Creek/ Debris & Detention Basins	46221, 46222, 46223, 46224, 46225,46226/ 46227, 46228, 46911	PT21, PT22, PT23, PT24, PT28, PT32, PT35-37, PT41, PT42, PT43, PT61, PT89
27	Las Llajas Canyon/ Las Llajas Canyon Dam / Marr Diversion/ Kadota Fig Drain	47511, 47512, 47513/ 47908/ 47531, 47532/ 47521, 47522, 47523	PS41, PS42, PT23, PT24, PT28, PT32, PT34, PT35-37, PT41, PT42, PT43, PT48, PT49, PT53, PT55, PT60, PT61, PT64, PT65, PT66, PT70, PT74, PT76, PT77, PT80, PT87, PT89, PT92
28	Lewis Road Drain	45431, 45432, 45433, 45434	PS41, PS42, PT28, PT32, PT34, PT41, PT42, PT43, PT53, PT55, PT76, PT77, PT89, PT92
29	Long Canyon	45567	PS41, PS42, PT23, PT24, PT26, PT28, PT32, PT34, PT41, PT42, PT43, PT53, PT55, PT60, PT61, PT64, PT74, PT76, PT77, PT89, PT92
30	No.2 Canyon, /No. 2 Canyon Debris Basin	47201, 47202, 47203/47918	PS41, PS42, PT26, PT28, PT32, PT41, PT35-37, PT42, PT43, PT47, PT48, PT53, PT55, PT60, PT61, PT64, PT65, PT76, PT77, PT92
31	North Simi Drain/North Simi Detention & Debris Basin	47341, 47342, 47343, 47344, 47345/ 47911	PS41, PS42, PT26, PT28, PT32, PT41, PT42, PT43, PT47, PT48, PT53, PT55, PT38, PT36, PT35 PT60, PT61, PT64, PT65, PT76, PT77, PT89, PT92
32	Pleasant Valley Rd. Drain	45133	PS41, PS42, PT24, PT26, PT28, PT32, PT34, PT41, PT42, PT47, PT64, PT66, PT77, PT89, PT92
33	Revolon Slough	45101, 45103, 45105	PS41, PS42, PT22, PT27, PT26, PT28, PT32, PT34, PT41, PT42, PT43, PT44, PT47, PT53, PT55, PT61, PT66, PT74, PT76, PT77, PT80, PT87, PT88, PT89, PT92

Master Index of Facilities with Work Codes
USACE

Zone 3: Calleguas Creek Watershed Continued			
List #	**Facility Name**	**Reaches**	**Work Codes**
34	Runkle Canyon/ Debris Basin/ Storage & Stockpile Area/ Appleton Road Drain	47401, 47402, 47403, 47404, 47406/ 47907/ 47009/ 47411	PS41, PS42, PT23, PT24, PT28, PT32, PT35-37. PT41, PT42, PT43, PT44, PT47, PT48, PT53, PT55, PT56, PT57, PT60, PT61, PT64, PT65, PT76, PT77, PT89, PT92
35	Santa Susana W Drain/ Little Simi Detention Basin (Line C Det. Basin)	47501, 47502, 47503/ 47917	PT23, PT24, PT28, PT32, PT35, PT36, PT37, PT41, PT42, PS41, PS42, PT43, PT53, PT55, PT60, PT61, PT64, PT76, PT89, PT92
36	Somis Drain/ Somis Drain East Tributary/ West Tributary	45451, 45452, 45452, 45454/ 45471/ 45461	PS41, PS42, PT26, PT28, PT34, PT41, PT42, PT43, PT45, PT53, PT55, PT57, PT60, PT61, PT64, PT76, PT77, PT89, PT92
37	South Branch Arroyo Conejo/ (Reino) Debris Basin/ Newbury Park S.O. No. 1, 2/ Conejo Valley 2º/ Jenny Drive 2/ Potrero Rd East Dam (South Potrero Det)/ Potrero Rd. West Dam (Debris Basin) /Conejo Valley Secondary	46111, 46112, 46113, 46114, 46115, 46118, 46119, 46124/ 46905/ 46141, 46142, 46143, 46131, 46133/ 46801/ 46800/ 46903/ 46904	PS41, PS42, PT26, PT28, PT32, PT34, PT35-37, PT41, PT42,PT43, PT44, PT53, PT55, PT60, PT61, PT64, PT72,PT76, PT77, PT89, PT92
38	Strathearn Canyon	47182, 47184	PS41, PS42, PT26, PT28, PT41, PT42, PT43, PT44, PT48, PT49, PT53, PT55, PT56, PT60, PT61, PT64, PT65, PT76, PT77, PT85, PT89, PT92
39	Sycamore Canyon, & Dam/ Oak Canyon Channel	47321, 47322, 47325/ 47903/ 47331	PS41, PS42, PT26, PT28, PT42, PT35-37, PT43, PT53, PT55, PT60, PT61, PT64, PT76, PT77, PT89, PT92
40	Tapo Canyon	47421, 47422, 47423, 47424, 47425	PS41, PS42, PT24, PT26, PT28, PT32, PT41, PT42, PT43, PT44, PT45, PT47, PT48, PT53, PT55, PT56, PT57, PT60, PT61, PT64, PT65, PT70, PT76, PT77, PT89, PT92
41	Tapo Hills Diversions Diversion / Debris Basins #1 & #2	47431, 47432, 47433/ 47905, 47906	PS41, PS42, PT23, PT24, PT28, PT32, PT33,PT35-37, PT41, PT42, PT43, PT44, PT48, PT49, PT53, PT55, PT60, PT61, PT64, PT76, PT77, PT87, PT89, PT92
42	Arielle Detention and Muirfield Debris/ Detention Basins	47920, 47921	PS42, PT34, PT36, PT37, PT38, PT51, PT52, PT60, PT64, PT93
43	Covington Detention Basin/Crosby Detention Basin/Sycamore Park Detention Basin	47922/47923/47924	PS42, PT34, PT36, PT37, PT38, PT51, PT52, PT60, PT64, PT93

Master Index of Facilities with Work Codes
USACE

Zone 4: Malibu Creek Watershed			
List #	**Facility Name**	**Reaches**	**Work Codes**
1	Lake Eleanor Creek	48031	PS41, PS42, PT26, PT28, PT43, PT61, PT70, PT76, PT89, PT92
2	Medea Creek	48071, 48072	PS41, PS42, PT24, PT32, PT33, PT34, PT41, PT42, PT43, PT53, PT55, PT56, PT70, PT76, PT77, PT87, PT89, PT92
3	Potrero Creek/ In-Channel Basin	48021/ 48023, 48025	PS41, PS42, PT26, PT32, PT34, PT35-37, PT38, PT41, PT42, PT43, PT44, PT53, PT55, PT60, PT61, PT64, PT66, PT70, PT74, PT76, PT87, PT89, PT92
4	Schoolhouse 2	48041, 48042	No Maintenance
5	Bridgegate Debris Basin	48901	PT42, PT43, PT38, PT36, PT33, PT55, PT56, PT57, PT76, PT61, PT64, PT60, PT84, PT92
6	Westlake Debris Basin (Data/description for Debris Basin Manual pending)	48902	PS41, PS42, PT26, PT32, PT34, PT35-37, PT38, PT41, PT42, PT43, PT44, PT53, PT55, PT60, PT61, PT64, PT66, PT70, PT74, PT76, PT87, PT89, PT92


Lot A
Lot B
Lot C
J STREET DRAIN
ORMOND LAGOON
BEMP
N
W
E
S
0
250 Feet
J Street Drain Phase I
Project 82322
Aerial December 2012

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, California 93003

IN REPLY REFER TO:
08EVEN00-2012-F-0531

December 12, 2012

Antal Szijj, Senior Project Manager
Department of the Army
Los Angeles District, Corps of Engineers
2151 Alessandro Drive, Suite 110
Ventura, California 93001

Subject: Final Programmatic Biological and Conference Opinion for Ventura County Watershed Protection District's Routine Operation and Maintenance Program, Ventura County, California (8-8-11-F/C-12)

This document transmits the U.S. Fish and Wildlife Service's (Service) biological and conference opinion regarding the Ventura County Watershed Protection District's (District) routine operations and maintenance program (O&M Program) proposed for authorization by the U.S. Army Corps of Engineers (Corps). At issue are the effects of this action on the federally endangered tidewater goby (*Eucyclogobius newberryi*) and its critical habitat, least Bell's vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii extimus*) and its proposed critical habitat, California least tern (*Sterna antillarum browni*), arroyo toad (*Anaxyrus* californicus), Ventura marsh milk-vetch (*Astragalus pycnostachyus* var. *lanosissimus*), marsh sandwort (*Arenaria paludicola*), Gambel's watercress (*Nasturtium* [*Rorippa*] *gambellii*), and the federally threatened California red-legged frog (*Rana draytonii*) and its critical habitat, coastal California gnatcatcher (*Polioptila californica*) and its critical habitat, and the western snowy plover (*Charadrius nivosus nivosus*) and its critical habitat in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act) (16 U.S.C. 1531 *et seq*.).

The District's O&M Program involves routine maintenance, minor repair, mitigation/restoration, and implementation of the Beach Elevation Management Plan (BEMP) necessary to maintain the conveyance of stormwater throughout Ventura County. A majority of the work done under the O&M Program is routine maintenance that occurs periodically at District facilities; however, the O&M Program is not static. The location and extent of maintenance that occurs each year fluctuates depending on facility conditions and budgets: unpredictable repairs to facilities are necessary following storm events; mitigation/restoration is implemented as necessary; and new facilities may be added to the O&M Program at any time.

To accommodate the dynamic nature of the O&M Program, this document is structured to provide a program-level assessment of effects to listed species and critical habitats, and will be amended by the submittal of work plans outlining specific tasks as they are proposed to the Corps for authorization. To achieve this flexibility this document includes two components:

1) a program-wide concurrence for species and critical habitats that the Corps determined are not likely to be adversely affected by any aspect of the O&M Program; this concurrence concludes Section 7 consultation for this subset of species and critical habitat; and 2) a programmatic consultation and conference opinion for species or critical habitats that may be affected by one or more of the specific projects within the O&M Program; for this set of species a determination will be made by the Corps whether each project "may affect, and is likely to adversely affect" or "may affect, and is not likely to adversely affect" one or more of the covered species. A summary of how all of the species described above are covered by this document is shown in Table 1.

Table 1. Summary table of species and critical habitats that are covered through the program-wide concurrence or are subject to the programmatic consultation.

Species	Corps Determination	Service Response
California red-legged frog	May affect, likely to adversely affect *or* not likely to adversely affect	**Programmatic Consultation**
California red-legged frog designated critical habitat	May affect, likely to adversely affect *or* not likely to adversely affect	
Least Bell's vireo	May affect, likely to adversely affect *or* not likely to adversely affect	
Southwestern willow flycatcher	May affect, likely to adversely affect *or* not likely to adversely affect	
Southwestern willow flycatcher proposed critical habtiat[1]	May affect, likely to adversely affect *or* not likely to adversely affect	
Tidewater goby	May affect, likely to adversely affect *or* not likely to adversely affect	
Tidewater goby designated critical habtiat	May affect, likely to adversely affect *or* not likely to adversely affect	
Coastal California gnatcatcher	May affect, not likely to adversely affect	**Program-wide Concurrence**
Coastal California gnatcatcher designated critical habitat	May affect, not likely to adversely affect	
Gambel's watercress	May affect, not likely to adversely affect	
Marsh sandwort	May affect, not likely to adversely affect	
California least tern	May affect, not likely to adversely affect	
Western snowy plover	May affect, not likely to adversely affect	
Western snowy plover critical habtiat	May affect, not likely to adversely affect	
Arroyo toad [2]	No effect	**No Response**
Ventura marsh milk-vetch[2]	No effect	

[1] A programmatic conference opinion is provided that will convert to a biological opinion upon final designation of critical habitat for the southwestern willow flycatcher.

[2] The Corps and Service are not required to consult on "no effect" determinations.

This biological opinion is based on information provided by the Corps and the District including the Final Environmental Impact Report (District 2008), Impact Analysis for Federally-listed

Species (District 2010), survey reports for listed species in the project area, site visit notes, correspondence between my staff and the District, and information in our files. A complete record of this consultation can be made available at the Ventura Fish and Wildlife Office.

CONSULTATION HISTORY

July 31, 2008	The Corps submitted a request for consultation on the subject project and made the following determinations about the projects effects to listed species: Tidewater goby – may affect Tidewater goby critical habitat – not likely to adversely affect California red-legged frog – not likely to adversely affect California red-legged frog critical habitat – not likely to adversely affect Arroyo toad – not likely to adversely affect Arroyo toad critical habitat – not likely to adversely affect Western snowy plover – not likely to adversely affect Western snowy plover critical habitat – not likely to adversely affect Least Bell's vireo – not likely to adversely affect California gnatcatcher – not likely to adversely affect California gnatcatcher critical habitat – not likely to adversely affect California least tern – not likely to adversely affect Ventura marsh milk-vetch – not likely to adversely affect
October 17, 2008	The Service concurred with your not likely to adversely affect determinations for the routine activities performed by the O&M Program, and requested additional information necessary to initiate formal consultation for the tidewater goby.
2009	During ongoing discussions between the Corps, District and Service, it became clear that the development of a programmatic biological opinion covering the breadth of activities and continual addition of new facilities and mitigation sites associated with the District's O&M Program would allow the Corps flexibility to quickly approve and implement the District's projects that may affect listed species. During the discussions that led up to the issuance of this biological opinion, the Service continued to engage in individual consultations with the Corps for District projects on an as needed basis.
August 19, 2010	The Corps submitted to the Service a document developed by the District titled, "Ventura County Watershed Protection District Operations and Maintenance Program Impact Analysis for Federally-Listed Species," in support of your July 31, 2008 request for consultation.
October 2010-January 2011	The Corps, District and Service held meetings and conducted site visits to discuss the consultation and evaluate the various types of facilities and habitats that would be subject to the programmatic consultation.

January 19, 2011	The Corps submitted a consultation request including the following determinations: Least Bell's vireo – may affect California red-legged frog – may affect California red-legged frog critical habitat – may affect Southwestern willow flycatcher – no effect Arroyo toad – no effect Ventura marsh milk-vetch – no effect Tidewater goby – may affect Tidewater goby critical habitat – may affect Western snowy plover – not likely to adversely affect Western snowy plover critical habitat – not likely to adversely affect California least tern – not likely to adversely affect Coastal California gnatcatcher – not likely to adversely affect Coastal California gnatcatcher critical habitat – not likely to adversely affect
March 23, 2011	The Service, Corps, and District met and discussed the anticipated release of proposed critical habitat for the southwestern willow flycatcher, which included areas where District facilities are located, and potential for marsh sandwort and Gambel's watercress to occur within District facilities.
December 20, 2011	The Corps amended the consultation request to add/revise the following effects determinations: Marsh sandwort - not likely to adversely affect Gambel's watercress - not likely to adversely affect Southwestern willow flycatcher – may affect Southwestern willow flycatcher proposed critical habitat – may affect
February 1, 2012	The Service issued an acknowledgement letter stating that the biological opinion is estimated to be issued 6 weeks following the receipt of all necessary information.
May 24, 2012	The District transmitted the final information necessary to complete the consultation.

PROGRAM-WIDE CONCURRENCE AND ACKNOWLEDGEMENT

You determined that the O&M Program may affect, but is not likely to adversely affect Gambel's watercress, marsh sandwort, coastal California gnatcatcher and its critical habitat, western snowy plover and its critical habitat, and California least tern. We concur with your determination based on the following:

Gambel's watercress and marsh sandwort

- The District will conduct comprehensive surveys within the 6.98 acres of facilities identified as having suitable habitat within the first year following the issuance of the Corps authorization for the O&M Program (District 2011);
- The Service will provide the District with a list of individuals that are qualified to positively identify both plants, or will provide training to District biologists so that they are qualified to identify both plants;
- District staff will opportunistically survey for Gambel's watercress and marsh sandwort while conducting routine biological surveys throughout the life of the O&M Program; and
- If any Gambel's watercress or marsh sandwort is found, no project activities that could injure or destroy the plants would take place until additional consultation can be conducted.

Coastal California gnatcatcher and its critical habitat

- No suitable nesting habitat is located within maintenance areas;
- Currently, none of the suitable habitat adjacent to District facilities is known to be occupied by coastal California gnatcatchers;
- Where suitable habitat for the coastal California gnatcatcher occurs adjacent to District facilities if long-term operations (more than 1 day) with heavy equipment are planned for the facility reaches identified with adjacent suitable habitat, a qualified biologist will survey for coastal California gnatcatchers for three mornings within 7 days prior to such work to determine presence or absence. If work will last longer than 3 days, the monitor will conduct morning surveys every other day before work begins to check for adjacent California gnatcatcher activity. If gnatcatchers are present in adjacent habitats, work will stop and the Corps and District will coordinate with the Service to achieve the appropriate level of consultation (District 2010); and
- The District maintains three sedimentation basins within designated critical habitat for the coastal California gnatcatcher; however, the basins do not support the primary constituent elements of coastal California gnatcatcher critical habitat.

Western snowy plover and its critical habitat

- No District facilities are located within areas known to support western snowy plover nesting;
- If beach grooming activities associated with the BEMP (described below) are conducted during the nesting season for the western snowy plover (March 1 to September 15), the District will conduct surveys or coordinate with western snowy plover monitors in the area to ensure that no nesting is occurring within the grooming location or access route. If a nest is detected, grooming activities will not commence until appropriate consultation is reached.
- BEMP equipment will travel along the same path that is currently used by lifeguard vehicles to reduce disturbance of western snowy plover habitat;
- BEMP activities would not affect the primary constituent elements of the western snowy plover critical habitat;

California least tern

- No District facilities are located within areas known to support California least tern nesting;
- Foraging and roosting in the vicinity of District facilities near the Ventura River estuary, Santa Clara River estuary, and Mugu Lagoon would not be precluded by O&M activities;

- If beach grooming activities associated with the BEMP are conducted during the nesting season for the California least tern (March 15 to August 15), the District will conduct surveys or coordinate with western snowy plover monitors in the area to ensure that no California least tern nesting is occurring within the grooming location or access route. If a nest is detected, grooming activities will not commence until appropriate consultation is reached.
- BEMP equipment will travel along the same path that is currently used by lifeguard vehicles to reduce disturbance of California least tern habitat;

You have also determined that the proposed project will have no effect on the arroyo toad and Ventura marsh milk-vetch. We acknowledge your determination.

ADMINISTRATION OF THE PROGRAMMATIC CONCURRENCE, BIOLOGICAL OPINION, AND CONFERENCE OPINION

Each year the District would prepare an annual work plan that outlines the O&M Program activities to be conducted in the following year. Although the District attempts to anticipate all O&M Program work that would be necessary throughout the year, additional projects may be proposed and transmitted to the Corps in an addendum to the work plan. The Corps would review the District's work plan to determine if the proposed activities would be authorized under the Regional General Permit, and to determine how the proposed projects would affect tidewater gobies, California red-legged frogs, least Bell's vireos, southwestern willow flycatcher and their respective designated critical habitat. All proposed projects that the Corps determines may affect, but are not likely to adversely affect these species and critical habitats would be subject to the programmatic concurrence procedures below. Projects that the Corps determines may affect, and will likely adversely affect these species and critical habitat would be subject to the programmatic biological opinion and conference opinion.

Programmatic Concurrence
For projects where effects to tidewater goby, California red-legged frog, least Bell's vireo, and/or southwestern willow flycatcher and their designated critical habitats are insignificant, discountable, or completely beneficial, a "not likely to adversely affect" determination is appropriate. The Service defines these thresholds as follows:

- Insignificant effects relate to the size of the impact and should never reach the scale where take occurs. Based on best judgment, a person would not be able to meaningfully measure, detect, or evaluate insignificant effects;

- Discountable effects are those extremely unlikely to occur. Based on best judgment a person would not expect discountable effects to occur;

- Beneficial effects are contemporaneous positive effects without any adverse effects to the species.

In order for activities to be incorporated into the programmatic concurrence, the Corps must notify our office in writing or via electronic mail (email), at least 30 days prior to the start of project activities. We will review the Corps' notification and respond in writing or via email

with our concurrence or non-concurrence. If we do not concur with the Corps' determination, the activity would be subject to the programmatic biological opinion and/or conference opinion. The Service will strive to respond within 30 days, but will request an extension if additional processing time is necessary.

Programmatic Biological Opinion and Conference Opinion

All proposed projects within the District's O&M Program that the Corps determines may affect, and are likely to adversely affect the tidewater goby, California red-legged frog, least Bell's vireo, and/or southwestern willow flycatcher and their respective designated critical habitats will be subject to this biological opinion. The programmatic consultation and conference opinion in this document is based on an appended programmatic consultation approach, which is a two-stage consultation process. This document represents the first stage and includes the initial development of a programmatic biological opinion that analyzes the potential landscape-level effects that may result from implementing the District's O&M Program. The second stage involves the development of documentation that outlines the specific project activities that are proposed to be implemented under the auspices of this biological opinion (i.e., annual work plans or annual work plan addenda). Upon submission of the work plans by the District, the Corps will determine whether the projects within the work plan are consistent with the tasks outlined in the "Description of the Proposed Action" section of this biological opinion, and whether the proposed activities and anticipated effects fall within the scope of the effects analysis of the biological opinion, and associated incidental take statement. If all projects within the work plan are determined to be sufficiently evaluated by this biological opinion, the work plan is then appended to the programmatic biological opinion. This programmatic document, together with the appended project-specific documentation, encompasses the complete consultation document for each individual work plan. If projects are deemed to be inadequately covered by this biological opinion, a separate consultation must be initiated.

At least 30 days prior to conducting any O&M Program activities that are likely to adversely affect the tidewater goby, California red-legged frog, least Bell's vireo, and/or southwestern willow flycatcher and/or designated critical habitat for these species, the Corps will notify the Ventura Fish and Wildlife Office, in writing, of projects they propose to authorize under the auspices of this biological opinion. At a minimum, the following information will accompany the Corps' project notification to the Service:

1. Facility names and numbers (or for mitigation projects that are not located at District facilities, provide a description of the location);

2. Activity codes or brief activity description;

3. Extent of the effects in acres;

4. Species and critical habitats affected; and

5. Description of any proposed modifications to the Best Management Practices (BMP) or minimization measures.

We will review the Corps' notification and respond in writing, or via email, to acknowledge that activities are being conducted under the Programmatic Biological Opinion and Conference Opinion, and to notify the Corps of any concerns or questions regarding the proposed action, or if we feel that there would be effects that would necessitate a separate consultation. Again, the Service will strive to respond within 30 days, but will request an extension if additional processing time is necessary.

BIOLOGICAL AND CONFERENCE OPINION

DESCRIPTION OF THE PROPOSED ACTION

The Corps proposes to issue a Regional General Permit (RGP) to the District for implementation of the O&M Program. The permit would be valid for a period of 5 years. The Corps' permitting process allows for streamlined renewal/reissuance of the RGP after the 5-year permit term elapses if certain criteria are met. If the Corps proposes to reissue the RGP without substantial changes, and none of the consultation reinitiation criteria specified at 50 CFR 402.16 have been otherwise triggered, the Service may reissue the biological opinion without substantial changes as well. Proposed activities within the O&M Program involve routine maintenance and repair of District facilities including implementation of the BEMP program, and mitigation/restoration activities. The Corps' RGP and this biological opinion do not consider emergency actions, the construction of entirely new facilities, or projects that substantially expand facilities, and such actions will not be discussed further in this consultation.

The District only maintains its own facilities and does not routinely conduct activities in natural channels or facilities owned and operated by other agencies. District facilities are located throughout Ventura County and occur in each of the three major watersheds of Ventura County-the Ventura River, Santa Clara River, and Calleguas Creek, as well as tributaries to Malibu Creek, and smaller watersheds, which are not hydrologically connected to these major watersheds, such as Ormond Lagoon (Figure 1). District facilities vary in age from recent to over 50 years old and comprise primarily four basic types: debris and detention basins, rock bank protection/levees, channels and confluences, and stream gauges. Important features for each of the District facilities are provided in the District's Catalog of Facilities (District 2008), including type, location, size, routine maintenance actions, and special-status species known to occur or potentially occur in the area.

The specific maintenance actions that are implemented on or near District facilities vary from year to year, as are the specific areas that require maintenance. The type, extent, and frequency of activities undertaken by the District during a given year are dependent on several factors, including the condition of flood-control facilities, the degree of flood hazard, weather forecasts, the environmental impacts of the maintenance activities, and budgetary constraints.

Prior to each work year, the District undergoes a planning process and identifies activities that will be included in the annual work plan for that year. The District then submits the annual work plan to the Corps, National Marine Fisheries Service, California Department of Fish and Game, and the Service for review. Most facilities require the same maintenance actions every year, including vegetation removal and sediment management, and are included in the work plan as

routine maintenance items. The number and type of small repair projects varies each year, and these are included in the annual work plan with details regarding facility, repair type (in-kind or out-of-kind), quantities, work footprint, schedule, potential natural resource impacts, and any proposed compensatory mitigation. After agency review, the annual work plan is revised, if necessary, to respond to any agency comments, or to parse out any projects, which the agencies feel warrant further review, mitigation, or separate consultation. After budgetary approval, the projects are scheduled and implemented.

The annual work plan is also the vehicle to add new facilities to the O&M Program. Each year, if new facilities are constructed or acquired from other entities, they are included in the work plan along with relevant details (i.e., description of facility location, size, species present, O&M activities to be performed, etc.) as were provided for the other facilities.

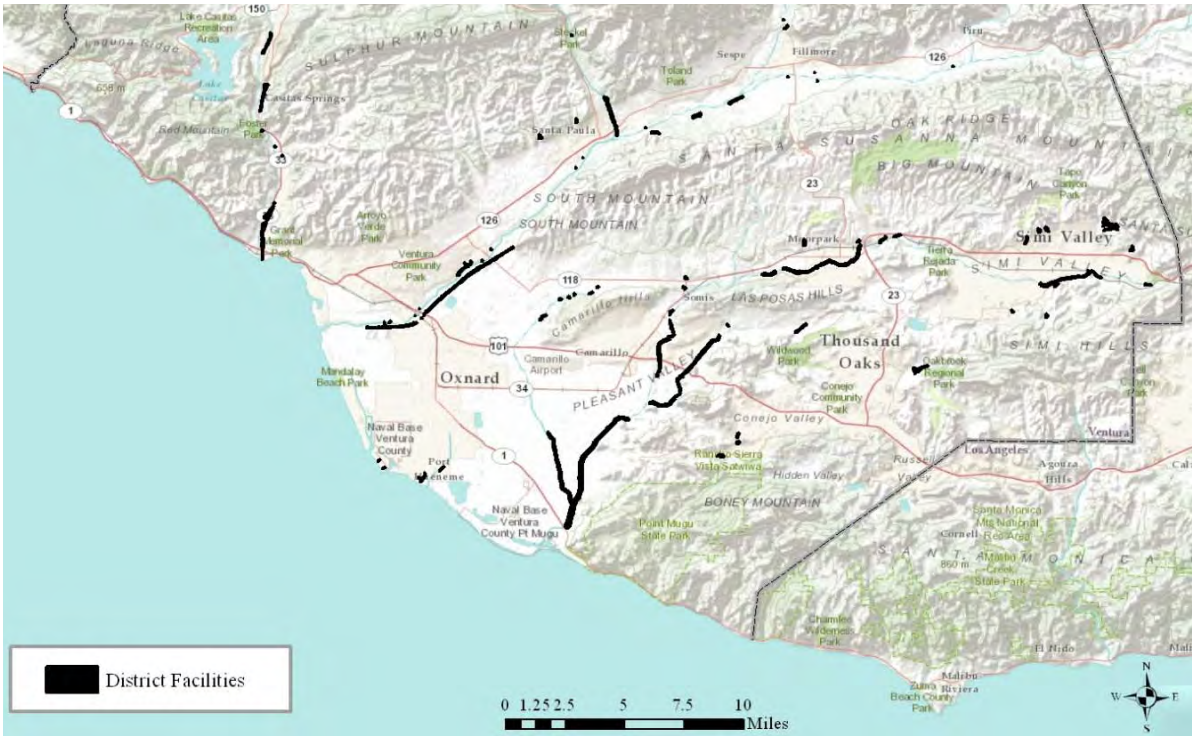


Figure 1. Location of District facilities throughout Ventura County that are within or adjacent to suitable habitat for threatened or endangered species.

Routine Maintenance Activities

The breadth of activities that may appear on annual work plans are summarized below (Table 2).

Table 2. Routine maintenance activity codes and descriptions.

Code	Routine Maintenance Description
PS41	BRUSH & WEED CONTROL, SPRAY WITH BOOM. The application of herbicides, to designated areas, with a boom-mounted spray bar to prevent new growth and/or control existing vegetation, for the purpose of insuring the capacity and integrity of District facilities.
PS42	WEED CONTROL, HAND SPRAY. The application of herbicides, to designated areas, by hand spray to prevent new growth and/or control existing vegetation, for the purpose of insuring the capacity and integrity of District facilities.
PT20	UNIMPROVED CHANNEL CLEANOUT, SEDIMENT REMOVAL WITH CRANE. The removal, hauling, and disposal of sediment and other materials deposited in unimproved channels, to restore the channel capacity.
PT21	UNIMPROVED CHANNEL CLEANOUT, SEDIMENT REMOVAL WITH EXCAVATOR. The removal, hauling, and disposal of sediment and other materials deposited in unimproved channels, to restore the channel capacity.
PT22	UNIMPROVED CHANNEL CLEANOUT TRASH. The removal, hauling, and disposal of trash deposits and other materials from unimproved channels, to prevent channel blockages, accelerated debris deposition, and to restore the channel capacity.
PT23	IMPROVED CHANNEL CLEANOUT, SEDIMENT REMOVAL WITH CRANE. The removal by crane, hauling, and disposal of sediment and other materials deposited in improved channels, to restore the channel capacity.
PT24	IMPROVED CHANNEL CLEANOUT, SEDIMENT REMOVAL WITH EXCAVATOR. The removal by excavator, hauling and disposal of sediment and other materials deposited in improved channels, to restore the channel capacity.
PT25	IMPROVED CHANNEL CLEANOUT, SEDIMENT REMOVAL WITH LOADER. The removal by loader, hauling, and disposal of sediment and other materials deposited in improved channels, to restore the channel capacity.
PT26	IMPROVED CHANNEL CLEANOUT, TRASH AND GROWTH WITH CRANE. The hauling, and disposal of trash deposits; weed and willow growth; or other materials from improved channels and large accessible conduits to prevent blockages, accelerated debris depositing, and to restore the channel capacity.
PT27	IMPROVED CHANNEL CLEANOUT, TRASH LOADER/CRANE. The removal, hauling, and disposal of trash, vegetative growth, and other materials from channels to restore the channel capacity.
PT28	IMPROVED CHANNEL CLEANOUT, TRASH AND VEGATATIVE GROWTH/EXCAVATOR. The manual removal of trash, vegetative growth or sediment from channels where other methods are not applicable to prevent blockages and accelerated debris depositing and to restore the channel capacity.
PT29	CONDUIT CLEANOUT. The removal of debris of any type from within conduits by: flushing with water; or by physically entering the conduit and manually removing debris, to restore full capacity.
PT31	STORAGE AREA OR STOCKPILE CLEAN-UP. The clean-up of designated storage sites, drying, separating of trash, removal of sediment stockpile. Fire prevention, weed and brush control. Grading shall be in compliance with National Pollution Discharge Elimination System requirements.
PT32	EARTHWORK, BY HAND. The replacement and compaction of material removed by erosion, using hand tools or other methods, to restore flood control channels, supporting embankments, levees or access roads.
PT33	EARTHWORK-PREPARATION. The mechanical preparation for the repairing of earthen levees, access roads and supporting embankments.
PT34	EARTHWORK, MECHANICAL. The mechanical replacement and compaction of material removed by erosion to restore flood control channels, supporting embankment, levees or access roads, or the removal of material not covered by a facility clean out activity.
PT35	DAM AND DEBRIS BASIN SEDIMENT REMOVAL WITH SCRAPER. Removal by scraper, including disposal, of sediment deposited in dams or debris basins to restore full capacity and original shape.

PT36	DAM AND DEBRIS BASIN SEDIMENT REMOVAL. Removal by crane, (including hauling, and disposal) of sediment deposited in dams or debris basins to restore full capacity and original shape.
PT38	BLEEDER PIPE MAINTENANCE AND REPAIR. The removal of debris by hand or mechanically to restore proper bleeder operations.
PT39	CONTRACT - DEBRIS BASIN. Use this activity code to track all contract effort for debris basin cleanout. Actions mirror those described under PT36 Dam and Debris Basin Sediment Removal.
PT40	WEED CONTROL - NON SPRAY. The minor maintenance and repair of the spray trucks, the maintenance of inventory and other records, applicable to the herbicide crew and site evaluation.
PT41	BRUSH AND WEED CONTROL, SPRAY WITH BOOM. The application of herbicides, to designated areas, with a boom-mounted spray bar to prevent new growth and/or control existing vegetation, for the purpose of insuring the capacity and integrity of flood control facilities.
PT42	WEED CONTROL, HAND SPRAY. The application of herbicides, to designated areas, by hand spray to prevent new growth and/or control existing vegetation, for the purpose of insuring the capacity and integrity of flood control facilities.
PT43	WEED CONTROL, HAND CREW. The manual removal of brush and weeds using hand tools to control existing vegetation, for the purpose of insuring the capacity and integrity of flood control facilities.
PT44	CHANNEL ACTIVITIES, MECHANICAL. The mechanical removal (i.e., mowing and/or discing) of brush and weeds to provide for unobstructed flow through channels, and to maintain channels, access roads and dams free of vegetation. This includes pilot channel work where low flow is redefined in channel.
PT45	BACKPACK WEED SPRAY. Brush and weed control by all spray methods, performed solely for the purpose of improving the appearance of Flood Control rights-of-way beyond limits of channels and access roads.
PT47	BRUSH & WEED CONTROL, EXCAVATOR. Brush and weed control by mechanical methods performed solely for the purpose of improving the appearance of District rights-of-way beyond the limits of channels and access roads.
PT48	WEED CONTROL, FIRE ABATEMENT. Brush and weed removal by hand or mechanical methods performed solely for the purpose of eliminating potential fire hazards.
PT49	TUMBLEWEED ABATEMENT. The hand removal and disposal of tumbleweeds (*Salsola* sp.) along channel rights-of-way, to maintain proper channel flow and access. Hauling shall be included in this activity if required.
PT51	CONSTRUCTION OR REPLACEMENT OF ACCESS ROAD. The construction of new or replacement of access roads by placing, shaping and compacting base material. Such roads are constructed to provide access to District facilities at new locations or where existing access roads are severely damaged, or where no road exists.
PT52	A.C. ACCESS ROAD. Repair asphalt concrete access road by overlay, slurry seal, crack repair, with or without surface grinding. Also covers replacement of asphalt concrete road by fully removing existing asphalt and base material, placing and compacting new base, then applying new asphalt concrete layer(s). Includes repair and replacement of asphalt concrete curbs. No asphalt may be placed within the banks or bottoms of facilities where water flows.
PT53	REBASING & SHAPING OF ACCESS ROADS. The non-routine, mechanical, scarification and overlaying of access roads to include adding road base, re-grading and re-compacting. This work is done to re-establish drainage and compaction when such roads have become rutted and are soft when wet.
PT55	ROUTINE GRADING OF ACCESS ROADS. Mechanical grading of access roads to remove minor ruts and erosion and restore normal shape and cross slope, for access to District facilities.
PT56	GRADER OPERATIONS ON ACCESS ROADS AND V-DITCHES. Mechanical grading of haul roads used during cleanout of District facilities to insure safe, smooth operation on haul roads. Grading of roads where no base material or roller compaction is necessary.
PT57	MAINTENANCE OF MISC ACCESS ROAD STRUCTURES. Hand or mechanical debris removal and cleanout of pipe, inlets and outlets, small ditches and overpours along access roads to assure proper drainage of roads and adjacent areas. Hauling and dumping of debris is included when required.
PT60	FENCE REPAIR. The repair and/or re-establishment of downed or damaged fences to restore fence to proper condition and to provide right-of-way control.
PT61	MISC FENCE MAINTENANCE. The minor or temporary repair of fences to restore fence to proper

	condition and to provide right-of-way control or temporary and integrity.
PT62	FENCE CONSTRUCTION. Construction of chain link and other fences and the installation of gates of similar fence material to provide proper right-of-way control.
PT64	GATE REPAIR/CHAINLINK. The routine adjusting of gates, the repair of damaged or downed gates, and the repair or replacement of locks and chains to provide proper control of access to channel rights-of-way.
PT65	GATE CONSTRUCTION CHAINLINK. Shop, field fabrication, or purchase of chain link gates, and their installation, at points of access onto District rights-of-way to provide proper right-of-way control.
PT66	PIPE/GATE CONSTRUCTION/REPAIR. Shop and field fabrication of gates, and their installation, at points of access of District rights-of-way to provide proper right-of-way control.
PT68	PIPE AND WIRE REVETMENT REPAIR. The removal of backfill and repair of pipe and wire revetments to restore integrity of bank protection or stabilizer.
PT70	RIPRAP REPAIR. Repair of damaged areas of riprap slopes to restore riprap to original condition. This work is done to prevent further deterioration and eliminate potential erosion problems.
PT72	BANK PROTECTION CONSTRUCTION. Hand or mechanical construction or replacement of protective concrete, riprap or other durable material against channel sides or banks to protect them from erosion.
PT74	STABILIZER CONSTRUCTION/REPAIR. Placement of concreted riprap stabilizer across unlined channels to stabilize the channel bottom and prevent progressive head-cutting.
PT76	CONCRETE CONSTRUCTION/REPAIR. Repair of damaged concrete structures including small structures, channel linings, retaining walls, etc. to original condition and prevent further deterioration.
PT77	SURFACE DRAINAGE FACILITY CONSTRUCTION. Hand or mechanical construction by the most productive method of surface drainage facilities including over-pours, headwalls, pipes and other facilities to dispose of surface runoff onto District rights-of-way.
PT80	PIPE/FLAP GATE MAINT AND REPAIR. The maintenance, repair or replacement of damaged or deteriorated flap, pipe gates and sucker rod and fencing to restore them to their proper function.
PT83	TRASH RACK CLEANING. The removal of trash and debris from trash racks to eliminate obstructions and insure normal flow.
PT85	SUB-DRAIN FLUSHING & REAMING. The flushing and reaming of sub-drains and cleaning weep holes to remove debris and prevent blockage.
PT86	PUMP STATION MAINTENANCE AND STORM PREPARATION. The routine inspection and maintenance of pump stations and their outlet structures to include lubrication and operational testing. Also included is the required storm preparation to assure that outlets are unblocked and pump systems are operational at the beginning of and during significant storms.
PT88	STOCKPILE AND STORAGE AREA WORK. The blading of designated stockpile and storage area sites to keep them in a neat uncluttered condition. Rip and push material into piles to be loaded out for use elsewhere.
PT89	MISCELANEOUS MAINTENANCE. All work performed that is not described in previous activities. A description of activities that would fall under this category would be provided in the workplan.
PT90	STORM PROTECTION. Patrol and inspection of District facilities during and just after storms to identify problems, either existing or potential and where damage has occurred.
PT91	SAFETY INSPECTION. Patrol and inspection of District facilities during and just after significant disaster events to identify problems, either existing or potential and where damage has occurred.
PT92	WORK RELEASE. Perform hand weed control outside of normal work hours; i.e. weekends, using personnel furnished by Ventura County Work Release program.
PT93	NPDES INSPECTION/MAINTENANCE. The inspection/maintenance of NPDES structures and facilities, within the District's responsibility.
PT97	MISCELANEOUS CRANE ACTIVITY. The inspection/minor repair, maintenance and cleaning of the truck crane.

Repair Activities

As District facilities are damaged by flood flows and natural degradation, the District must conduct repairs to maintain conveyance and flood control. Repair activities may take many forms and could involve replacing riprap, diverting water, vegetation trimming, etc. Repair activities primarily occur within existing District facilities. Temporary or permanent impacts may occur outside existing facility footprints. Details of each repair project will be listed in the annual work plans. The repair activity may or may not be covered by this programmatic biological opinion depending on the magnitude and location of the impacts to the affected species or critical habitats.

Beach Elevation Management Plan (BEMP)

In addition to the routine maintenance activities described above, the District has a Beach Elevation Management Plan in place that will be implemented when the criteria described below are met. BEMP activities are considered to be a part of the O&M Program. The Ormond Beach Lagoon inlet normally remains in a semi-closed condition due to sand accretion on Ormond Beach, but during most winters it breaches naturally to allow free outflow during storms and some high tides. These events do not drain the lagoon entirely, as urban runoff and high tides contribute fresh and salt water flows. To date, there has been one instance of the inlet remaining closed during a minor storm event and causing upstream flooding; this took place on January 18, 2010. This event flooded the Oxnard Waste Water Treatment Plant, which was at risk of releasing untreated sewage effluent into the surrounding waterways, roads, and residential properties due to electrical failure of inundated equipment. To prepare for the reoccurrence of the combination of the outlet being closed, the lagoon water surface being above a high threshold level, and a storm being forecast, a BEMP has been developed. The BEMP defines a maximum safe beach height, and provides for a coordinated response to groom the sand berm at a pre-specified location immediately prior to a predicted storm event. The purpose of the BEMP is to protect the lives and well-being of the communities and industrial facilities along J Street Drain and Ormond Beach Lagoon by maintaining water levels below a predetermined safe elevation.

The BEMP is a guideline to assist the District in responding to the potential flood threat caused by persistence of the sand berm during potentially damaging storm events of varying magnitudes. It should be noted that the BEMP would be implemented when conditions warrant, which may be more than once annually, to avoid an emergency. Therefore, implementation of the BEMP would constitute a new maintenance activity associated with operation of the J Street Drain and pump station facilities.

The lead role of the District in flood emergency avoidance is aided by Ventura County Automated Local Evaluation in Real Time (ALERT) system. ALERT is a flood warning system for Ventura County developed by the National Weather Service of the National Oceanic and Atmospheric Administration that has been in operation since 1979. ALERT provides reliable rainfall and flow information for determination of storm magnitude. ALERT will be used as the primary source for rainfall and storm event data in the BEMP. The District water level gauge(s) in the J Street Drain will be used as the primary means to monitor water surface elevation.

Grooming Criteria

Normal Ormond Beach Lagoon conditions result in a natural breaching of the sand berm before the lagoon water elevation reaches its highest recorded elevation of about 7.5 feet National Geodetic Vertical Datum (NGVD) (9.9 feet North American Vertical Datum (NAVD)). This has resulted in the sand berm naturally breaching each year, typically in the early months of the fall rainy season. The sand berm naturally breaches during this time because increased drainage from seasonal storm water raises the lagoon water level sufficiently above sea level prompting a breach. The breach closes as sand blows and washes in, and freshwater drainage diminishes. The condition that would initiate the BEMP is a combination of the following three threshold conditions. The BEMP coordinates the grooming response with sensitivity to environmental resources.

The BEMP threshold conditions are:

1. The Ormond Beach Lagoon is fully enclosed by the Ormond Beach sand berm;

2. The Ormond Beach sand berm elevation adjacent to the lagoon is observed to be above 6.5 feet NGVD (8.9 feet NAVD); and

3. A 72-hour prediction of a storm event affecting the watershed is received, which would likely cause the designed capacity of the J Street Drain to be exceeded if the lagoon water surface elevation cannot overtop the observed adjacent beach sand elevation.

Any one of the above conditions alone may not trigger initiation of the BEMP. All three conditions must occur simultaneously to enact the BEMP.

Grooming Procedure

The grooming would be performed by a tracked dozer and initiated by the O&M Deputy Director in coordination with the District Director or his/her designee. Once the O&M Deputy Director determines that the BEMP threshold criteria have been met, the dozer shall be pre-positioned at the south side parking lot of Port Hueneme Beach Park. As soon as the BEMP is enacted, the dozer operator accompanied by District environmental staff would move the dozer to the designated beach grooming location, and shave the sand berm down to the maximum safe beach elevation. The dozer access path to the groom location would be the same as the one currently used by lifeguards from Port Hueneme Beach Park. The grooming width would measure approximately 100 feet parallel to the coastline (Figure 2). The removed sands would be placed on the beach adjacent to the groomed area. The grooming procedure would be completed within several hours, including removal of equipment from the beach. The designated grooming area would be permanently marked with rods driven deep into the sand. Elevation markings would be depicted on the rods. The grooming location would be coordinated with the Service to limit potential impact to habitat areas. Work would be conducted via PT34 Earthwork, Mechanical. BMPs 3, 4, 8, 21, 22, 24, and 25 (described below) would be implemented as appropriate.

During the grooming operation, the work site would be secured by the District to prevent interruption by or injury of the general public. Members of the Ventura County Sheriff

Department or lifeguards, as well as their designees, may assume responsibility for the protective duty.

Figure 2. Beach Elevation Management Plan access route and grooming area.

Mitigation Activities

The District implements habitat restoration work both as grant projects and as compensatory mitigation for capital improvement or repair projects. Actions conducted by District staff and contractors include:

a. periodic site inspection;
b. irrigation installation, operation and maintenance;
c. hand, mechanical, and chemical weeding;
d. seeding;
e. planting of container stock;
f. rodent control;
g. and minor grading.

Activities with the potential to affect sensitive species are described by the activity code in the following text. The District evaluates mitigation sites for the potential to support sensitive species, and implements BMPs or avoids work during the breeding season for the Least Bell's vireo and southwestern willow flycatcher, as appropriate. Proposed mitigation activities for each year will be included in the District's annual work plan that will be submitted to the Corps and reviewed for compliance and inclusion in this biological and conference opinion.

Table 3. Mitigation/Restoration task descriptions

Code	Mitigation/Restoration Task Descriptions
PM04	MITIGATION ANNUAL REPORT. Field and report review/writing time associated with production of an annual report, includes site data collection, map drafting and data work.
PM05	MITIGATION SITE INSPECTION. Field inspection by District staff when no contractors are out on site to check site needs/conditions.
PM06	MITIGATION FIELDWORK. When O&M Staff conduct irrigation repairs and spot treatments of weeds, access road maintenance, and fencing/signage tasks on mitigation sites.
PM11	MITIGATION CONTRACTOR MANAGEMENT AND INSPECTION. Used for field inspections when contractor is working or has worked at site to verify tasks, personnel, equipment, and other information.
PM13	MITIGATION CONTRACTOR FIELD WORK. Contractor field work such as mowing, herbicide application, grading, planting, etc.

The Corps and District will submit a mitigation/restoration plan to the Service for approval at least 30 days prior to initiating project activities that includes:

- Location and description of the mitigation/restoration to be performed;
- Information about the presence and extent of least Bell's vireo and southwestern willow flycatcher territories in the vicinity of the mitigation project based on known data and average territory size;
- An estimate of how many territories or portions of territories will be affected by the vegetation removal;
- Information on the presence and extent of tidewater gobies or California red-legged frogs, and how these species are anticipated to be affected by the project;
- An estimated level of take associated with the project, and comparison to the level of take allowed in the Incidental Take Statement associated with this biological opinion; and

- A description of monitoring and maintenance that will be conducted following the vegetation removal.

Minimization Measures
To reduce adverse effects to listed species and migratory birds the District has incorporated numerous general BMPs into their project description (District 2008; District 2010). The proposed BMPs are summarized below.

General BMPs

BMP 1	Avoid Channel Work during the Rainy Season
BMP 2	Prevent Discharge of Silt-Laden Water during Concrete Channel Cleaning
BMP 3	Location of Temporary Stockpiles
BMP 4	Survey for Habitat Prior to Routine Maintenance Work
BMP 5	Survey for Steelhead (*Oncorhynchus mykiss*) Migration Conditions and Sensitive Aquatic Species
BMP 6	Survey for Steelhead Rearing Habitat and Sensitive Aquatic Species
BMP 7	Continue Existing Procedures for Sediment Removal and Vegetation Control for Calleguas Creek, Conejo Creek, and Revolon Slough
BMP 8	Avoid Disturbance to Native Beach or Wetland Species
BMP 9	Aquatic Pesticide BMPs
BMP 10	Leave Vegetation on Upper Basin Slopes
BMP 11	Leave Patches of Vegetation in Channel Bottom
BMP 12	Leave Herbaceous Wetland Vegetation in Channel Bottom
BMP 13	Maximum 15-foot Vegetation-Free Zone at the Toe of the Bank
BMP 14	Avoid Road Base Discharge
BMP 15	Mitigate/Replace Temporary Impacts to Habitat
BMP 16	Oak Tree Mitigation Ratio
BMP 17	Concrete Wash-Out Protocols
BMP 18	Water Diversion Guide
BMP 19	Minimize Erosion from Stream Gauge Maintenance
BMP 20	Implementation of Integrated Pest Management Program
BMP 21	Avoid Spills and Leaks
BMP 22	Biological Surveys in Appropriate Habitat Prior to Vegetation Maintenance
BMP 23	Invasive Plant Removal Protocols
BMP 24	Air Quality BMPs
BMP 25	Construction Noise BMPs (BMP 24 in Los Angeles Regional Water Quality Control Board Permit)

The District has also incorporated the following species-specific measures to minimize adverse effects to California red-legged frogs, tidewater gobies, least Bell's vireos and southwestern willow flycatchers.

California red-legged frog (CRLF) minimization measures

CRLF-1 A Service-approved biologist will conduct daily pre-project surveys each morning prior to conducting O&M Program activities at facilities that are potentially occupied by California red-legged frogs, and will relocate all life stages of California red-legged frogs that are likely to be injured or killed by work activities.

CRLF-2 The Service-approved biologist(s) will relocate the California red-legged frogs the shortest distance possible to a location that contains suitable habitat and will not be affected by activities associated with O&M Program activities.

CRLF-3 The Service-approved biologist(s) will maintain detailed records of any individuals that are moved (e.g., size, coloration, any distinguishing features, photographs [digital preferred]) to assist him or her in determining whether translocated animals are returning to the original point of capture.

CRLF-4 Before any activities begin on a project, a Service-approved biologist(s) will conduct a training session for all construction personnel. At a minimum, the training will include a description of the California red-legged frog and its habitat, the specific measures that are being implemented to conserve the California red-legged frog for the current project, and the boundaries within which the project may be accomplished.

CRLF-5 The Service-approved biologist(s) will be present at the work site until all California red-legged frogs have been removed, workers have been instructed, and removal of vegetation in suitable habitat has been completed.

CRLF-6 Service-approved biologists will permanently remove individuals of non-native species to the maximum extent possible.

Tidewater goby (TWG) minimization measures

TWG-1 The District will only conduct channel cleanout activities in J Street drain downstream of Hueneme Road and in the concrete lined portion of the Oxnard Industrial drain upstream and downstream of Hueneme Road if surface water is absent (not from diversion or pumping).

TWG-2 Prior to initiation of dewatering or sediment removal work at facilities in tidewater goby habitat where water is present, a Service-approved biologist will install 1/8 inch block nets outside the impact areas and across the stream a minimum of 20 feet above and below the locations proposed for excavation. If widely separated sites are involved, more than one set of block nets will be placed to protect the work area. The nets will be installed on the first day of work and monitored thereafter for the duration of the work.

TWG-3 Should dewatering occur, any pumps used will be fitted with an anti-entrapment device(s) to prevent tidewater gobies from being drawn into the pump or impinged on intake screening.

TWG-4 Once the block nets are secured, Service-approved biologist(s) will remove all tidewater gobies found between the block nets using a 1/8 inch seine and dip nets, and relocate tidewater gobies to suitable habitat downstream of the proposed project site.

TWG-5 A Service-approved biologist will remain onsite and observe for tidewater gobies and turbidity levels within the work areas during all creek dewatering activities, and will capture and relocate tidewater gobies to suitable habitat as necessary.

TWG-6 If operations cannot be completed in one day, block nets will remain in place overnight or nets will be reinstalled prior to work each day, with subsequent surveys and capture/relocation performed accordingly. The decision of whether to leave nets up overnight or to install new nets at the beginning of each work day will be at the discretion of the Service-approved tidewater goby biologist. All nets left up overnight will be inspected to ensure they are in proper functioning condition and to ensure that fish have not re-entered the work area overnight.

TWG-7 In the case of multiple-day projects, tidewater gobies released from one day's work will not be released into areas projected to be excavated on successive days.

<u>Least Bell's vireo (LBV) and southwestern willow flycatcher minimization measures</u>

LBV-1 Prior to routine maintenance and repair activities performed during the period March 1 to September 15, a District biologist or consulting biologist shall determine if suitable habitat is present for native breeding birds in or within 500 feet of the work area. Project activities shall be postponed to September 15 if such habitat is present in the work area or within 500 feet of the work area, to the extent possible.

LBV-2 In the event that operations and maintenance activities in suitable habitat for least Bell's vireo and/or southwestern willow flycatcher cannot be postponed until after the end of the breeding season (September 15), and if the activities involve the direct disturbance of habitat for these species (i.e., vegetation trimming or removal), the District will conduct surveys according to Service guidance to determine presence or absence of least Bell's vireos and southwestern willow flycatcher. A modified survey protocol may be appropriate on a case-by-case basis and must be approved by the Service.

LBV-3 If a least Bell's vireo or southwestern willow flycatcher nest is detected within the project area during pre-project surveys, a Service-approved biologist will establish a buffer zone around the nest that they deem sufficient to avoid the abandonment of the nest by the adults. The Service generally recommends a minimum 500 foot buffer around nests where no work is to occur; however, a

smaller buffer can be established if deemed protective by the Service-approved biologist and approved by the Service. The Service-approved biologist must monitor the nests during all O&M Program activities occur immediately adjacent to buffer zones to determine the effects of project activities on the nesting least Bell's vireos and southwestern willow flycatcher. The Service-approved biologist will have the authority to stop work if deemed necessary to protect the nesting birds.

LBV-4 For mitigation/restoration projects where non-native plant species are targeted for removal within suitable habitat for Least Bell's vireos or southwestern willow flycatchers, native vegetation will be left in place to the maximum extent practical; willows (*Salix* sp.) and cottonwoods (*Populus* sp.) with a diameter at breast height of 8 inches or greater may be trimmed, but will be left in place.

ANALYTICAL FRAMEWORK FOR THE JEOPARDY AND ADVERSE MODIFICATION DETERMINATIONS

Jeopardy Determination

The jeopardy analysis in this Biological Opinion relies on four components: (1) the *Status of the Species,* which evaluates the range-wide condition of the tidewater goby, California red-legged frog, least Bell's vireo, and southwestern willow flycatcher and the factors responsible for that condition, and their survival and recovery needs; (2) the *Environmental Baseline,* which evaluates the condition of the tidewater goby, California red-legged frog, least Bell's vireo, and southwestern willow flycatcher in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of these species and subspecies; (3) the *Effects of the Action,* which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated or interdependent activities on the tidewater goby, California red-legged frog, least Bell's vireo, and southwestern willow flycatcher; and (4) the *Cumulative Effects,* which evaluates the effects of future, non-Federal activities in the action area on the tidewater goby, California red-legged frog, least Bell's vireo, and southwestern willow flycatcher.

In accordance with policy and regulation, the jeopardy determination is made by evaluating the effects of the proposed Federal action in the context of the current status of the tidewater goby, California red-legged frog, least Bell's vireo, and southwestern willow flycatcher, taking into account any cumulative effects, to determine if implementation of the proposed action is likely to cause an appreciable reduction in the likelihood of both the survival and recovery of the tidewater goby, California red-legged frog, least Bell's vireo, and southwestern willow flycatcher, in the wild.

The jeopardy analysis in this biological opinion places an emphasis on consideration of the range-wide survival and recovery needs of the tidewater goby, California red-legged frog, least Bell's vireo, and southwestern willow flycatcher, and the role of the action area in their survival and recovery, as the context for evaluating the significance of the effects of the proposed Federal action, taken together with cumulative effects, for purposes of making the jeopardy determination.

Adverse Modification Determination

The Biological Opinion does not rely on the regulatory definition of "destruction or adverse modification" of critical habitat at 50 CFR 402.02. Instead, we rely on the statutory provisions of the Act to complete the following analysis with respect to critical habitat.

In accordance with policy and regulation, the adverse modification analysis in this Biological Opinion relies on four components: (1) the *Status of Critical Habitat*, which evaluates the range-wide condition of designated critical habitat for the tidewater goby, California red-legged frog and southwestern willow flycatcher in terms of primary constituent elements (PCEs), the factors responsible for that condition, and the intended recovery function of the critical habitat overall; (2) the *Environmental Baseline*, which evaluates the condition of the critical habitat in the action area, the factors responsible for that condition, and the recovery role of the critical habitat in the action area; (3) the *Effects of the Action*, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated and interdependent activities on the PCEs and how that will influence the recovery role of the affected critical habitat units; and (4) *Cumulative Effects*, which evaluates the effects of future non-Federal activities in the action area on the PCEs and how that will influence the recovery role of affected critical habitat units.

For purposes of the adverse modification determination, the effects of the proposed federal action on the critical habitat of the tidewater goby, California red-legged frog and southwestern willow flycatcher are evaluated in the context of the range-wide condition of the critical habitat, taking into account any cumulative effects, to determine if the critical habitat range-wide would remain functional (or would retain the current ability for the PCEs to be functionally established in areas of currently unsuitable but capable habitat) to serve its intended recovery role for the tidewater goby, California red-legged frog and southwestern willow flycatcher.

The analysis in the Biological Opinion places an emphasis on using the intended range-wide recovery function of critical habitat for the tidewater goby, California red-legged frog and southwestern willow flycatcher and the role of the action area relative to that intended function as the context for evaluating the significance of the effects of the proposed Federal action, taken together with cumulative effects, for purposes of making the adverse modification determination.

STATUS OF THE SPECIES

Tidewater goby

The tidewater goby was listed as endangered on March 7, 1994 (59 Federal Register (FR) 5494). On June 24, 1999, the Service proposed to remove the populations occurring north of Orange County, California, from the endangered species list (64 FR 33816). In November 2002, the Service withdrew this proposed delisting rule and determined it appropriate to retain the tidewater goby's listing as endangered throughout its range (67 FR 67803). A recovery plan for the tidewater goby was completed on December 12, 2005 (Service 2005). A 5-Year Review for the tidewater goby was completed in September 2007 (Service 2007). Detailed information on the biology of the tidewater goby can be found in Wang (1982), Irwin and Soltz (1984), Swift *et al*. (1989), Worcester (1992), and Swenson (1995); much of the information from this account was taken from these sources.

The tidewater goby is endemic to California and typically inhabits coastal lagoons, estuaries, and marshes, preferring relatively low salinities of approximately 12 parts per thousand (ppt). Tidewater goby habitat is characterized by brackish estuaries, lagoons, and lower stream reaches where the water is fairly still but not stagnant. They tend to be found in the upstream portions of lagoons. Tidewater gobies can withstand a range of habitat conditions and have been documented in waters with salinity levels that range from 0 to 41 ppt, temperatures from 46 to 77 degrees Fahrenheit, and depths from approximately 10 inches to 6.5 feet.

The tidewater goby is primarily an annual species in central and southern California, although some variation in life history has been observed. If reproductive output during a single season fails, few (if any) tidewater gobies survive into the next year. Reproduction typically peaks from late April or May to July and can continue into November or December depending on the seasonal temperature and amount of rainfall. Males begin the breeding ritual by digging burrows (3 to 4 inches deep) in clean, coarse sand of open areas. Females then deposit eggs into the burrows, averaging 400 eggs per spawning effort. Males remain in the burrows to guard the eggs. They frequently forego feeding, which may contribute to the mid-summer mortality observed in some populations. Within 9 to 10 days, larvae emerge and are approximately 0.20 to 0.27 inch in length. Tidewater gobies live in vegetated areas in the lagoon until they are 0.60 to 0.70 inch long. When they reach this life stage, they become substrate-oriented, spending the majority of time on the bottom rather than in the water column. Both males and females can breed more than once in a season, with a lifetime reproductive potential of 3 to 12 spawning events. Vegetation is critical for over-wintering tidewater gobies because it provides refuge from high water flows.

Tidewater gobies feed on small invertebrates, including mysids, amphipods, ostracods, snails, aquatic insect larvae, and particularly chironomid larvae. Tidewater gobies of less than 0.30 inch in length probably feed on unicellular phytoplankton or zooplankton, similar to many other early stage larval fishes.

Historically, the tidewater goby occurred in at least 135 California coastal lagoons and estuaries from Tillas Slough near the Oregon border south to Agua Hedionda Lagoon in northern San Diego County. The southern extent of its distribution has been reduced by approximately 8 miles. The species is currently known to occur in about 112 locations, although the number of sites fluctuates with climatic conditions. Currently, the most stable populations are in lagoons and estuaries of intermediate size (5 to 124 acres) that are relatively unaffected by human activities. Six regional clades based on morphological differences (Ahnelt et. al. 2004) that are supported by genetic work done by Dawson et al. (2001) have been used to define recovery units for the tidewater goby (Service 2005). The recovery plan describes 26 recovery sub-units for the tidewater goby (Service 2005).

Tidewater gobies enter the marine environment when sandbars are breached during storm events. The species' tolerance of high salinities (up to 60 ppt) for short periods of time enables it to withstand marine environment conditions where salinities are approximately 35 ppt, thereby allowing the species to re-establish or colonize lagoons and estuaries following flood events. However, genetic studies indicate that individual populations rarely have contact with other populations so natural recolonization may be rare. In Santa Barbara County during the fall of

1994, tidewater gobies were reported as common in the Santa Ynez River 4 miles upstream from the lagoon (Swift et al. 1997); however, by January 1995, they were absent at the upstream sites. Tidewater gobies that are found upstream of lagoons in summer and fall tend to be juveniles. The highest densities of tidewater gobies are typically present in the fall.

Recovery Plan for the Tidewater Goby

The goal of the tidewater goby recovery plan is to conserve and recover the tidewater goby throughout its range by managing threats and perpetuating viable metapopulations within each recovery unit while maintaining morphological and genetic adaptations to regional and local environmental conditions. The decline of the tidewater goby is attributed primarily to habitat loss or degradation resulting from urban, agricultural, and industrial development in and around coastal wetlands. The recovery plan identifies 6 recovery units: North Coast Unit, Greater Bay Unit, Central Coast Unit, Conception Unit, LA/Ventura Unit, and South Coast Unit.

The recovery plan specifics that the tidewater goby may be considered for downlisting when:

1. Specific threats to each metapopulation (e.g., coastal development, upstream diversion, channelization of rivers and streams, etc.) have been addressed through the development and implementation of individual management plans that cumulatively cover the full range of the species.

2. A metapopulation viability analysis based on scientifically credible monitoring over a 10-year period indicates that each Recovery Unit is viable. The target for downlisting is for individual sub-units within each recovery unit to have a 75 percent or better chance of persistence for a minimum of 100 years.

The tidewater goby may be considered for delisting when downlisting criteria have been met and a metapopulation viability analysis projects that all recovery units are viable and have a 95 percent probability of persistence for 100 years.

Tidewater goby critical habitat

We originally designated critical habitat for the tidewater goby on November 20, 2000 (65 FR 69693). In January 2008, revised designated critical habitat was finalized (73 FR 5920). On October 19, 2011, another revision to critical habitat was proposed (76 FR 64996). The proposed rule is scheduled to be finalized in November 2012, therefore when this biological and conference opinion is finalized it is anticipated that the currently designated critical habitat will be in place, and subsequently, the currently proposed critical habitat will be finalized and supersede the currently designated critical habitat.

Under the Act and its implementing regulations, we are required to identify the physical and biological features essential to the conservation of tidewater goby in areas occupied at the time of listing, focusing on the features' primary constituent elements. We consider primary constituent elements to be the elements of physical and biological features that, when laid out in the appropriate quantity and spatial arrangement to provide for a species' life-history processes, are essential to the conservation of the species. The primary constituent elements specific to tidewater goby are substantially the same in the designated and proposed rule, and include:

Persistent, shallow (in the range of about 0.3 to 6.6 feet) still-to-slow-moving, coastal aquatic habitat most commonly ranging in salinity from 0.5 ppt to about 10 to 12 ppt, which provides adequate space for normal behavior and individual and population growth that contain:

- Substrates (e.g., sand, silt, mud) suitable for the construction of burrows for reproduction;

- Submerged and emergent aquatic vegetation, such as *Potamogeton pectinatus*, *Ruppia maritime*, *Typha latifola*, and *Scirpus* spp., that provides protection from predators and high flow events; or

- Presence of a sandbar(s) across the mouth of a lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary, thereby providing relatively stable water levels and salinity.

In total, approximately 10,003 acres fall within the boundaries of the final revised critical habitat designation. The revised critical habitat is located in Del Norte, Humboldt, Mendocino, Sonoma, Marin, San Mateo, Santa Cruz, Monterey, San Luis Obispo, Santa Barbara, Ventura, and Los Angeles Counties, California.

In total, approximately 12,157 ac are included in the proposed critical habitat rule. The proposed critical habitat is located in Del Norte, Humboldt, Mendocino, Sonoma, Marin, San Mateo, Santa Cruz, Monterey, San Luis Obispo, Santa Barbara, Ventura, Los Angeles, Orange, and San Diego Counties, California.

California red-legged frog

The California red-legged frog was federally listed as threatened on May 23, 1996 (61 FR 25813). The Service completed a recovery plan for the species in 2002 (Service 2002a).

Detailed information on the biology of California red-legged frogs can be found in Storer (1925), Stebbins (2003), and Jennings et al. (1992). This species is the largest native frog in the western U.S., ranging from 1.5 to 5.1 inches long. The abdomen and hind legs of adults are largely red; the back is characterized by small black flecks and larger irregular dark blotches with indistinct outlines on a brown, gray, olive, or reddish background color. Dorsal spots usually have light centers, and dorsolateral folds are prominent on the back. Tadpoles range from 0.6 to 3.1 inches long and are dark brown and yellow with dark spots.

The California red-legged frog uses a variety of habitat types, including various aquatic systems, riparian, and upland habitats. The diet of California red-legged frogs is highly variable. Hayes and Tennant (1985) found invertebrates to be the most common food item of adults. Vertebrates, such as Pacific treefrogs (*Pseudacris regilla*) and California mice (*Peromyscus californicus*), represented over half of the prey mass eaten by larger frogs (Hayes and Tennant 1985). Feeding activity occurs along the shoreline and on the surface of the water. Hayes and Tennant (1985) found juveniles to be active diurnally and nocturnally, whereas adults were largely nocturnal.

California red-legged frogs breed from November through March; earlier breeding has been recorded in southern localities (Storer 1925). Males appear at breeding sites from 2 to 4 weeks before females (Storer 1925). California red-legged frogs are often prolific breeders, typically laying their eggs during or shortly after large rainfall events in late winter and early spring.

Female California red-legged frogs deposit egg masses on emergent vegetation so that the masses float on the surface of the water (Hayes and Miyamoto 1984). Egg masses contain about 2,000 to 5,000 moderately-sized (0.08 to 0.11 inch) in diameter, dark reddish brown eggs (Storer 1925, Jennings and Hayes 1985). Eggs hatch in 6 to 14 days (Storer 1925). Larvae undergo metamorphosis between 3.5 to 7 months after hatching (Storer 1925, Wright and Wright 1949). Sexual maturity can be attained at 2 years of age by males and 3 years of age by females and is usually reached at 3 to 4 years of age (Jennings and Hayes 1985); adults may live 8 to 10 years (Jennings et al. 1992) although the average life span is considered to be much lower.

California red-legged frogs spend most of their lives in and near sheltered backwaters of ponds, marshes, springs, streams and reservoirs. Deep pools with dense stands of overhanging willows and an intermixed fringe of cattails (*Typha* spp.) are considered optimal habitat. California red-legged frogs breed in aquatic habitats. Eggs, larvae, transformed juveniles and adults also have been found in ephemeral creeks and drainages and in ponds that do not have riparian vegetation. California red-legged frogs frequently breed in artificial impoundments such as stock ponds, if conditions are appropriate. Although California red-legged frogs successfully breed in streams and riparian systems, high seasonal flows and cold temperatures in streams often make these sites risky environments for eggs and tadpoles. The importance of riparian vegetation for this species is not well understood. When riparian vegetation is present, California red-legged frogs spend considerable time resting and feeding in it; the moisture and camouflage provided by the riparian plant community likely provide good foraging habitat and may facilitate dispersal in addition to providing pools and backwater aquatic areas for breeding. Accessibility to sheltering habitat is essential for the survival of California red-legged frogs within a watershed, and can be a factor limiting population numbers and distribution.

Juvenile and adult California red-legged frogs may disperse long distances from breeding sites throughout the year. They can be encountered living within streams at distances exceeding 1.8 miles from the nearest breeding site, and have been found up to 400 feet from water in adjacent dense riparian vegetation (Bulger et al. 2003). Some California red-legged frogs have moved long distances over land between water sources during winter rains. Adult California red-legged frogs have been documented to move more than 2 miles in northern Santa Cruz County “without apparent regard to topography, vegetation type, or riparian corridors” (Bulger et al. 2003). Most of these overland movements occur at night. These individual California red-legged frogs were observed to make long-distance movements that are straight-line, point to point migrations over variable upland terrain rather than using riparian corridors for movement between habitats. For the California red-legged frog, suitable habitat is considered to include all aquatic and riparian areas within the range of the species and includes any landscape features that provide cover and moisture (61 FR 25813).

California red-legged frogs have been found at elevations that range from sea level to about 5,000 feet. In the Sierra Nevada Mountains, California red-legged frogs typically occur below

4,000 feet in elevation (61 FR 25813). The historical range of the California red-legged frog extended coastally from southern Mendocino County and inland from the vicinity of Redding, California, southward to northwestern Baja California, Mexico (Jennings and Hayes 1985, Storer 1925). The California red-legged frog has been extirpated or nearly extirpated from 70 percent of its former range. Historically, this species was found throughout the Central Valley and Sierra Nevada foothills. At present, California red-legged frogs are known to occur in 243 streams or drainages in 22 counties, primarily in central coastal California. Four additional occurrences have been recorded in the Sierra Nevada foothills since listing, bringing the total to five extant populations, compared to approximately 26 historical records (61 FR 25813).

Currently, California red-legged frogs are known from three disjunct regions in 26 California counties and one region in Baja California, Mexico (Grismer 2002, Fidenci 2004, Smith and Krofta 2005). The most secure aggregations of California red-legged frogs are found in aquatic sites that support substantial riparian and aquatic vegetation and lack non-native predators. Over-harvesting, habitat loss, non-native species introduction, and urban encroachment are the primary factors that have negatively affected the California red-legged frog throughout its range (Jennings and Hayes 1985, Hayes and Jennings 1988). Habitat loss and degradation, combined with over-exploitation and introduction of exotic predators, were important factors in the decline of the California red-legged frog in the early to mid-1900s. Continuing threats to the California red-legged frog include direct habitat loss due to stream alteration and loss of aquatic habitat, indirect effects of expanding urbanization, competition or predation from non-native species including the bullfrog (*Rana catesbeiana*), catfish (*Ictalurus* spp.), bass (*Micropterus* spp.), mosquitofish (*Gambusia affinis*), and crayfish (*Procambarus clarkii*). Chytrid fungus (*Batrachochytrium dendrobatidis*) is a waterborne fungus that can decimate amphibian populations, and is considered a threat to California red-legged frog populations.

Although the presence of California red-legged frogs is correlated with still water deeper than approximately 1.6 feet, riparian shrubbery, and emergent vegetation (Jennings and Hayes 1985), there are numerous locations in the species' historical range where these elements are well represented yet California red-legged frogs appear to be absent. The cause of local extirpations does not appear to be restricted solely to loss of aquatic habitat. The most likely causes of local extirpation are thought to be changes in faunal composition of aquatic ecosystems (i.e., the introduction of non-native predators and competitors) and landscape-scale disturbances that disrupt California red-legged frog population processes, such as dispersal and colonization. The introduction of contaminants or changes in water temperature may also play a role in local extirpations. These changes may also promote the spread of predators, competitors, parasites and diseases.

<u>Recovery Plan for the California Red-Legged Frog</u>

The recovery plan for the California red-legged frog identifies eight recovery units (Service 2002a). These recovery units are based on the Recovery Team's determination that various regional areas of the species' range are essential to its survival and recovery. The status of this species is considered within the smaller scale of Recovery Units as opposed to the overall range. These recovery units are delineated by major watershed boundaries as defined by U.S. Geological Survey hydrologic units and the limits of the range of the California red-legged frog. The goal of the recovery plan is to protect the long-term viability of all extant populations within

each recovery unit. Within each recovery unit, core areas have been delineated and represent contiguous areas of moderate to high California red-legged frog densities that are relatively free of exotic species such as bullfrogs. The goal of designating core areas is to protect metapopulations that, combined with suitable dispersal habitat, will allow for the long term viability of existing populations. This management strategy will allow for the recolonization of habitat within and adjacent to core areas that are naturally subjected to periodic localized extinctions, thus assuring the long-term survival and recovery of California red-legged frogs.

A summary of the recovery criteria, which must be met in order for the Service to consider delisting the species, is below.

1. Suitable habitats within all core areas are protected and/or managed for California red-legged frog in perpetuity, and the ecological integrity of these areas is not threatened by adverse anthropogenic habitat modification;

2. Existing populations, throughout the range, are stable;

3. Populations are geographically distributed in a manner that allows for the continued existence of viable metapopulations despite fluctuations in the status of individual populations;

4. The subspecies is successfully reestablished in portions of its historical range such that at least one reestablished population is stable/increasing at each core area where frogs are currently absent; and

5. The amount of additional habitat needed for population connectivity, recolonization, and dispersal has been determined, protected, and managed for California red-legged frogs.

California red-legged frog critical habitat
Critical habitat was designated for the species on April 13, 2006 (71 FR 19244). On March 17, 2010, the Service revised the designation of critical habitat to encompass an area more than three times larger than the 2006 designation for the species (75 FR 12815).

In accordance with section 3(5)(A)(i) of the Act and regulations at 50 CFR 424.12, in determining which areas to designate as critical habitat, we are required to identify the known physical and biological features (also known as Primary Constituent Elements (PCEs)) essential to the conservation of the California red-legged frog. All areas designated as critical habitat for California red-legged frogs are occupied, are within the species' historical geographic range, and contain sufficient PCEs to support at least one life history function. Based on our current knowledge of the life history, biology, and ecology of the species and the requirements of the habitat to sustain the essential life history functions of the species, we have determined that the PCEs for California red-legged frog critical habitat are:

1. Aquatic Breeding Habitat. Standing bodies of fresh water (with salinities less than 7.0 ppt), including: natural and manmade (e.g., stock) ponds, slow moving streams or pools within

streams, and other ephemeral or permanent water bodies that typically become inundated during winter rains and hold water for a minimum of 20 weeks in all but the driest of years.

2. Non-Breeding Aquatic Habitat. Fresh water habitats, as described above, that may or may not hold water long enough for the species to hatch and complete its aquatic life cycle but that do provide for shelter, foraging, predator avoidance, and aquatic dispersal for juvenile and adult California red-legged frogs. Other wetland habitats that would be considered to meet these elements include, but are not limited to: plunge pools within intermittent creeks; seeps; quiet water refugia during high water flows; and springs of sufficient flow to withstand the summer dry period.

3. Upland Habitat. Upland areas within 200 feet of the edge of the riparian vegetation or dripline surrounding aquatic and riparian habitat and comprises various vegetation series such as grasslands, woodlands, and/or wetland/riparian plant species that provides the California red-legged frog shelter, forage, and predator avoidance. Upland features are also essential in that they are needed to maintain the hydrologic, geographic, topographic, ecological, and edaphic features that support and surround the wetland or riparian habitat. These upland features contribute to the filling and drying of the wetland or riparian habitat and are responsible for maintaining suitable periods of pool inundation for larval California red-legged frogs and their food sources, and provide breeding, non-breeding, feeding, and sheltering habitat for juvenile and adult California red-legged frogs (e.g., shelter, shade, moisture, cooler temperatures, a prey base, foraging opportunities, and areas for predator avoidance). Upland habitat can include structural features such as boulders, rocks and organic debris (e.g. downed trees, logs), as well as small mammal burrows and moist leaf litter.

4. Dispersal Habitat. Accessible upland or riparian dispersal habitat within designated units and between occupied locations within 0.7 mi (1.2 km) of each other that allows for movement between such sites. Dispersal habitat includes various natural habitats and altered habitats such as agricultural fields, which do not contain barriers to dispersal. An example of a barrier to dispersal is a heavily traveled road (Vos and Chardon 1998) constructed without bridges or culverts. Dispersal habitat does not include moderate to high density urban or industrial developments with large expanses of asphalt or concrete, nor does it include large reservoirs over 50 ac (20 ha) in size, or other areas that do not contain those features identified in PCE 1, 2, or 3 as essential to the conservation of the species. This designation is designed for the conservation of PCEs necessary to support the life history functions and essential to the conservation of the species. Because not all life history functions require all the PCEs, not all areas designated as critical habitat will contain all the PCEs. Each of the areas designated as critical habitat have been determined to contain sufficient PCEs to provide for one or more of the life history functions of the California red-legged frog.

Least Bell's Vireo

The least Bell's vireo was federally listed as endangered on May 2, 1986 (51 FR 16474) and critical habitat was designated for the subspecies on February 2, 1994 (59 FR 4845). A draft recovery plan was completed in 1998 (Service 1998); no final plan has been published. The Service completed a 5-year review for the least Bell's vireo in September 2006 in which we

indicated that, due to new information on the subspecies and an improved understanding of ongoing recovery actions to reduce threats, the recovery goals and strategies should be modified and refined. In addition, we recommended that the least Bell's vireo should be down listed from endangered status to threatened status because of a 10-fold increase in population size since its listing in 1986, expansion of locations with breeding least Bell's vireo throughout southern California, and conservation and management of suitable breeding habitat throughout its range (Service 2006). Additional information on the least Bell's vireo may be found in Wilbur (1980), Garrett and Dunn (1981), Zembal et al. (1985), Miner (1989), Pike and Hays (1992), and Service (1998).

The least Bell's vireo is a small, migratory songbird that nests and forages almost exclusively in riparian woodland habitats. The least Bell's vireo is in the family Vireonidae and is one of four subspecies of Bell's vireo (*Vireo bellii*) that have been recognized (American Ornithological Union (AOU) 1998), with each subspecies isolated from one another throughout the year (Hamilton 1962; Service 1998). They are site-tenacious across breeding seasons, highly territorial, and almost exclusively insectivorous. Least Bell's vireos are obligate riparian breeders, typically inhabiting structurally diverse woodlands along watercourses that feature dense cover within 3 to 6 feet of the ground and a dense, stratified canopy (Goldwasser 1981; Salata 1983; Gray and Greaves 1984; Service 1998). The understory within this riparian habitat is typically dominated by mulefat (*Baccharis salicifolia*), California wild rose (*Rosa californica*), poison oak (*Toxicodendron diversiloba*), sandbar willow (*Salix hindsiana*), young individuals of other willow species, and several perennial species (Service 1998). Important canopy species include mature arroyo willows (*S. lasiolepis*) and black willows (*S. gooddingii*), and occasional cottonwoods, western sycamore (*Platanus racemosa*), or coast live oak (*Quercus agrifolia*). Least Bell's vireos primarily forage and nest in riparian habitat, but they may also use adjoining upland scrub habitat (Salata 1983; Kus and Miner 1989).

Least Bell's vireos primarily feed on invertebrates, especially lepidopteran larvae, within willow stands or associated riparian vegetation (Miner 1989; Brown 1993). Least Bell's vireos occasionally forage in nonriparian vegetation such as coastal sage scrub, chaparral, and oak woodlands, although foraging in these other habitats usually occurs within 100 feet of the edge of riparian vegetation (Salata 1983; Gray and Greaves 1984; Kus and Miner 1989). Least Bell's vireo feeding behavior largely consists of gleaning prey from leaves or woody surfaces while perched or hovering, and less frequently by capturing prey by aerial pursuit (Salata 1983; Miner 1989). Least Bell's vireos concentrate most of their foraging between 0 to 20 feet above ground level (Salata 1983; Miner 1989).

Least Bell's vireos generally arrive in southern California breeding areas by mid-March to early April, with males arriving before females and older birds arriving before first-year breeders (Service 1998). Least Bell's vireos generally remain on the breeding grounds until late September, although some post-breeding migration may begin as early as late July (Service 1998). Male least Bell's vireos establish and defend breeding territories through singing and physically chasing intruders (Barlow 1962; Beck 1996; Service 1998). Although territories typically range in size from 0.5 to 7.5 acres (Service 1998), no relationship appears to exist between territory size and various measures of territory quality (Newman 1992).

Nest building commences a few days after pair formation, with the female selecting a nest-site location and both sexes constructing the nest (Pitelka and Koestner 1942; Barlow 1962; Service 1998). Nests are typically suspended in forked branches within 3 feet above the ground with no clear preference for any particular plant species as the nest host (Nolan 1960; Barlow 1962; Gray and Greaves 1984; Service 1998). Typically 3 or 4 eggs are laid on successive days shortly after nest construction (Service 1998). The eggs are incubated by both parents for about 14 days with the young remaining in the nest for another 10 to 12 days (Pitelka and Koestner 1942; Nolan 1960; Barlow 1962). Each nest appears to be used only once with new nests constructed for each nesting attempt (Greaves 1987). Least Bell's vireos may attempt up to five nests within a breeding season, but they are typically limited to one or two successful nests within a given breeding season (Service 1998).

Multiple long-term monitoring studies indicate that approximately 59 percent of nests successfully produce fledglings, although on average only 1.8 chicks fledge per nest (Service 1998). Although least Bell's vireo nests appear to be more accessible to terrestrial predators because of their relatively low placement (Franzreb 1989), western scrub-jays (*Aphelocoma californica*) have been documented to account for the majority of documented depredation events (Peterson 2002; Peterson et al. 2004); depredation by jays and other avian predators may have selected for relatively low nest placement (Ferree 2002). Predation rates can exceed 60 percent of the least Bell's vireo nests in a given area within a year (Kus 1999), but typical nest predation rates average around 30 percent (Franzreb 1989), which is comparable to predation rates for other North American passerines (Martin and Clobert 1996; Grishaver et al. 1998; Ferree 2002).

Nest parasitism by cowbirds is another major source of failure for least Bell's vireo nests (Franzreb 1989; Service 1998; Kus 1999, 2002; Griffith and Griffith 2000; Sharp 2002); nests that are parasitized are either abandoned or fledge cowbird chicks rather than least Bell's vireos. Cowbirds did not historically occur within the least Bell's vireo's range, and therefore least Bell's vireos have not evolved adequate defenses to avoid loss of productivity due to parasitism (Franzreb 1989; Kus 2002). Parasitism of least Bell's vireo nests may exceed 42 percent in some locations (Kus 1999), but extensive cowbird trapping and focused nest monitoring can substantially reduce parasitism or its effects (Franzreb 1989; Service 1998; Griffith and Griffith 2000; Kus 2002).

Cowbird trapping has proven a successful tool to halt least Bell's vireo population declines over the short term within a limited area, but Kus and Whitfield (2005) have argued that trapping may not be the best method for long-term recovery of the least Bell's vireo because maintaining cowbird populations at low levels may not allow the least Bell's vireo to evolve resistance to cowbird parasitism. The issue of cowbird trapping remains unclear as to the best way to manage this threat over the long term, and additional research is needed to determine whether there are any alternatives to the intensive cowbird trapping programs currently being implemented (Service 2006).

Fledgling least Bell's vireos expand their dispersal distances from about 35 feet the first day to about 200 feet several weeks after fledging (Hensley 1950; Nolan 1960). This distance has been shown to increase to at least 1 mile prior to their first fall migration (Gray and Greaves 1984).

Banding records indicate that while most first-year breeding least Bell's vireos return to their natal drainage after winter migration, some disperse considerable distances to other breeding locations (Greaves and Labinger 1997; Service 1998; Kus and Beck 1998). Movement by least Bell's vireos between drainages within San Diego County is not uncommon (Kus and Beck 1998). Additionally, several least Bell's vireos banded as nestlings in San Diego County have been resighted as breeding adults in Ventura County, and the opposite movement from Ventura to San Diego has also been observed (Greaves and Labinger 1997). The maximum dispersal distance currently documented is approximately 130 miles (Service 1998), but this is probably an underestimate due to the limited number of least Bell's vireos that are banded and insufficient re-sighting efforts. Although movement between sites by older birds may occur, site fidelity by least Bell's vireos after the first breeding season is generally high, and most dispersal between sites occurs between the time that least Bell's vireos fledge from their nest and their first breeding season (Service 1998).

The least Bell's vireo historically occupied willow riparian habitats from Tehama County, in northern California, southward to northwestern Baja California, Mexico, and as far east as Owens Valley, Death Valley, and the Mojave River (Grinnell and Miller 1944; Service 1998). Although originally considered to be abundant locally, regional declines of this subspecies were noticeable by the 1940s (Grinnell and Miller 1944), and the least Bell's vireo was believed to have been extirpated from California's Central Valley by the early 1980s (Franzreb 1989). Except for a few outlying pairs, the least Bell's vireo is currently restricted to southern California south of the Tehachapi Mountains and northwestern Baja California (Wilbur 1980; Garrett and Dunn 1981; Franzreb 1989; U.S. Geological Survey (USGS) 2002). The largest current concentrations of least Bell's vireos are in San Diego County along the Santa Margarita River on Camp Pendleton and in Riverside County at the Prado flood control basin (Service 2006).

Historically, the San Joaquin and Sacramento Valleys were considered to be the center of the least Bell's vireo's breeding range (60 to 80 percent of the historical population; 51 FR 16474), but the least Bell's vireo has not yet meaningfully re-colonized those areas. In 2005 and 2006, the first breeding pair of least Bell's vireos detected in the San Joaquin Valley since the listing of the this subspecies successfully bred at the San Joaquin National Wildlife Refuge in Stanislaus County (Service 2006). There have been no sightings of least Bell's vireos in the Sacramento Valley since prior to the listing, and it is unlikely that any breeding least Bell's vireos have occurred within recent years in the Sacramento Valley (Service 2006).

Greater than 99 percent of the remaining least Bell's vireos were concentrated in southern California (Santa Barbara County and southward) at the time of the listing in 1986 (51 FR 16474), with San Diego County containing 77 percent of the population. Greater than 99 percent still remain in southern California, although the populations are now more evenly distributed in southern California with 54 percent of the total population occurring in San Diego County and 30 percent of the population occurring in Riverside County (Service 2006); however, there has been only a slight shift northward in the subspecies' overall distribution. Thus, despite a significant increase in overall population numbers, the population remains restricted to the southern portion of its historical range (Service 2006).

Causes for decline of the least Bell's vireo included destruction or degradation of habitat, river channelization, water diversions, lowered water tables, gravel mining, agricultural development, and cowbird parasitism (Service 1986, 1994, 1998). Habitat losses had fragmented most remaining populations into small, disjunct, widely dispersed subpopulations (Franzreb 1989). Habitat fragmentation negatively affects abundance and distribution of neotropical migratory songbirds, in part by increasing incidence of nest predation and parasitism (Whitcomb et al. 1981; Small and Hunter 1988; Yahner and DeLong 1992; Sharp 2002; Peterson 2002). Least Bell's vireos nesting in areas containing a high proportion of degraded habitat have lower productivity (e.g., hatching success) than those in areas of high quality riparian woodland (Pike and Hays 1992).

The least Bell's vireo population in the U.S. has increased 10-fold since its listing in 1986, from 291 to 2,968 known territories (Service 2006). The population has grown during each 5-year period since the original listing, although the rate of increase has slowed over the last 10 years. Population growth has been greatest in San Diego County and Riverside County, with lesser but significant increases in Orange County, Ventura County, San Bernardino County, and Los Angeles County. The population in Santa Barbara County has declined since the listing in 1986, although it is uncertain whether this population was historically significant. Kern, Monterey, San Benito, and Stanislaus counties have had a few isolated individuals and/or breeding pairs since the original listing, but these counties have not supported any sustained populations (Service 2006).

Draft Recovery Plan for the Least Bell's vireo

The 1998 draft recovery plan for the least Bell's vireo states that the goal of recovery efforts is the reclassification of the subspecies from endangered to threatened and, ultimately, delisting of the subspecies. The draft plan states that reclassification to threatened status may be considered when there are stable or increasing population/metapopulations of least Bell's vireos for a period of 5 consecutive years, each consisting of several hundred or more breeding pairs at the following sites: Tijuana River, Dalzura/Jamul Creek/Otay River, Sweetwater River, San Diego River, San Luis Rey River, Camp Pendleton/Santa Margarita River, Santa Ana River, an Orange County/Los Angeles County metapopulation, Santa Clara River, Santa Ynez River, and an Anza Borrego Desert metapopulation. The draft plan states that each of these populations and metapopulations should be protected and managed.

The draft plan states that delisting of the least Bell's vireo may be considered when the subspecies meets the criterion for downlisting and there are stable or increasing least Bell's vireo population/metapopulations for a period of 5 consecutive years established at the following currently unoccupied areas of the subspecies' historical range: Salinas River, a San Joaquin Valley metapopulation, and a Sacramento Valley metapopulation. The draft plan states that each of these populations and metapopulations should be protected and managed.

Lastly, the draft plan states that threats to the least Bell's vireo at the aforementioned sites should be reduced or eliminated so that these populations/metapopulations are capable of persisting without significant human intervention, or perpetual endowments are secured for cowbird trapping and exotic plant control in riparian habitat occupied by the least Bell's vireos.

The draft recovery plan describes a strategy for reclassification, recovery, and delisting. Instrumental to this strategy is securing and managing riparian habitat within the historical breeding range of the least Bell's vireo, annual monitoring and rangewide surveys, and research activities necessary to monitor and guide the recovery effort.

Southwestern Willow Flycatcher

The southwestern willow flycatcher was federally listed as endangered on February 27, 1995 (60 FR 10694). The final recovery plan for the subspecies was completed in August 2002 (Service 2002b).

The southwestern willow flycatcher breeds in southern California (north to the Santa Ynez River, Kern River, and Independence on the Owens River), southern Nevada, southern Utah, Arizona, New Mexico, and extreme western Texas. All subspecies of the willow flycatcher are completely migratory. The species as a whole winters from southern Mexico south through Central America to Panama and western Venezuela. Subspecies *extimus* has been collected in winter in Guatemala, El Salvador, Honduras, and Costa Rica (Unitt 1987).

Unitt (1987) concluded that the southwestern willow flycatcher was once fairly common in the Los Angeles Basin, where habitat is virtually absent now. Approximately 616 acres of riparian habitat has regenerated along the South Fork Kern River since the early 1980s, but fluctuations in the number of territories in this area has made it difficult to determine a trend in the population for the area (Whitfield et al. 1999). Downstream from the South Fork Kern River, willow flycatchers (unknown subspecies) were common breeders in the early 1900s, but today virtually no riparian habitat remains. Outside of the Kern River, southwestern willow flycatcher populations are present along the Owens, San Luis Rey, and Santa Margarita (Camp Pendleton) Rivers. Changes in land use along the San Luis Rey River have improved habitat quality and extent, which has resulted in an increase in the number of territorial southwestern willow flycatcher males from 12 in the late 1980s (Unitt 1987) to more than 40 in 1999 (Kus et al. 1999). In contrast, the populations on Camp Pendleton have remained fairly constant for the past two decades despite apparently suitable habitat to support population expansion. The remaining southwestern willow flycatcher populations in southern California, most of which number fewer than five territories, occur at scattered sites along drainages that have changed little in the past 15 years.

The southwestern willow flycatcher breeds only in riparian woodland, typically adjacent to or over water. Surface water or saturated soil is usually present in or adjacent to nesting sites during at least the initial portion of the nesting period (Muiznieks et al. 1994, Tibbits et al. 1994). Riparian woodland used by willow flycatchers typically has a canopy and an understory of shrubs or saplings. Native willows dominate the habitat commonly represented in current and historical records.

Southwestern willow flycatchers do nest in some riparian habitats containing and even dominated by salt cedar (*Tamarisk* sp.)_ (McKernan and Braden 1999, Paradzick et al. 2000). In terms of southwestern willow flycatcher productivity, the suitability of tamarisk dominated habitats is not known. Southwestern willow flycatcher productivity in some sites dominated by non-native vegetation is lower than in some native-dominated habitats (Sferra et al. 1997, Sogge

et al. 1997). The reverse is also true, however, within some tamarisk-dominated habitats where southwestern willow flycatcher productivity is similar or higher than nearby native-dominated sites (McKernan and Braden 1999, Paradzick et al. 1999).

The southwestern willow flycatcher is a diurnal insectivore, catching its prey on the wing usually in the middle story of riparian woodland. Males maintain and advertise a territory by singing to attract females. There is little information on the factors a southwestern willow flycatcher female uses to select a mate, though it may be related to some factor of habitat quality or potential quality of the male (Service 2002b). Territorial defense begins immediately after spring arrival. Females occasionally sing, apparently when stimulated by territorial disputes (Sogge et al. 1997). Male southwestern willow flycatchers sing most persistently early in the breeding season, but song rate declines as the season progresses, particularly once the male finds a mate and nesting efforts begin (Finch et al. 2000). Their response to taped playback of songs during surveys has also been known to decrease as the nesting season progresses. Mapped breeding territory sizes are 0.15 to 0.5 acre on the Colorado River (Sogge et al. 1997), 0.5 to 1.25 acres along the Verde River, Arizona (Sogge 1995), and 0.35 to 5.7 acres along the Kern River, California (Whitfield and Enos 1996).

Southwestern willow flycatchers typically arrive on breeding grounds from late April to early June (Maynard 1995, Skaggs 1996, Sferra et al. 1997). Evidence gathered during multi-year studies of color-banded populations show that although most southwestern willow flycatchers return to former breeding areas, they regularly move among sites within and between years (Netter et al. 1998). From 1997 to 2000, 66 to 78 percent of southwestern willow flycatchers returned to the same breeding site (Luff et al. 2000). Within drainage movements are more common than between drainage movements.

Nests are initiated usually within one week of pair formation, 10 to 14 days after spring arrival. Building nests takes 3 to 8 days. In historical egg collections from southern California, 86 percent of nests were in willow, 4 percent in *Urtica dioica* (stinging nettles), and 10 percent in other plants (Unitt 1987). Females typically lay one egg per day, until the nest contains three to four eggs. Incubation begins after the last egg is laid, and lasts 12 to 13 days (Service 2002b). For the southwestern willow flycatcher, incubation generally lasts 12 to 15 days from the date that the last egg was laid. During incubation, females spend approximately 50 percent of the day attending (incubating or shading) the eggs and incubate throughout the night. Incubation and shading bouts can last from less than 1 to more than 60 minutes (Finch et al. 2000).

Southwestern willow flycatcher young usually leave the nest 12 to 15 days after hatching. During the brooding period, the young are cared for by both the male and female. Feeding trips during the peak of this period can reach 30 trips per hour during days 5 to 10 (Finch et al. 2000). Fledglings stay close to the nest and each other for 3 to 5 days, and may repeatedly return to and leave the nest during this period (Spencer et al. 1996).

The decline of the southwestern willow flycatcher is attributed to numerous factors, including nest depredation and brood parasitism by the brown-headed cowbird. However, large scale loss of southwestern wetlands, particularly cottonwood-willow riparian habitat, is the principal reason for the southwestern willow flycatcher's current status. Habitat loss is a result of urban and

agricultural development, water diversion and impoundment, livestock grazing, and hydrological changes attributable to these and other land uses (60 FR 10694). In some cases, willow flycatchers are faced with situations that force movement, such as when catastrophic habitat loss occurs from fire or flood. Several such cases have been documented, with some of the resident willow flycatchers moving to remaining habitat within the breeding site, some moving to other sites 1.2 to 16.8 miles away (Paxton et al. 1997, Owen and Sogge 1997), and others disappearing without being seen again. For a discussion on the status of riparian habitat, see the status of the least Bell's vireo above.

Recovery Plan for the Southwestern Willow Flycatcher

The 2002 final recovery plan for the southwestern willow flycatcher identifies that the goal of recovery efforts is the reclassification of the subspecies from endangered to threatened and, ultimately, delisting of the subspecies. The plan states that reclassification to threatened status may be considered when either of the following criteria has been met:

Criterion A: Increase the total known population to a minimum of 1,950 territories (equating to approximately 3,900 individuals), geographically distributed to allow proper functioning as metapopulations, so that the southwestern willow flycatcher is no longer in danger of extinction. For reclassification to threatened status, these prescribed numbers and distributions must be reached as minimum, and maintained over a 5 year period.

Criterion B: Increase the total known populations to a minimum of 1,500 territories (equating to approximately 3,000 individuals), geographically distributed among Management Units and Recovery Units, so that the southwestern willow flycatcher is no longer in danger of extinction. Recovery Units are large watershed or hydrologic areas, while Management Units are a subset of the Recovery units and encompass local drainages and distinct geographic features. For reclassification to threatened status, these prescribed numbers and distributions must be reached as a minimum, and maintained over a 3 year period, and the habitats supporting this subspecies must be protected from threats and loss.

The recovery plan states that the southwestern willow flycatcher may be removed from the list of threatened and endangered species when both of the following criteria have been met:

Criterion 1: Meet and maintain, at a minimum, the population levels and geographic distribution specified under reclassification to threatened Criterion A.

Criterion 2: Provide protection from threats and create/secure sufficient habitat to assure maintenance of these populations and/or habitat over time. The sites containing southwestern willow flycatcher breeding groups, in sufficient number and distribution to warrant downlisting, must be protected into foreseeable future through development and implementation of conservation management agreements (e.g., public land management planning process for Federal lands, habitat conservation plans (under Section 10 of the Act), conservation easements, and land acquisition agreements for private lands, and intergovernmental conservation agreements with Tribes). Prior to delisting, the Service must confirm that the agreements have been created and executed in such a way as to achieve their role in southwestern willow flycatcher recovery, and individual agreements for all areas within all Management Units

(public, private, and Tribal) that are critical to metapopulation stability (including suitable, unoccupied habitat) must have demonstrated their effectiveness for a period of at least 5 years.

The recovery plan categorizes recovery actions into nine types: (1) increase and improve occupied, suitable, and potential breeding habitat; (2) increase metapopulation stability; (3) improve demographic parameters; (4) minimize threats to wintering and migration habitat; (5) survey and monitor; (6) conduct research; (7) provide public education and outreach; (8) assure implementation of laws, policies, and agreements that benefit the southwestern willow flycatcher; and (9) track recovery progress.

Critical habitat for the southwestern willow flycatcher
Critical habitat was designated for the subspecies on October 19, 2005 (70 FR 60886). In California, units are located in Kern, Santa Barbara, San Bernardino, and San Diego counties; critical habitat is not designated in the action area. However, on August 15, 2011, revised critical habitat was proposed including riparian areas within the Ventura River and Santa Clara River (76 FR 50542). The proposed rule is anticipated to be finalized in December 2012.

In total, approximately 2,090 stream miles are being proposed for designation as critical habitat. These areas are being proposed as stream segments, with the lateral extent including the riparian areas and streams that occur within the 100-year floodplain or flood-prone areas.

In accordance with sections 3(5)(A)(i) and 4(b)(1)(A) of the Act and regulations at 50 CFR 424.12, in determining which areas within the geographical area occupied by the species (in this case a subspecies) at the time of listing to designate as critical habitat, we consider the physical or biological features essential to the conservation of the flycatcher and which may require special management considerations or protection. These include, but are not limited to:

1. Space for individual and population growth and for normal behavior;

2. Food, water, air, light, minerals, or other nutritional or physiological requirements;

3. Cover or shelter;

4. Sites for breeding, reproduction, or rearing (or development) of offspring; and

5. Habitats that are protected from disturbance or are representative of the historical, geographical, and ecological distributions of a species.

ENVIRONMENTAL BASELINE

The implementing regulations for section 7(a)(2) define the action area being addressed in a consultation as the area that may be directly or indirectly affected by the proposed action (50 *Code of Federal Regulations* 402.02). We consider the action area for this biological opinion to include anywhere in Ventura County where the District currently has facilities, where the District may have facilities in the future, and where the District conducts mitigation related to the O&M Program.

Ventura County contains three major watersheds, the Ventura River watershed, Santa Clara River watershed, and the Calleguas Creek watershed. In addition to these three large watersheds, there are numerous smaller drainages that lead directly or indirectly to the Pacific Ocean. These watersheds provide a variety of habitats including sandy beaches, estuaries, riparian channels and floodplains, grasslands, woodlands, coastal scrub, chaparral, and other habitats.

Facilities that are known to currently be within suitable habitat for the tidewater goby and its critical habitat, California red-legged frog and its critical habitat, least Bell's vireo, and the Southwestern willow flycatcher and its proposed critical habitat are shown in Figure 3 and listed in Appendix A. Additional facilities may be added or taken out of the O&M Program over time. The District will update these tables as necessary when new facilities are entered into the O&M Program.

Tidewater goby

Within Ventura County, tidewater gobies are known to occur in the Ventura River estuary, Santa Clara River Estuary, Ormond Lagoon, Calleguas Creek/Mugu Lagoon, and Sycamore Cover. O&M Program facilities that are located in habitat that is potentially suitable for tidewater gobies are listed in Appendix A, and summarized in Table 4. Habitat that is considered potentially suitable includes lower watershed areas that may be inundated and support vegetation during various times of year or as estuary morphology changes. Not all potentially suitable habitat is suitable at all times.

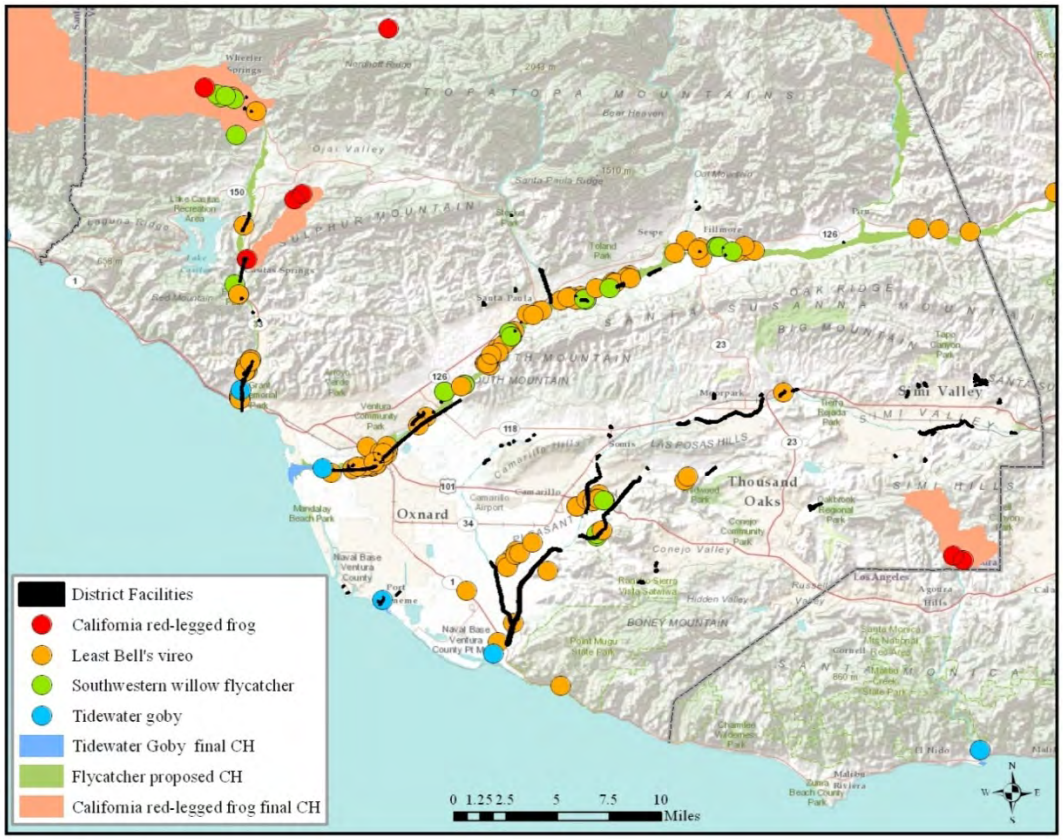


Figure 3. Location of O&M Program facilities and occurrences of California red-legged frogs, southwestern willow flycatchers, least bell's vireos, tidewater gobies, and their designated and proposed critical habitats within Ventura County.

Table 4. Total potential habitat, and facilities in potential habitat for tidewater gobies.

	Total potential habitat (Acres)	Facilities in potential habitat (Acres)
Ventura River	202	29
Santa Clara River	532	1
Ormond Lagoon	121	1
Calleguas Creek	677	213
TOTAL	1,532	244

Tidewater gobies were detected in the Ventura River in 1998 and 2005, which is currently presumed occupied. The available tidewater goby habitat in the Ventura River encompasses approximately 2 to 25 acres. The mouth of the Ventura River occurs at a public beach, owned by the City of Ventura. Upstream of the estuary, much of the land adjacent to the river is privately owned. The District maintains a levee from the Pacific Ocean to just north of Stanley Avenue as well as 14 side drains and short channels that convey stormwater into the river. The levee toe and side drains are in contact with surface water and potentially occupied tidewater goby habitat along about 10 to 20 percent of its length in any given year.

In the Santa Clara River, tidewater goby habitat encompasses approximately 75 to 125 acres. Tidewater gobies have been detected in the Santa Clara River estuary in 1998 and 2004. In 2010 the estuary was artificially breached and numerous tidewater gobies were flushed out of the lagoon and washed up dead on the shores surrounding the estuary. Similar breaching events have impacted this estuary in the past, and will likely occur again in the future. These unnatural events may be artificially depressing the tidewater goby population in this area; however there are locations within the estuary that likely provide refugia for tidewater gobies during these events and it is unlikely that extirpation has occurred.

In Ormond Lagoon, the available tidewater goby habitat encompasses approximately 0.7 to 2.5 acres and is hydrologically connected with the Oxnard Industrial Drain and J Street Drain. Tidewater gobies were first collected here in 1993 and then were observed again in 1998, 2004, 2005, 2006, 2008, and 2011. In 2005 and 2006, the District conducted 215 seine hauls in the J-Street drain, in order to relocate tidewater gobies out of their project area and captured and released a total of 4,437 individuals (Mulder and Swift 2007). Tidewater gobies were the most abundant species captured followed by mosquitofish (*Gsambusia* sp.), sailfin mollies (*Poecilia latipinna*) , and crayfish (*Orconectes* sp.) (Mulder and Swift 2007). In 2011 the Environmental Protection Agency detected abundant tidewater gobies in Ormond Lagoon during sampling for the remedial investigation of the Halaco Superfund Site, further confirming the species presence in this location.

Historically, Calleguas Creek and its tributaries were intermittent and flowed seasonally from its headwaters near the City of Simi Valley onto the Oxnard Plain. Due to development, Calleguas Creek is now primarily a perennial stream predominantly fed by treated wastewater flows, with secondary surface flows originating from groundwater, agricultural and urban runoff, and periodic stormwater flows. Revolon Slough is a major tributary of Calleguas Creek that flows into the creek near Highway 1 (Pacific Coast Highway), just prior to the creek's outflow into Mugu Lagoon.

Much of the available tidewater goby habitat in Calleguas Creek/Mugu Lagoon is owned by Naval Base Ventura County. Tidewater gobies were detected at the site in 1940 (Swift et al. 1989), but then were not detected during surveys in 2001 and 2002 by Lafferty and Swift (Service 2005). On July 20, 2011, tidewater gobies were found in Calleguas Creek above the Highway 1 Bridge (BonTerra Consulting 2011). The District performed surveys of the downstream portions of Calleguas Creek and Revolon Slough, in August and September 2011. The results of the survey indicated that tidewater gobies were present in the lower reaches of both channels, but suggested that during winter flows, individuals are expected to move a considerable distance upstream (Cardno Entrix 2011). The dispersal limit for tidewater gobies in both drainages is about 4 miles upstream of Highway 1 due to the dam on Calleguas Creek and the concrete channel in Revolon Slough that starts at Wood Road (Cardno Entrix 2011).

Recovery of the tidewater goby

All tidewater goby populations within Ventura County are within the Los Angeles/Ventura Recovery Unit. The tidewater goby populations and habitats within the Los Angeles/Ventura Recovery Unit are shown in Table 5. Of these, only the Ventura River, Santa Clara River, Ormond Lagoon, and Calleguas Creek/Mugu Lagoon are anticipated to be affected by O&M Program activities.

Table 5. Tidewater goby populations within the Los Angeles/Ventura Recovery Unit along with occupancy status at the time the recovery plan was developed (2005), and current status.

Sub-Unit	Status in the Recovery Plan	Current Status
Ventura River	Occupied	Occupied
Santa Clara River	Occupied	Occupied
Ormond Lagoon	Occupied	Occupied
Calleguas Creek/Malibu Lagoon	Extirpated	Occupied
Sycamore Canyon	No historical records	Occupied
Arroyo Sequit	No historical records	No historical records
Zuma Canyon	No historical records	No historical records
Malibu Creek	Occupied	Occupied
Topanga Creek	Occupied	Occupied
Santa Monica Artesian Springs	Extirpated	Extirpated
Ballona Creek	No historical records	No historical records

Tidewater goby critical habitat

Within Ventura County, tidewater goby designated critical habitat is located within the Ventura River (VEN-1), Santa Clara River (VEN-2), and Ormond Lagoon (VEN-3). Proposed tidewater goby critical habitat is located in these same areas and in one additional unit located in Big Sycamore Canyon (VEN-4). The unit boundaries for VEN-1 in the designated and proposed rules are identical. The unit boundaries for VEN-2 in the designated and proposed rules are similar, with the primary difference being less proposed critical habitat in an area that is currently a sand bar and does not contain PCEs. The unit boundaries for VEN-3 in the designated and proposed rules are significantly different with the designated rule covering

Ormond Lagoon, and the proposed rule covering Ormond Lagoon and the adjacent wetlands on property owned by The Nature Conservancy. No District facilities or O&M Program activities would occur within the additional area identified in the proposed critical habitat rule, therefore the nature and extent of impacts to VEN-3 is anticipated to be the same for the designated and proposed rules, despite the difference in unit size. Each of these critical habitat units is currently known to support all of the PCEs.

Table 6. Designated and proposed tidewater goby critical habitat within Ventura County.

Unit	Location	Designated CH (Acres)	Proposed CH (Acres)
VEN-1	Ventura River Estuary	50.3	50.3
VEN-2	Santa Clara River Estuary	360.5	322.1
VEN-3	Ormond Lagoon	44.4	121.0
VEN-4	Big Sycamore Canyon	N/A	0.69

The unit boundaries that are presented in the proposed revision of critical habitat are similar to the currently designated critical habitat units such that the effect of the O&M Program on the proposed critical habitat would be the same as currently designated critical habitat.

California red-legged frog

Within Ventura County, California red-legged frogs are known to occur in the Ventura River watershed and in Las Virgenes Creek near the City of Calabasas (Figure 1). In the Ventura River watershed, California red-legged frogs are known to occur in San Antonio Creek downstream of Soule Park to the Ventura River confluence, in Matilija Creek upstream of Matilija Dam, and in the lower Ventura River at Foster Park. Each of these areas typically supports perennial river flow, although the water levels can be low during summer months. Due to suitable habitat within the mainstem of the Ventura River, and lack of barriers to dispersal, it is feasible that California red-legged frogs could be located anywhere within the Ventura River mainstem. California red-legged frogs are also known to occur in Las Virgenes Creek, near the City of Calabasas on the border of Ventura County and Los Angeles County; however, no District facilities are located in the vicinity of these occurrences.

Currently 25 acres of O&M Program facilities are located within suitable habitat for California red-legged frogs (Appendix A). A majority of this area is maintained vegetation-free and may or may not be inundated depending on the time of year and river morphology. The entire Ventura River riparian corridor is potentially suitable habitat for California red-legged frogs, and totals approximately 1,500 acres from the estuary to Matilija Dam. The Ventura River likely acts as a movement corridor regardless of presence of vegetation. California red-legged frogs may use the riprap levees as sheltering habitat. Additionally up to 10 acres per year of mitigation/restoration may occur within suitable habitat for the California red-legged frog in Calleguas Creek.

<u>Recovery of the California red-legged frog</u>

Ventura County is split between Recovery Unit 7 (Northern Transverse Ranges and Tehachapi Mountains) and Recovery Unit 8 (Southern Transverse Ranges and Peninsular Ranges). Recovery Unit 7 includes portions of Santa Barbara, San Luis Obispo, Kern, Ventura, and Los Angeles Counties and includes the Ventura River and Santa Clara River tributaries. Recovery

Unit 8 includes portions of Ventura, Los Angeles, San Bernardino, Riverside, Orange, and San Diego counties, however the portions of Ventura County within this recovery unit do not support any District facilities that are the subject of this biological opinion, and Recovery Unit 8 will not be considered further in this consultation.

The Ventura River and tributaries to the Santa Clara River make up Core Area 26 of the California red-legged frog recovery plan. Conservation needs for this core area include restoring habitat, controlling non-native predators and non-native plants, and removing Matilija Dam.

California red-legged frog critical habitat

Within the Ventura River watershed, critical habitat for the California red-legged frog is designated above Matilija Dam to the headwaters of the Santa Ynez River, extending approximately 1.6 miles below the dam (STB-7), and in San Antonio Creek including approximately 0.4 miles of the Ventura River at the confluence of San Antonio Creek and the Ventura River (VEN-1) (Figure 3). There are currently 1.9 acres of District facilities within unit STB-7 and 0.4 acres of District facilities within VEN-1. The District facility located within STB-7 does not contain the PCEs for the California red-legged frog. The District facility within VEN-1 is generally thought to support PCEs for aquatic breeding habitat, aquatic non-breeding habitat, and/or dispersal habitat. Invasive vegetation including giant reed (*Arundo donax*), salt cedar, and tree of heaven (*Ailanthus altissima*) are pervasive within the Ventura River watershed, including within STB-7 and VEN-1. The O&M Program contains a mitigation/restoration component that may target the removal of these invasive vegetation species. We anticipate up to 10 acres of invasive vegetation removal within the Ventura River watershed each year. This vegetation removal could occur partially or fully within STB-7 or VEN-1.

Table 7. Designated critical habitat units that may be affected by O&M Program activities.

Unit	Location	Designated CH (Acres)
STB-7	Upper Santa Ynez River and Matilija Creek	145,121
VEN-1	San Antonio Creek	2,915

Least Bell's vireo

Within Ventura County, least Bell's vireos are known to occur within the Ventura River, Santa Clara River, and in various locations within the Calleguas Creek watershed (Figure 3). The suitable habitat within these watersheds is located within the floodplain but will change in extent and configuration when large storms scour vegetation, and regrowth occurs in the following seasons. Because of this dynamic, the entire primary floodplain area of each of these watersheds provides potentially suitable habitat and is quantified in table 8, along with the acres of District facilities that are within these suitable habitat areas in each watershed. Facilities currently included in the O&M Program that may affect least Bell's vireo are listed in Appendix A, Table 2. A summary of these facilities is shown in Table 8.

Table 8. Total potential habitat and facilities within potential habitat for least Bell's vireo.

	Total potential habitat (Acres)	Facilities in potential habitat (Acres)
Ventura River	1,500	35
Santa Clara River	6,700	46
Calleguas Creek	2,300	174
TOTAL	10,500	255

In the Ventura River watershed, least Bell's vireos have routinely been observed near the Main Street Bridge, just above the estuary. Here, District facilities include 3.5 miles of levee on the east bank of the river and 17 side drains. Least Bell's vireos may also occur in the upper mainstem of the Ventura River from the Santa Ana Road bridge upstream to Matilija Dam. Willow thicket habitat is patchy, but present in this area. The District maintains nearly 1-mile of levee on the west side of the river, as well as the tributary channels of Cozy Dell and Live Oak Creek Diversion. In the upper watershed, least Bell's vireos have been observed upstream of the dam in habitat that was recently cleared of giant reed (VCWPD 2010). The District conducts minor vegetation management and dam maintenance in this area.

In the Santa Clara River watershed least Bell's vireo habitat occurs in extensive patches within the floodplain of the mainstem and in tributaries such as Santa Paula Creek and Sespe Creek. Much of the river and creek bottom area is open and sandy. The system is highly dynamic and the mosaic of willow thickets and open sandy channels change location frequently. Approximately 5,000 acres of river bottom occur along the Santa Clara River over more than 30 miles from the river mouth to the Ventura County line. The District maintains approximately 9.1 miles of levees on the main stem and 23 tributary channels and side drains that enter the Santa Clara River or Sespe Creek as well as three stream gauges and hydrography sampling locations, and the Piru storage and stockpile site. Additionally, the Corps recently constructed approximately 3-miles of channel facility in lower Santa Paula Creek. The District has not yet taken this facility over for maintenance, but is expected to in the next few years. Facilities that are within habitat that could become suitable for Least Bell's vireos if not property maintained, total approximately 46 acres.

The Calleguas Creek watershed is an alternating mix of heavily disturbed reaches and more natural channels. Starting downstream near Mugu Lagoon, Calleguas Creek is a channelized facility with levees on both banks from Highway 1 to just upstream of University Drive bridge at Camarillo Regional Park, a distance of 5.8 miles. In this area the District maintains the vegetation in an early seral state by discing, leaving a vegetated strip along alternating sides of the low flow channel every other year. This allows for a slightly more developed vegetation band along the water for wildlife use. Revlon slough is similar to lower Calleguas Creek in that the District maintains the channel and levees with annual discing and leaving a vegetated strip. Adjacent land uses comprise primarily active agricultural fields, limiting the availability of adjacent upland foraging habitat. Much of these reaches are not suitable for least Bell's vireo nesting, but may serve as foraging habitat for traveling birds nesting upstream.

From Conejo Creek to Pleasant Valley Road (approximately 2 miles), Calleguas Creek is a natural channel and the District does not conduct maintenance in this reach. Upstream of

Pleasant Valley Road, the District maintains bank protection facilities and levees on one or both sides of Calleguas Creek for approximately 3.2 miles to the former Seminary Road Bridge. Willow habitat is sparse and likely not suitable for least Bell's vireo nesting in this stretch.

Upstream of Upland Road in Camarillo, Calleguas Creek changes names to Arroyo Las Posas. Another 4-miles upstream, District bank protection facilities begin near the Moorpark Waste Water Treatment Plant. Low quality habitat occurs within this reach upstream to Grimes Canyon. Patches of willows and cattails are allowed to remain in this reach, but the slopes and 15 feet at the toe are maintained vegetation free through herbicide application (glyphosate). At Hitch Boulevard, Arroyo Las Posas changes names again to Arroyo Simi. For the next 4-miles through Moorpark the channel is mostly rock riprap on both banks with an earthen bottom, maintained mostly vegetation free and provides little habitat value for least Bell's vireo. Several areas include only rock slopes on the north bank. Between Gabbert Canyon and Beltramo Road, approximately 4,700 linear feet of the Arroyo Simi south bank supports willow scrub habitat and perennial flows where least Bell's vireos could potentially nest and raise young. Through the Virginia Colony area the perennial creek is dense with willows and giant reed, and has largely unprotected banks. Least Bell's vireos are known to occur in this area. The only District facility here is the outlet of Canyon 2 near Collins Road. The only other suitable habitat for least Bell's vireo in the Arroyo Simi occurs in the Parker Ranch reach near Stearns Street and the Metrolink Station. The District is in negotiations with the landowner to take over maintenance of a 1-mile facility in this area.

The District also maintains several ancillary basins and washes that are maintained fully or partially vegetation free and may support marginal habitat for least-Bell's vireo within or adjacent to these facilities. The District does not conduct any maintenance along the Arroyo Santa Rosa from the confluence with Conejo Creek in Santa Rosa Park upstream to Blanchard Road Drain. Least Bell's vireos have been observed in Arroyo Santa Rosa near the Hill Canyon Road bridge.

At the time the draft recovery plan was issued (1998), the Santa Clara River watershed was thought to support 60 pairs of least Bell's vireos and the Ventura river was thought to support 1 to 2 pairs (Service 1998). As of 2001, the comprehensive estimate of least Bell's vireo territories in the Santa Clara river was 119 (Service 2006). In 2005 and 2006 avian surveys were conducted in the Santa Clara River watershed by Jim Greaves and Zev Labinger. These surveys detected 84 male least Bell's vireos in 2005 and 67 males in 2006 in the portion of the Santa Clara River that is within Ventura County (Labinger at al. 2011). The locations thought to support the largest areas of breeding habitat for least Bell's vireo are predominately in the lower Santa Clara River watershed, within Ventura County (Labinger et al. 2011). The largest known populations in the Santa Clara River are centered around the Freeman diversion, Fillmore fish hatchery, and Hedrick Ranch.

Recovery of the Least Bell's vireo

The draft recovery plan identified the O&M Program area to be within the historical and current range of the least Bell's vireo. The recovery plan identified 14 vireo "population/metapopulation units," which must show stable or increasing populations in order to downlist the least Bell's vireo to threatened status. The Santa Clara River is one of these 14 population/metapopulation

units essential to the recovery of the species. The proximity of the Ventura River and Calleguas Creek watersheds to the Santa Clara River makes these habitats a valuable resource for achieving a stable or increasing population in the Santa Clara River unit. If habitat within the Ventura River and Calleguas Creek watersheds becomes increasingly utilized by least Bell's vireos, this area could provide a source population for birds that may ultimately select territories in the Santa Clara River watershed.

Southwestern willow flycatcher

Within Ventura County, southwestern willow flycatchers are known to occur within the Ventura River, Santa Clara River, and in various locations within the Calleguas Creek watershed (Figure 3). The suitable habitat within these watersheds is located within the floodplain but will change in extent and configuration when large storms scour vegetation, and regrowth occurs in the following seasons. Because of this dynamic, the entire primary floodplain area of each of these watersheds provides potentially suitable habitat and is quantified in table 9, along with the acres of District facilities that are within these suitable habitat areas in each watershed. Facilities currently included in the O&M Program that may affect southwestern willow flycatchers are listed in Appendix A, Table 4.

Table 9. Total potential habitat and facilities within potential habitat for southwestern willow flycatcher.

	Total potential habitat (Acres)	Facilities in potential habitat (Acres)
Ventura River	1,500	32
Santa Clara River	6,700	45
Calleguas Creek	2,300	84
TOTAL	10,500	161

In the Ventura River watershed, the habitat conditions for southwestern willow flycatcher match those of the Least Bell's vireo, described in the section above. Southwestern willow flycatchers have been identified in the Ventura River, approximately 1 mile below the confluence with San Antonio Creek and above Matilija Dam. Nesting has not been documented in the Ventura River below Matilija Dam, where various District facilities are located, however, there is suitable habitat present and as habitat conditions continue to improve in local watersheds, the probability of the Ventura River supporting nesting activity in the future is high.

In the Santa Clara River watershed, the habitat conditions for southwestern willow flycatcher are similar to those of the Least Bell's vireo, described in the section above; however, southwestern willow flycatchers tend to prefer a more complex riparian structure that includes cottonwoods, willows, and a herbaceous understory. Southwestern willow flycatchers are known to occur in extensive thickets of willow scrub at the California Department of Fish and Game hatchery east of the City of Fillmore, near the confluence with Balcom Canyon, and just west of Santa Paula near South Mountain Road. The Santa Clara River system is highly dynamic, and the mosaic of willow thickets and open sandy channels change frequently. In any given year or series of years, a low flow channel can persist during the spring potentially supporting the development of riparian habitat suitable for flycatcher nesting, so all district facilities in the floodplain could potentially be located within or adjacent to suitable habitat for the flycatcher.

In the Calleguas Creek watershed, the creeks are generally narrow, which is thought to be less suitable for this species' riparian foraging and nesting requirements, and therefore the amount of suitable habitat for the southwestern willow flycatcher is likely less than described for the least Bell's vireo in the section above. Southwestern willow flycatchers have been observed in Conejo Creek and in Hill Canyon near the wastewater treatment plants, but not elsewhere in the watershed.

A majority of southwestern willow flycatcher observations in Ventura County were in late May and early June when willow flycatchers of several races are migrating in concentrated numbers. These birds are likely migrating through the area and are using habitat in the Ventura River, Santa Clara River and Calleguas Creek watersheds as stop-over habitat for resting and foraging. In 2006 singing birds were observed at United Water property near Highway 118, Hedrick Ranch Nature Area, and west of the Fillmore Fish Hatchery (Labinger at al. 2011) indicating that breeding attempts may be likely in these areas.

Recovery of the Southwestern Willow Flycatcher

The action area is located within the Coastal California Recovery Unit identified in the final recovery plan. As described in the 2002 recovery plan, this recovery unit stretches along the coast of southern California from just north of Point Conception south to the Mexico border. As of 2002 there were 186 known southwestern willow flycatcher territories in this recovery unit, representing 19 percent of the rangewide total, distributed along 15 relatively small watersheds, mostly in the southern third of the recovery unit. All known territories in this recovery unit were found in native or native-dominated habitats. The recovery unit is further divided into management units. The Santa Clara River is designated as a management unit within the Central California Recovery Unit. The metapopulation in his management unit has been identified for increased population stability and enhancement. The minimum number of territories targeted for this management unit before the southwestern willow flycatcher can be reclassified to threatened is 25.

Southwestern willow flycatcher territories have been detected in small numbers in the Santa Clara Management Unit, ranging from 0 to 13 territories annually between 1995 and 2001 (Service 2002b). In 2007 there were 8 territories estimated to be occupied throughout the Santa Clara Management Unit (Durst et al. 2008). In 2005 and 2006 Labinger and Greaves detected 7 southwestern willow flycatchers in the Ventura County portion of the Santa Clara River (Labinger et al. 2011).

Southwestern willow flycatcher critical habitat

Within Ventura County, designated critical habitat is located in the Santa Clara Management Unit, and includes the Ventura River, Santa Clara River and Piru Creek. The proposed critical habitat units are summarized in Table 6 and are shown in Figure 3.

Table 10. Proposed southwestern willow flycatcher critical habitat units within Ventura County and VCWPD facilities within proposed critical habitat (calculated based on GIS overlays of VCWPD facilities and critical habitat boundaries).

Unit	Location	Proposed CH (Acres)	Facilities in CH (Acres)
Ventura River	Ventura River from the ocean to Matilija Dam	1,445	29
Santa Clara River	Santa Clara River from the ocean to the City of Santa Clarita, including Castaic Creek.	9,505	31
Piru Creek	Piru Creek from the confluence of the Santa Clara River to just past the Ventura County Line	1,862	0

Southwestern willow flycatcher habitat within the action area is characterized by riparian vegetation dominated by native willows, cottonwoods, sycamores, and invasive giant reed and salt cedar. The extent and quality of southwestern willow flycatcher habitat within these critical habitat units naturally fluctuates through time as large storm events scour vegetation and subsequent low flow seasons allow vegetation to regrow. Channel morphology in these units also changes drastically with large storm events such that vegetation may not regrow in the same locations after storm events, thereby causing the locations of territories to shift as conditions change.

Approximately 60 acres of facilities are currently within proposed critical habitat for the southwestern willow flycatcher. Much of the area within existing facilities is maintained as bare earth or hardscape and does not support the primary constituent elements of southwestern willow flycatcher critical habitat. For example, the District currently maintains a 15-foot vegetation-free area at the foot of levees. These areas may fall within proposed critical habitat boundaries but do not currently support the primary constituent elements. Other areas subject to O&M Program activities including mitigation/restoration projects support ideal habitat for the species.

EFFECTS OF THE ACTION

Tidewater goby

Tidewater gobies and their eggs located adjacent to District facilities may be injured or killed during maintenance activities that occur within standing water within lower portions of the Ventura River, Santa Clara River, Ormond Lagoon and Calleguas Creek. A variety of O&M Program activities will adversely affect tidewater gobies in these areas including routine maintenance activities, facility repair; BEMP activities; and mitigation/restoration activities. Current facilities subject to the O&M Program activities that would adversely affect tidewater gobies are listed in Appendix A, Table 1. The Service anticipates that additional facilities may be added to the O&M Program over time, and that the effects to tidewater gobies from these facilities would be equivalent to the effects described below.

Tidewater gobies may be directly injured or killed by heavy equipment entering occupied habitat for the removal of sediment, vegetation, or other routine maintenance, repair, or mitigation/restoration activities. The District has proposed to work within suitable habitat for tidewater gobies when conditions are dry and will not support the species to the maximum extent possible thereby minimizing potential effects to the species. In the Ventura River, some habitat near the levees and drains may never go dry and therefore maintenance and repair activities

would need to be conducted within occupied habitat. Additionally, mitigation/restoration activities may occur in the lower Ventura River where tidewater gobies may occur; however project activities are anticipated to occur outside of wetted areas, and the BMPs and minimization measures are anticipated to avoid injury or killing of tidewater gobies during mitigation/restoration activities.

In the Santa Clara River, maintenance within suitable habitat is restricted to one stream gauge and one outlet and may require work when tidewater gobies are present. In Ormond Lagoon, routine maintenance is only anticipated to occur when the channel is dry thereby precluding adverse effects to tidewater gobies from routine maintenance activities. However, repair activities at Facilities within Ormond Lagoon may require work when water is present.

In Calleguas Creek, vegetation mowing, discing, sediment removal and trash removal occurs when flow is confined to a small channel. Tidewater gobies have been documented up to 2,800 feet above Highway 1 in Calleguas Creek, and this distance will likely fluctuate through time as storm conditions alter passage conditions for tidewater gobies. Tidewater gobies could be crushed whenever heavy equipment traverses the low flow channel. The total area of potential tidewater goby habitat within Calleguas Creek is large (213 acres) however, because O&M Program activities would only occur during low flow conditions, the amount of habitat potentially affected in any given year is anticipated to be much lower.

The potential exists for the O&M Program to conduct repair or other activities that would require relocating tidewater gobies out of the project area. These activities are estimated to affect no more than 10 percent of facilities within potential tidewater goby habitat in the Ventura River, Santa Clara River, and Ormond Lagoon, and 1 percent of facilities within suitable habitat in Calleguas Creek in any given year (Table 11). These effects are anticipated to occur within the footprint of existing facilities, and therefore this 10 percent and 1 percent per year does not represent a compounding effect to habitat; rather, these effects would be confined to a specific footprint where optimal habitat is not expected to generally occur.

Table 11. Acreage of facilities within potential habitat for tidewater gobies and the amount of habitat anticipated to require tidewater goby relocation in any given year.

	Facilities in potential habitat (Acres)	Habitat requiring goby capture/relocation (Acres)
Ventura River	29	3
Santa Clara River	1	0.1
Ormond Lagoon	1	0.1
Calleguas Creek	213[1]	2[2]
TOTAL	244	4.2

Dewatering activities may result in the death of any tidewater gobies in the dewatered area due to stranding resulting in desiccation, suffocation, or opportunistic predation. To minimize stranding the District has proposed to relocate all tidewater gobies out of areas to be dewatered. Tidewater

[1] Includes entire channel area of Revolon slough and Calleguas Creek to the first dispersal barrier approximately 4 miles upstream in both drainages. Under low flow conditions far less area provides suitable habitat.
[2] Represents 1% of facilities in potential tidewater goby habitat.

gobies may be injured or killed during relocation activities, from mishandling, physiological stress, or from capture and relocation equipment. To minimize these potential effects the District proposes to use personnel with experience relocating tidewater gobies and follow guidelines in the Service's tidewater goby survey protocol. However, the potential exists that some tidewater gobies may not be located or may still be killed or injured during the capture and relocation procedures. Furthermore, tidewater gobies may be breeding during the proposed project, and any eggs located within the dewatering area would not be detectable. These eggs may be injured or killed during the proposed project.

Sedimentation that would occur during O&M activities may result in tidewater goby injury, death, and lowered breeding success. Sediment may affect tidewater gobies by impairing the efficiency of their gill filaments and exposing them to higher salinities and/or predation as they flee downstream. Direct effects of sedimentation include mortality, reduced physiological function, and burrow smothering. Indirect effects of sedimentation include potential alteration to the food web which could create cascading effects to higher trophic levels. A reduction in phytoplankton can be attributed to increased turbidity, which can therefore reduce zooplankton, in turn reducing benthic macroinvertebrates, and thus reducing prey available to tidewater gobies (Henley et al. 2000). These effects would be minimized by the District's proposed implementation of standard BMPs for the project, which includes measures to minimize erosion and sedimentation.

Construction equipment and materials that have the potential to contribute pollutants to storm water discharges include vehicle fluids (e.g., oil, grease, petroleum, coolants, etc.), raw landscaping materials and wastes (e.g., plant materials, etc.), and general litter. These materials may injure or kill tidewater gobies. The release of these materials into tidewater goby habitats would be minimized by the implementation of the general BMPs, which includes measures to minimize or avoid the release of contaminants into tidewater goby habitat.

Maintenance activities would include weed control. Herbicides may be used if other non-chemical weed control methods have been exhausted. The specific herbicide that would be used in all aquatic habitat areas is glyphosate with Agri-dex or similar aquatically-approved surfactant. Tidewater gobies can be exposed to herbicides in aquatic habitats through direct overspray of wetlands, drift from treated areas, or contaminated runoff from treated areas.

Glyphosate is a systemic herbicide that will kill broadleaf and grass species by inhibiting the production of aromatic amino acids in plants and some microorganisms that are necessary to build proteins (Devine et al. 1993). Because many animals lack the amino acid synthesis pathway that glyphosate disrupts, it is considered to have low potential to cause toxicity in animals (Devine et al. 1993). The half-life of glyphosate in pond water ranges between 12 days and 10 weeks depending on environmental conditions (Extoxnet 1996), however, the half-life in brackish or saline water may be different. No information is available regarding the toxicity of glyphosate products specifically to tidewater goby. Toxicity studies on bluegill sunfish (*Lepomis macrochirus*) and rainbow trout (*Oncorhynchus mykiss*) indicate that Aquamaster herbicide is

practically non-toxic[3] to these species (Monsanto 2005). Studies compiled by the Pesticide Action Network indicate that glyphosate ranges from not acutely toxic to moderately toxic depending on the species of fish[4] (Kegley et al., 2010). Because the toxicity of glyphosate-containing products can vary significantly between species, a conservative assumption would be that glyphosate-containing products are moderately toxic to tidewater gobies. Because tidewater gobies would only be exposed to glyphosate through overspray, the actual glyphosate concentration that tidewater gobies would be exposed to is anticipated to be much less than the application concentration, due to dilution by estuary/lagoon waters. This diluted concentration is anticipated to not result in toxic effects to tidewater gobies.

Most glyphosate products are formulated to contain surfactants that allow the active ingredients to spread over and penetrate the plant cuticles. Surfactants can be the most toxic portion of a pesticide product. The glyphosate used in aquatic areas will be formulated without a surfactant. When a surfactant is absolutely necessary the product Agri-dex by Helena Chemicals, will be used (BMP-9), and has been approved for aquatic applications due to its low toxicity.

Effects of the BEMP program on tidewater goby

When the criteria for initiating activities under the BEMP program are met, the sand berm between Ormond Lagoon and the ocean would be groomed to decrease the beach elevation such that Ormond Lagoon would be allowed to breach at a lower elevation than it would if the grooming did not occur. The BEMP program is designed such that the beach grooming itself would not cause a breach, rather, the BEMP program will lower the elevation of the berm such that a subsequent rain event would raise the water level of Ormond Lagoon and allow a natural breach to occur. Natural breaches that occur due to storm events have been demonstrated to have very little adverse effects on tidewater goby populations while artificial breaches can substantially adversely affect the species.

During natural breach events, a limited number of tidewater gobies may be washed out to the ocean, while the majority of fish are able to persist within the estuary/lagoon. In a study by Lafferty et al. (1999), tidewater goby populations throughout Santa Barbara and Ventura Counties were surveyed before and after large flood events. Results showed that all of the populations that were surveyed persisted through the flood events, and that the density of tidewater gobies prior to and after the storms were not significantly different (Lafferty et al. 1999). Tidewater gobies can survive in ocean water for a limited amount of time and may be able to disperse to another estuary/lagoon or back into the same feature they came from. This is the mechanism that is thought to have sustained tidewater goby metapopulations throughout their range and underscores the importance of local populations, not individual fish, as the important unit for conservation (Lafferty et al. 1999).

This is in contrast to unnatural breach events, where tidewater gobies and other estuarine fish are not queued by precipitation events to find refuge, and large numbers of individuals can become stranded on the estuary shores or be killed by a quick transition to high saline water as they are

[3] The concentration that causes the mortality of 50 percent of exposed individuals was greater than 1,000 milligram/liter (mg/L) for both species.

[4] The concentrations that caused the mortality of 50 percent of exposed individuals was between 1 mg/L and greater than 1,000 mg/L for several species of fish.

washed into the ocean. Tidewater gobies are thought to be weak swimmers and are intolerant of currents, preferring slack-water habitats (Swenson 1995). These habitats may become abruptly dewatered during un-natural breaching events that do not occur with a simultaneous influx of water as would happen during a storm, and can leave tidewater gobies stranded on the inner shores of the lagoon. Furthermore, tidewater gobies have wide tolerances of salinity (0 – 41 parts per thousand) (Sewnson 1995), but require some time to acclimate and may not be able to survive a quick transition from low saline lagoon waters to the full salinity of the ocean that would occur during an unnatural breach event (C. Swift pers comm 2010).

In September 2010, the Santa Clara River estuary was artificially breached by an unidentified party, and the flats of the lagoon and the outer ocean beach to the north were "littered with dead small fish, mostly flathead minnows, green sunfish, and tidewater gobies" (C. Swift pers comm 2010). The tidewater goby mortality was attributed primarily to stranding, while a minority of the fish were potentially killed because they were exposed too rapidly to full saline water (C. Swift pers comm 2010).

The BEMP program is not anticipated to cause a breach without a storm event and is therefore not anticipated to have the adverse effects to tidewater gobies that an artificial breaching event would. The BEMP program has the potential to increase the number of naturally-occurring breaches that occur, however we do not anticipate this to substantially adversely affect tidewater gobies due to their documented persistence of tidewater gobies in lagoons following storm events and natural breaches.

Recovery of the tidewater goby

The goal of the tidewater goby recovery plan is to conserve and recover the tidewater goby throughout its range by managing threats and perpetuating viable metapopulations within each recovery unit while maintaining morphological and genetic adaptations to regional and local environmental conditions. We do not expect the O&M Program to substantially affect the conservation of the tidewater goby within the Los Angeles/Ventura Recovery Unit, in terms of the recovery strategy described in the recovery plan because:

1. The tidewater goby recovery plan emphasizes the importance of the conservation of population units rather than individual fish, and the effects of the O&M Program are not expected to cause population-level declines in the Ventura River, Santa Clara River, Ormond Lagoon or Calleguas Creek; and

2. The O&M Program would not adversely affect the metapopulation dynamics between each individual population in the Los Angeles/Ventura Recovery Unit.

In summary, the proposed action could adversely affect tidewater goby adults, juveniles, and/or eggs that may occur within the Ventura River, Santa Clara River, Ormond Lagoon, and Calleguas Creek through capture and relocation, stranding, crushing, increased sedimentation, exposure to glyphosate, and implementation of the BEMP. These effects will be minimized by the District's implementation of the minimization measures described above, and are not anticipated to substantially affect the survival of the species in the Ventura River, Santa Clara River, Ormond Lagoon or Calleguas Creek. These routine maintenance, repair, and

mitigation/restoration projects are not anticipated to compromise the recovery of the tidewater goby.

Tidewater goby critical habitat

Critical habitat for the tidewater goby may be adversely affected by the routine maintenance, repair, and mitigation/restoration components of the O&M Program through the removal of vegetation and sediment that contribute to primary constituent elements. Vegetation removal may be temporary or permanent depending on the specific project activity. For example, vegetation within 15 feet of levees will be permanently removed, whereas invasive vegetation in mitigation/restoration areas would be temporarily removed to allow native vegetation to grow back. Most of the O&M Program Facilities are maintained vegetation-free and do not support this component of the PCEs for tidewater gobies. Infrequently, areas that are intended to be maintained vegetation-free are not maintained and vegetation grows back to support the PCEs once again. In these cases, permanent vegetation removal is required, but the footprint of such removal will always be within that of existing District facilities. For the purposes of this consultation, we will assume that all District facilities are intended to be maintained vegetation free, but that 10 percent per year have mature vegetation that regrew and requires removal or require some kind of repair that may affect critical habitat. Because the District has proposed to avoid activities within Ormond Lagoon when water is present, we do not anticipate adverse effects to unit VEN-3. There are no district facilities within VEN-2.

The removal of vegetation associated with the construction of new District facilities is not covered under this biological opinion. Such new facilities would be permitted individually and then added to the O&M Program once initial vegetation removal activities have occurred. Therefore, the addition of new facilities to the O&M Program will not generate additional adverse effects of critical habitat that have not been adequately analyzed in other consultations.

O&M Program activities also include mitigation/restoration activities such as invasive plant removal. Mitigation/restoration activities may occur within VEN-1 and VEN-2; however, the vegetation species generally targeted for removal (e.g. giant reed, tamarisk, tree of heaven, etc.) is not typically characteristic of tidewater goby habitat. Mitigation/restoration activities may occur adjacent to habitat that contains PCEs, but is not anticipated to occur within habitat that supports the PCEs. Mitigation/restoration activities are not anticipated to occur within VEN-3 or VEN-4.

The BEMP program would affect critical habitat unit VEN-3 (Ormond Lagoon), and has the potential to increase the number of breaches that occur. The frequency at which the BEMP would be initiated is difficult to determine; however, based on the program criteria, and frequency of implementation in the past, we anticipate that the BEMP would be initiated approximately one time per year. Because the habitat in VEN-3 has developed along with a flood/breach regime, and because the breaches under the program would still be initiated by natural conditions (freshwater input from storm runoff) the potential additional breaches are anticipated to have an insignificant effect on the PCEs for tidewater goby critical habitat.

Table 12. Maximum yearly tidewater goby critical habitat anticipated to be affected by O&M Program activities.

Unit	Designated CH (Acres)	Facilities within Designated CH (Acres)	CH Affected by routine maintenance and repair (Acres)	CH Affected by mitigation/ restoration (Acres)
VEN-1	50.3	1.7	0.2	0
VEN-2	360.5	0	0	0
VEN-3	44.4	0.78	0	0
VEN-4	N/A	0	0	0

In summary, as described in the Environmental Baseline section above, the critical habitat units in the designated and proposed critical habitat rules are similar such that we anticipate that effects to designated and proposed critical habitat are equivalent. Routine maintenance and repair activities may adversely affect up to 0.2 acres of tidewater goby critical habitat in unit VEN-1 per year, however these effects are small in comparison to the total habitat available (0.4 percent) and are not anticipated to compromise the function of VEN-1.

California red-legged frog

The only California red-legged frog populations that are anticipated to be affected by the O&M Program are within the Ventura River watershed. District facilities within the Ventura River contain habitat for California red-legged frog breeding, feeding, and sheltering. California red-legged frogs may be injured or killed during the implementation of O&M Program activities. The Service anticipates that additional facilities within the Ventura River watershed may be added to the O&M Program over time, and that the effects to California red-legged frogs from these facilities will be the equivalent to the effects described below.

The Ventura River currently contains approximately 25 acres of facilities within suitable habitat for California red-legged frogs. Within any given year, up to 10 percent of these facilities (2.5 acres) may require maintenance or repair activities that involve activities that could injure or kill California red-legged frogs. Additionally, up to 10 acres of mitigation/restoration activities per year may occur within suitable habitat for California red-legged frogs; however, the amount of suitable habitat within any given 10-acre restoration project site is not anticipated to be entirely suitable for California red-legged frogs. Based on the records of California red-legged frogs in the Ventura River, we anticipate approximately 10 California red-legged frogs may be present per acre of suitable habitat; however, this number may be larger or smaller depending on site specific conditions. Based on this estimate of California red-legged population density we expect that up to 25 California red-legged frogs may be affected by maintenance and repair activities each year. We also estimate that up to 50 California red-legged frogs may be affected by mitigation/restoration activities each year.

California red-legged frogs may be injured or killed by inadvertent trampling by workers from foot traffic and operation of equipment during the removal of sediment, vegetation, or other routine maintenance, repair, or mitigation/restoration activities. This effect would be minimized by the District's proposal to conduct pre-construction surveys and to have a biologist present during vegetation clearing activities in order to identify California red-legged frogs in the project area. Any California red-legged frogs found and determined by the biologist to be at risk would be relocated to a nearby suitable habitat. It is possible that not all California red-legged frogs

within the proposed disturbance area would be detected during these surveys, and may be injured or killed despite survey efforts intended to detect their presence.

California red-legged frogs could be injured or killed if they are improperly handled or contained during capture and relocation efforts. Larval amphibians have been shown to be sensitive to latex, nitrile, and vinyl, with latex and nitrile causing up to 100 percent tadpole mortality following only 30 to 90 seconds of direct contact (Cashins et al. 2008). Effects of these materials on adult frogs are less well documented. Rinsed vinyl gloves appear to be the least toxic alternative, when the use of gloves is necessary (Cashins et al. 2008). If gloves containing these products are worn during capture and relocation activities, there is the potential that California red-legged frogs could be injured or killed. Additionally, adverse effects due to handling and relocation could be increased or prolonged if a suitable relocation area is not identified prior to initiating surveys. These threats should be minimized by the District's proposed use of biologists with experience in the capture and relocation of these species.

Relocated California red-legged frogs may be at risk of injury or death through predation or dehydration during an attempt to return to a work area from which they had been moved. This risk may increase with the distance of the relocation site from the work area. However, relocating individuals will minimize the direct risk of injury or mortality as a result of construction activities.

Handling California red-legged frogs, or introducing equipment into their breeding ponds, can also result in the spread of chytrid fungus (*Batrachochytrium dendrobatidis*), a pathogen linked to declines in amphibians. Chytrid fungus is a water-borne fungus that can be spread through direct contact between aquatic animals and by a spore that can move short distances through the water. The fungus can decimate amphibian populations, causing fungal dermatitis, which usually results in death in 1 to 2 weeks. Infected animals may spread the fungal spores to other ponds and streams before they die. Once a pond has become infected with chytrid fungus, the fungus stays in the water for an undetermined amount of time. If California red-legged frogs that are relocated from the project are infected with chytrid fungus, they may spread the fungal spores to uninfected individuals in the relocation areas. If they are not infected, they may become infected through exposure to infected amphibians inhabiting the relocation area.

California red-legged frogs are known to be more surface active (e.g., foraging, dispersing) at night. If trenches or other excavations are left open overnight, California red-legged frogs may fall in and become trapped. Trapped individuals may be more vulnerable to predators *(*e.g., raccoons (*Procyon lotor*)) or they may exhaust themselves trying to get out. If they remain in the trench until daylight, they may desiccate in the sun, be exposed to daytime predators (e.g. great blue herons (*Ardea herodias*)), or be found in harm's way when trench installation activities resume.

Glyphosate is the active ingredient in a variety of herbicides including Roundup, Rodeo, Aquamaster, Buccaneer, Glyfos, Honcho, Touchdown, Vision, Duramax, Rattler, and others. Glyphosate is a systemic herbicide that will kill broadleaf and grass species by inhibiting the production of aromatic amino acids in plants and some microorganisms that are necessary to build proteins (Devine et al. 1993). Because many animals lack the amino acid synthesis

pathway that glyphosate disrupts, it is considered to have low potential to cause toxicity in animals (Devine et al. 1993). Most glyphosate products are formulated to contain surfactants that allow the active ingredients to spread over and penetrate the plant cuticles. Surfactants can be the most toxic portion of a pesticide product. The surfactant associated with many glyphosate products is a polyethoxylated tallowamine (POEA) surfactant.

California red-legged frog eggs, tadpoles, juveniles and adults can be exposed to glyphosate products and POEA surfactants in aquatic habitats through direct overspray of wetlands, drift from treated areas, or contaminated runoff from treated areas. The half-life of glyphosate in pond water ranges between 12 days and 10 weeks (Extoxnet 1996). Additionally, juvenile and adult California red-legged frogs can be exposed in terrestrial habitats that have been treated. Glyphosate and POEA readily sorbs to soil particles and can be degraded by microbes in 7 to 70 days depending on soil conditions (Giesy et al. 2000).

No information is available regarding the toxicity of glyphosate products specifically to California red-legged frogs. Studies exploring the lethal and sublethal effects of glyphosate products on other amphibians, including ranids, are available but are largely focused on aquatic stages of the species and formulations of glyphosate that include surfactants. Roundup Original Max, a glyphosate product with POEA surfactant, was demonstrated to be moderately to highly toxic to nine species of frog and toad tadpoles including five Ranidae species: wood frog (*Rana sylvatica),* leopard frog (*Rana pipiens*), Cascades frog (*Rana cascadae*), green frog (*Rana clamitans*), and American bullfrog (*Rana catesbeiana*) (Relyea and Jones 2009). The mortality of tadpoles is hypothesized to be caused by the lysis (i.e. destruction) of gill cells from exposure to surfactants (Lajmanovich et al. 2003, Edington et al. 2004) indicating that the life stage during which frogs and toads have gills may be particularly vulnerable. Glyphosate products containing POEA surfactants have also been shown to have sub-lethal effects to amphibians including decreased size, increased time to metamorphosis, tail malformations, and gonadal abnormalities (Govindarajulu 2008, Howe et al. 2004).

Several studies suggest that the toxicity of glyphosate products is linked with the surfactant, and not the glyphosate. Howe et al. (2004) compared the toxicity of glyphosate alone, to glyphosate with POEA surfactant, and POEA alone, on green frogs. Results indicated that the toxicity of glyphosate with POEA surfactant was similar to the POEA surfactant alone, which was much greater than glyphosate alone, indicating that the POEA was responsible for the toxic effects. In a comprehensive review of studies involving the effects of glyphosate on amphibians Govindarajulu (2008) concluded that the toxic effect of glyphosate products containing POEA are due to the POEA rather than the active glyphosate ingredient.

These studies indicate that glyphosate products formulated with POEA surfactants will likely kill or injure California red-legged frogs in aquatic habitats, with tadpoles being particularly vulnerable. Because glyphosate and POEA readily bind to soil and sediments, these chemicals may be less available to California red-legged frogs on land, however, research is needed to determine toxicity mechanisms and thresholds from terrestrial exposure. Effects to California red-legged frogs from the use of glyphosate products will be minimized by the District's proposal to use a glyphosate formulation that does not contain a surfactant. When a surfactant is absolutely necessary, the District will use Agri-dex, produced by Helena Chemicals.

Recovery of the California red-legged frog

As stated above in the Status of the Species Section, the recovery status of the California red-legged frog is considered within the scale of the Recovery Unit as opposed to the overall range. Because of the varied status of this species and differing levels of threats throughout its range, recovery strategies differ by recovery unit to best meet the goal of delisting the species. The goal of the recovery plan is to protect the long-term viability of all extant populations within each recovery unit. Overall, the strategy for the recovery of the California red-legged frog involves: (1) protecting existing populations by reducing threats; (2) restoring and creating habitat that would be protected and managed in perpetuity; (3) surveying and monitoring populations and conducting research on the biology and threats to the species; and (4) reestablishing populations of the species within its historical range (Service 2002a).

We do not expect the proposed project to substantially affect the conservation of the California red-legged frog within the Northern Transverse Ranges Recovery Unit, in terms of the recovery strategy described in the recovery plan (Service 2002a) because:

1. The proposed project would not increase the threats currently impacting the California red-legged frog in the Northern Transverse Ranges Recovery Unit;

2. The proposed project would not preclude our ability to survey and monitor populations of California red-legged frog or conduct research on the biology and threats to the species;
3. The proposed project would not preclude our ability to reestablish populations of the California red-legged frog within its historical range; and

4. Mitigation/restoration projects conducted in the Ventura River by the O&M Program may restore habitat and remove non-native plants, which are activities listed as "conservation needs" in the recovery plan.

In summary, projects within the O&M Program could adversely affect California red-legged frogs by capture and relocation, trampling by workers, crushing by equipment and entrapment in excavations. These effects will be minimized by the District's implementation of the minimization measures described above. These routine maintenance, repair, and mitigation/restoration projects are not anticipated to compromise the recovery of California red-legged frogs. We anticipate that up to 25 California red-legged frogs may be affected by maintenance and repair activities, and up to 50 California red-legged frogs could be affected by mitigation each year. We anticipate that only a small portion of these individuals affected would be injured or killed. We do not expect the loss of these few California red-legged frog adults, subadults, egg masses, or tadpoles to compromise the ability of the species to survive and recover.

California red-legged frog critical habitat

The District facilities that are located within designated critical habitat for the California red-legged frog currently total approximately 1.9 acres in STB-7 and 0.4 acres in VEN-1. The facility within STB-7 comprises the Matilija Dam and gauge (hardscape) and only supports PCEs peripheral to the hardscape. Within VEN-1, the facility within critical habitat is a stream gauge that would require vegetation trimming as the primary maintenance activity and may

affect up to 0.4 acres per year. In addition to routine maintenance and repair activities, up to 10 acres of mitigation/restoration activities may occur within the Ventura River watershed each year. This mitigation may occur entirely, partially, or not at all within either STB-7 or VEN-1.

California red-legged frog critical habitat may be adversely affected through vegetation trimming during routine maintenance activities within VEN-1 and STB-7. Vegetation surrounding the stream gauge in VEN-1 is maintained at a low height, trimming activities are conducted to bring the vegetation back to that low height. Trimming may adversely affect aquatic breeding habitat, non-aquatic breeding habitat and dispersal habitat depending on river morphology at the time of maintenance. Critical habitat in VEN-1 and STB-7 may also be affected by mitigation/ restoration activities within STB-7 and VEN-1. Vegetation removal would target invasive species such as giant reed, tamarisk and tree of heaven. These activities may temporarily affect aquatic breeding habitat, non-aquatic breeding habitat and dispersal habitat, depending on the location and extent of the mitigation/restoration activities, however, these effects would be temporary in nature and the long-term effect on critical habitat would ultimately be beneficial.

Table 13. Summary of potential annual effects to critical habitat for the California red-legged frog.

Unit	Designated CH (Acres)	Facilities in CH (Acres)	CH Affected by routine maintenance and repair (Acres)	CH Affected by mitigation/ restoration (Acres)
STB-7	145,121	1.9	1.9	10
VEN-1	2,915	0.4	0.4	10

In summary, the amount of critical habitat that would be affected by the O&M Program is small in comparison to the amount of critical habitat available in STB-7 and VEN-1, and is not anticipated to substantially affect the recovery function of these units. The mitigation/restoration projects may ultimately have a beneficial effect on California red-legged frog critical habitat after native vegetation has regrown and matured such that these areas support the PCEs.

Least Bell's vireo and southwestern willow flycatcher

Various District facilities within the Ventura River, Santa Clara River, and Calleguas Creek watersheds are within or adjacent to habitat that supports least Bell's vireo and southwestern willow flycatcher breeding, foraging, and sheltering. Least Bell's vireos and southwestern willow flycatchers may be injured, or killed during the implementation of O&M Program activities.

Approximately 255 acres of District Facilities occur in areas that have the potential to support habitat for least Bell's vireo, and 161 acres of District facilities are in areas that have the potential to support habitat for southwestern willow flycatchers (Tables 8 and 9). These facilities were predominantly designed to be maintained vegetation-free as described in the Environmental Baseline section above; however, if frequent vegetation control does not occur, suitable habitat may become established in these areas. The Service anticipates that additional facilities within the Ventura River, Santa Clara River, and Calleguas Creek watersheds may be added to the O&M Program over time, and that the effects to least Bell's vireos and southwestern willow flycatchers from these facilities will be equivalent in nature to the effects described below.

Up to 10 percent of District facilities each year may require maintenance or repair that would involve the removal of vegetation that provides suitable habitat for least Bell's vireos and southwestern willow flycatchers. This vegetation removal is anticipated to occur predominantly within the footprint of existing facilities that are managed vegetation-free, and therefore this 10 percent per year vegetation removal does not represent a compounding loss of habitat; rather this vegetation removal is confined to a specific footprint where habitat is not expected to generally occur.

Mitigation/restoration projects required by the Corps, California Department of Fish and Game, and others, which involve protecting and enhancing habitat for the least Bell's vireo and southwestern willow flycatcher by removing invasive vegetation, will help to offset the effect of habitat loss for both of these species. We estimate that up to 10 acres per year of mitigation/restoration would occur in the Ventura River and Calleguas Creek watersheds and up to 15 acres per year would occur in the Santa Clara River. In the first few years following invasive vegetation removal, the habitat value for least Bell's vireo and southwestern willow flycatcher is anticipated to be reduced, but as native vegetation grows back in, the mitigation/restoration sites are anticipated to provide higher quality habitat for the species.

Table 14. Estimated annual habitat removal for least Bell's vireo and southwestern willow flycatcher from maintenance and repair activities where vegetation has matured or repair activities that require vegetation removal are necessary, and from mitigation/restoration activities.

EXPECTED ANNUAL HABITAT REMOVAL (Acres)				
	Least Bell's Vireo		*Southwestern Willow Flycatcher*	
	Maintenance & Repair	Mitigation/ Restoration	Maintenance & Repair	Mitigation/ Restoration
Ventura River	3.5	10	3.2	10
Santa Clara River	4.6	15	4.5	15
Calleguas Creek	17.4	10	8.4	10
TOTAL	60.5		51.1	

To analyze the effects to least Bell's vireo and southwestern willow flycatcher from losing the amount of suitable habitat quantified in Table 14, we followed a three step process:

- **Estimation Method 1:** We estimated the theoretical maximum number of breeding pairs that could be affected by the O&M Program by calculating the maximum number of territories that could occur within the impact area, assuming full occupancy of territories. This estimation method is most appropriate for high quality habitat, where breeding pairs may be found in tight clusters, fully occupying the habitat (Table 15).

- **Estimation Method 2:** Because we know that the project area also contains habitat of moderate to low quality where all potential breeding territories are not occupied, we also estimated the pairs affected by the O&M Program using the average density of birds throughout the watershed (pairs of breeding birds per acre). This estimate would be accurate if the birds and their suitable habitat were distributed evenly throughout the floodplain, which does not account for the clustering of territories observed in Least Bell's vireos or irregular distribution of habitat (Table 16).

- Based on our knowledge of least Bell's vireos and southwestern willow flycatchers within the project area we synthesized the two methodologies described above to arrive at our best estimate of the expected number of breeding pairs for each species that we expect to be affected by the O&M Program; and that final result is depicted in Table 17.

The first method used to estimate the number of pairs of least Bell's vireos and southwestern willow flycatchers that would be affected by the O&M Program is designed to calculate the theoretical maximum pairs that could potentially be affected. Based upon the published territory sizes for the least Bell's vireo (0.5 to 7.5 acres per pair) and assuming a uniform distribution of territories and saturation of suitable habitat, the O&M Program could theoretically result in the removal of habitat for 11 to 122 pairs of least Bell's vireos from maintenance, repair, and mitigation/restoration activities. Based on the range of territory sizes for southwestern willow flycatcher (0.15 to 5.7 acres per pair) and assuming a uniform distribution of territories and saturation, the O&M Program could result in the removal of habitat for 13 to 347 pairs of southwestern willow flycatchers from maintenance, repair and mitigation/restoration activities. A breakdown of these effects by watershed is shown in Table 15.

Table 15. Theoretical maximum number of pairs of least Bell's vireo and southwestern willow flycatcher potentially affected annually, based on minimum and maximum territory size and assuming full occupancy of all territories. Numbers in parenthesis indicate the mean.

METHOD 1: THEORETICAL MAXIMUM PAIRS AFFECTED				
	Least Bell's Vireo		*Southwestern Willow Flycatcher*	
	Maintenance & Repair	Mitigation/ Restoration	Maintenance & Repair	Mitigation/ Restoration
Ventura River	1-7 (4)	2-20 (6)	3-21 (12)	2-67 (35)
Santa Clara River	1-10 (6)	2-30 (9)	1-30 (16)	3-100 (52)
Calleguas Creek	3-35 (19)	2-20 (6)	2-56 (29)	2-67 (35)
TOTAL	11-122 (50)		13-341 (179)	

These estimates based on territory size, and assuming full occupancy of suitable habitat, represent the theoretical maximum number of pairs that could be affected, however the number of pairs actually anticipated to be affected is far less based on the small proportion of suitable habitat and number of potential territories that are actually occupied by breeding pairs each year. This is particularly true for the Southwestern willow flycatcher, which has only been observed in very low densities throughout the Santa Clara River, and nesting has not been documented in the Ventura River and Calleguas Creek watersheds.

In order to obtain a more accurate estimate of the actual number of least Bell's vireos and southwestern willow flycatchers that may be affected by the O&M Program, we used the Santa Clara River floodplain as a proxy for the entire project area and calculated the average density of least Bell's vireos and southwestern willow flycatchers in the project area. To do this, we used biological survey data (described in the Environmental Baseline section) to estimate the total number of pairs of least Bell's vireos and southwestern willow flycatchers within the Ventura County portion of the Santa Clara River floodplain and divided the total potential habitat area by the total number of pairs.

Based on survey data for least Bell's vireos, the trajectory of least Bell's vireo population numbers, and expansion of habitat for least Bell's vireo in the Santa Clara River since the last survey data in 2006, we estimate that the portion of the Santa Clara River floodplain within Ventura County may currently support approximately 100 territorial males. For the purposes of this estimation, we will assume all 100 males are successful in attracting a mate, and therefore there are 100 pairs within this 6,700-acre area of potential suitable habitat. Using this estimation method, there would be an average of one pair of least Bell's vireos for every 67 acres of potentially suitable habitat within the Ventura County portion of the Santa Clara River floodplain.

Survey data for the southwestern willow flycatcher in the Santa Clara River floodplain is less robust than for the least Bell's vireo and therefore a watershed-wide total number of pairs is more difficult to determine. Durst et al. (2008) reported 8 pairs within the Santa Clara River management unit in 2007 (inclusive of the Ventura River, Piru Creek, San Francisquito Creek, Soledad canyon, and Big Tujunga Creek and portions of the San Gabriel River). Labinger et al (2011) reported 7 pairs throughout the Santa Clara River during surveys conducted in 2005 and 2006, although all suitable habitat was not surveyed. These survey results likely under-represent the actual number of birds present because southwestern willow flycatchers are difficult to detect after a pairs has formed (i.e., the male may no longer respond to taped calls played during surveys) and because surveys have only been conducted in limited areas of the Santa Clara River. For purposes of this estimation, we will assume that 8 pairs are located within the Ventura County portion of the Santa Clara River floodplain, within the project area. Using this estimation method, there would be an average of 1 pair of southwestern willow flycatchers for every 840 acres of potentially suitable habitat within the Ventura County portion of the Santa Clara River floodplain.

Table 16 shows the average number of pairs of least Bell's vireos and southwestern willow flycatchers we anticipate could be affected by the O&M Program throughout the project area based on the total occupancy and total potential suitable habitat area for the Santa Clara River. Because watershed-wide survey data for the Ventura River and Calleguas Creek watersheds is not available, we used the average least Bell's vireo density (one pair per 67 acres) and average southwestern willow flycatcher density (one pair per 840 acres) calculated for Santa Clara River for these watersheds.

Table 16. Average number of pairs of least Bell's vireos and southwestern willow flycatchers estimated to be affected by maintenance and repair and mitigation activities based on calculated average density of these species throughout the entire watershed.

METHOD 2: PAIRS AFFECTED BASED ON AVERAGE DENISTY				
	Least Bell's Vireo		*Southwestern Willow Flycatcher*	
	Maintenance & Repair	Mitigation/ Restoration	Maintenance & Repair	Mitigation/ Restoration
Ventura River	1	1	1	1
Santa Clara River	1	1	1	1
Calleguas Creek	1	1	1	1
TOTAL	6		6	

Using the theoretical maximum number of pairs affected (Method 1 - Table 15) would produce a substantial overestimate because this method assumes that all suitable habitat is occupied. The estimate based on average number of pairs (Method 2 - Table 16) also has uncertainty associated with it because it assumes a uniform distribution of least Bell's vireos and southwestern willow flycatchers and uniform distribution of suitable habitat over the entire watershed area, which is not biologically valid, particularly for least Bell's vireos. In the lower Santa Clara River, least Bell's vireos aggregate their nesting in high quality habitat areas, creating nodes where there may be several territories closely spaced together, but separated by other nodes by otherwise apparently suitable habitat.

Habitat for least Bell's vireo and southwestern willow flycatchers at District facilities covers the full spectrum from high to low quality. The theoretical maximum estimates (Method 1, Table 15) are more appropriate for estimating least Bell's vireo pairs affected by O&M Program activities in high quality habitat, and the density-based estimates (Method 2, Table 16) are more appropriate for estimating least Bell's vireo pairs in medium to low quality habitat. Therefore, for purposes of this biological opinion, we expect that the number of least Bell's vireos pairs that could be affected by the O&M Program annually is the mean of the estimates projected using the theoretical maximum (Method 1) and density-based estimates (Method 2), as shown in Table 17. Because southwestern willow flycatcher nesting is thought to be very low throughout the project area and has not been observed in the aggregated spatial orientation typical of least Bell's vireos in this area (Labinger et al. 2011, Service 2011), the expected number of pairs potentially affected by District activities are more realistically represented by the density-based projections (Method 2). The expected number of pairs of least Bell's vireos and southwestern willow flycatchers anticipated to be affected by the O&M Program annually is shown in Table 17.

Table 17. Expected pairs of least Bell's vireos and southwestern willow flycatchers projected to be affected by the O&M Program annually.

EXPECTED PAIRS AFFECTED ANNUALLY				
	Least Bell's Vireo		*Southwestern Willow Flycatcher*	
	Maintenance & Repair	Mitigation/ Restoration	Maintenance & Repair	Mitigation/ Restoration
Ventura River	3	6	1	1
Santa Clara River	4	9	1	1
Calleguas Creek	10	6	1	1
TOTAL	38		6	

The anticipated effects are likely to be predominately from habitat removal during the non-breeding season, when the birds are not present. Removal of suitable habitat for least Bell's vireo and southwestern willow flycatchers may occur when routine maintenance has been neglected at a facility thereby allowing establishment of suitable habitat, when repair activities are necessary, and during mitigation/restoration projects. Vegetation removed from habitat for the least Bell's vireo and southwestern willow flycatcher, even during the time of year when adults are not present can adversely affect these species. Least Bell's vireo and southwestern willow flycatcher adults often return to the previous season's territory to breed and are strongly territorial. Temporary or permanent loss of habitat may cause the species to seek out new

territories and breeding sites. Moving to an unfamiliar territory may expose least Bell's vireo or southwestern willow flycatchers to exhaustion and reduced fitness or starvation associated with decreased foraging opportunities, increased predation risk, inter- and intra-species interactions, and decreased probability of nesting success. The loss of habitat within a territory could also diminish available foraging and sheltering habitat for the birds. These effects will be minimized by the District's proposed measures to avoid vegetation removal during the breeding season (March 1 to September 15) to the maximum extent practical; to conduct surveys in any areas where vegetation removal would occur during the nesting season; and to avoid any active nests by a buffer distance established by Service-approved biologists.

If O&M Program activities occur when active nests are present in the action area, worker foot traffic and construction equipment could dislodge the nests and crush eggs. Young fledglings in the action area could be flushed from protected areas by worker or construction vehicle presence, excessive noise, or physical impact. The District has proposed to minimize these effects by conducting the surveys described in LBV-2 and establishing buffer zones described in LBV-3.

Anecdotal evidence also suggests that human presence can attract predators to least Bell's vireo and southwestern willow flycatcher habitat areas. Predators and cowbirds may both be capable of "homing in" on agitated least Bell's vireos and southwestern willow flycatchers, and subsequently destroy or parasitize nearby nests (The Nature Conservancy 1997, Chace et al. 2002). Project-induced alterations, reductions, or disturbances of occupied and potential least Bell's vireo and southwestern willow flycatcher habitat and an increased human presence may induce higher rates of cowbird parasitism and nest depredation. To minimize this effect, the District has proposed to conduct as much work as possible outside of the nesting season for these subspecies.

The O&M Program includes various activities that would occur adjacent to suitable habitat, but would not affect the habitat itself. Activities such as mechanical grading and paving access roads as well as repairing damaged concrete structures will produce noise and human traffic in areas adjacent to least Bell's vireo and Southwestern willow flycatcher nests. The least Bell's vireo and southwestern willow flycatcher are sensitive to prolonged, loud noise. In addition, excessive airborne or deposited dust may degrade habitat to the point that it is no longer suitable for the species. Project activities causing noise and dust include hammering piles, grading the access road, and moving vehicles on dirt roads. In particular, construction-related noise, vibration, and night lighting could adversely affect nesting and breeding behavior, resulting in a decrease in nesting success. If construction activity or noise increases once a least Bell's vireo or southwestern willow flycatcher pair has established a nest or breeding territory near the project activities, the pair may abandon their nest, resulting in a failed breeding attempt and an unnecessary expenditure of energy. This could cause failure of a nesting attempt, death of eggs and fledglings, exposure of adults to increased predation risk, violent inter- and intraspecific interactions, and decreased foraging opportunities. Moreover, birds rely on auditory signals in the form of songs, alarm and scolding calls, to establish and defend territories, attract a mate, feed and care for young at the nest, and to locate and evade potential predators (e.g., Scherzinger 1979). Ambient noise levels may hinder vital calls by the least Bell's vireo and southwestern willow flycatcher.

We have used 60 decibels (dB) as a practical threshold above which substantial impacts to the least Bell's vireo and southwestern willow flycatcher might occur. The 60 dB threshold is considered average conversation level from 3-feet away and is typically the level encountered under ambient conditions (i.e., without noise sources such as vehicles or tools). Based upon this threshold, RECON (1989) estimated that noise levels above 60 dB from March 15 to September 15 may impact least Bell's vireo reproductive success. While least Bell's vireos often continue to occupy areas subject to noise levels above 60 dB, one study has documented significantly reduced reproductive success due to noise impacts (U.S. Marine Corps 1995). A power mower at a distance of 3 feet is approximately 107 dB and a power saw at 3 feet is approximately 110 dB (Galen Carol Audio 2007).

The District proposes to avoid work adjacent to suitable habitat for least Bell's vireo and southwestern willow flycatchers during the breeding season to the maximum extent possible; however, due to the extent of O&M Program activities required each year, it is not feasible to entirely avoid work adjacent to occupied habitat throughout the breeding season. The duration required to complete O&M Program tasks adjacent to suitable habitat varies by the activity type. Typical durations for representative O&M activities in each of the three watersheds from data recorded between 2005 and 2011 are shown in Appendix B. These data show that on average, O&M Program activities require 4 days of work per facility per year, but that this duration will vary based on facility type and required maintenance. The highest number of days worked at any of these facilities over a 7 year timespan was 41 days. These data are representative of work activities that occur throughout the entire year, and therefore the number of days worked when least Bell's vireos and southwestern willow flycatchers are present would be lower. The average work duration adjacent to suitable habitat of 4 days per facility per year represents a low frequency of disturbance that is not likely to have a substantial adverse effect on least Bell's vireos and southwestern willow flycatchers that may inhabit areas adjacent to O&M Program activities.

Trash left during or after project activities could attract predators to work sites, which could prey on least Bell's vireos and southwestern willow flycatchers. For example, coyotes (*Canis latrans*) and raccoons are attracted to trash and could also prey opportunistically on many bird species. This potential impact will be reduced or avoided by careful control of trash at all O&M Program sites as specified in the BMPs.

Recovery of least Bell's vireo

The draft recovery plan for the least Bell's vireo calls for stable or increasing populations of "several hundred or more breeding pairs" within each of the population/metapopulation units in order for the species to be downlisted from endangered to threatened. Delisting will be considered when populations are stable or increasing over a 5-year period and when threats are reduced or eliminated so that populations/metapopulations are capable of persisting without significant human intervention or when perpetual endowments are secured for cowbird trapping and exotic plant control in riparian habitat.

We do not expect the proposed project to substantially affect the conservation of the least Bell's vireo, in terms of the recovery strategy described in the recovery plan because:

1. The current trend in the Santa Clara River population/metapopulation unit is increasing (Service 2006), and this increasing trend has been observed over a period during which the O&M Program has been operating in a manner proposed in this biological opinion (1996 to 2005); and

2. The mitigation/restoration portion of the O&M Program will target exotic plants for removal and may support cowbird trapping, thereby facilitating the reduction of these major threats to the species identified in the recovery plan.

Recovery of southwestern willow flycatcher

Within Ventura County the Santa Clara River is the most important watershed for the recovery of southwestern willow flycatchers, with the Ventura River and Calleguas Creek acting as supporting habitats that may facilitate metapopulation health. The Santa Clara River is one area within the Santa Clara River Management Unit within the Central California Recovery Unit. The metapopulation in this management unit has been identified for increased population stability and enhancement. The minimum number of territories targeted for this management unit before the southwestern willow flycatcher can be reclassified to threatened is 25.

We do not expect the proposed project to substantially affect the conservation of the southwestern willow flycatcher, in terms of the recovery strategy described in the recovery plan because:

1. The current trend in the Santa Clara River Management Unit is stable, and this trend has been observed over a period during which the O&M Program has been operating in a manner proposed in this biological opinion (1993 to 2007); and

2. The mitigation/restoration portion of the O&M Program will target exotic plants for removal and may support cowbird trapping, thereby facilitating the reduction of these major threats to the species identified in the recovery plan, and promoting the establishment of additional pairs.

In summary, projects within the O&M Program could adversely affect least Bell's vireos and southwestern willow flycatchers by removing habitat, or working in close proximity to nests during the breeding season. These effects will be minimized by the District's implementation of the minimization measures described above. These routine maintenance, repair, and mitigation/restoration projects are not anticipated to compromise the recovery of least Bell's vireos and southwestern willow flycatchers. We anticipate that a maximum of 25.5 acres of suitable habitat for least Bell's vireo containing approximately 17 pairs; and a maximum of 16.1 acres of suitable habitat for southwestern willow flycatchers containing approximately 3 pairs may be adversely affected each year by maintenance and repair activities. The effects to least Bell's vireos and southwestern willow flycatchers are anticipated to be predominately non-lethal (i.e., birds returning to territories where suitable habitat has been removed is the predominant adverse effect), and because habitat removal associated with maintenance and repair activities is confined to a defined footprint that is generally maintained free of suitable habitat, we do not expect the maintenance and repair activities to compromise the survival and recovery of least Bell's vireos or southwestern willow flycatchers.

We anticipate that a maximum of 35 acres of suitable habitat for least Bell's vireos and southwestern willow flycatchers containing approximately 21 pairs of least Bell's vireos and 3 pairs of southwestern willow flycatchers may be adversely affected each year by mitigation/restoration activities. The adverse effects from these activities are anticipated to be temporary in nature, and mitigation/restoration will ultimately benefit the species by enhancing native vegetation that provides higher quality habitat, allowing a higher number of pairs to occupy the area after the restoration is complete.

Southwestern willow flycatcher critical habitat

Critical habitat for the southwestern willow flycatcher would be adversely affected by the O&M Program routine maintenance, repair, and mitigation/restoration components through the removal of vegetation that supports suitable breeding, foraging, and sheltering habitat for the subspecies. Vegetation removal may be temporary or permanent depending on the specific project activity. For example, vegetation within 15 feet of levees will be permanently removed, whereas invasive vegetation in mitigation/restoration areas would be temporarily removed to allow native vegetation to grow back. Most of the O&M Program Facilities are maintained vegetation-free and do not support the PCEs for southwestern willow flycatcher. Infrequently, areas that are intended to be maintained vegetation-free are not maintained and vegetation grows back to support the PCEs once again. In these cases, permanent vegetation removal is required, but the footprint of such removal will always be within that of existing District facilities.

The removal of vegetation associated with the construction of new District facilities is not covered under this biological and conference opinion. Such new facilities would be permitted individually and then added to the O&M Program once initial vegetation removal activities have occurred. Therefore, the addition of new facilities to the O&M Program will not generate additional losses of critical habitat that have not been adequately analyzed in other consultations.

O&M Program activities also include mitigation/restoration activities such as invasive plant removal. These activities may occur anywhere within Ventura County, inside or outside of critical habitat units. All mitigation/restoration activities are anticipated to ultimately benefit habitat for southwestern willow flycatchers and will only have temporary impacts to critical habitat as described above.

For the purposes of this consultation, we will assume that all District facilities are intended to be maintained vegetation free, but that 10 percent per year have mature vegetation that unintentionally regrew and requires removal. We will also assume that the District will conduct 10 acres of mitigation/restoration work in the Ventura River and 15 acres of mitigation/restoration in the Santa Clara River per year. Based on these assumptions, we anticipate that up to 13 acres of critical habitat within the Ventura River and 18 acres of critical habitat within the Santa Clara River may be adversely affected each year (Table 18).

Table 18. Summary of potential annual effects to critical habitat for the southwestern willow flycatcher.

Unit	Proposed CH (Acres)	Facilities in CH (Acres)	CH Affected by routine maintenance and repair (Acres)	CH Affected by mitigation/ restoration (Acres)
Ventura River	1,445	29	3	10
Santa Clara River	9,505	31	3	15
Piru Creek	1,862	0	0	0

The amount of critical habitat that would be affected by the O&M Program is small in comparison to the amount of critical habitat available in the Ventura River and Santa Clara River units, and is not anticipated to substantially affect the function of the Santa Clara Complex. The mitigation/restoration projects may ultimately have a beneficial effect on southwestern willow flycatcher critical habitat after native vegetation has regrown and matured to the point where these areas support the PCEs.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future state, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological and conference opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

We are unaware of any non-federal actions that are reasonably certain to occur and are likely to adversely affect the tidewater goby and its critical habitat, California red-legged frog and its critical habitat, least Bell's vireo, southwestern willow flycatcher and/or critical habitat for the southwestern willow flycatcher.

CONCLUSION

The O&M Program includes routine maintenance, repair, and mitigation/restoration activities associated with the upkeep of flood control facilities throughout Ventura County. These activities will adversely affect tidewater gobies and their critical habitat, California red-legged frogs and their critical habitat, least Bell's vireos, and southwestern willow flycatchers and their critical habitat. The impacts of the O&M Program will change from year-to year; however, a majority of District facilities are maintained vegetation-free and the routine maintenance and repair activities are designed to keep them in that condition, which does not generally support habitat for listed species. Habitat removal is only anticipated to occur in areas where vegetation has been allowed to grow into suitable habitat and in areas where repair projects require temporary removal of habitat. Therefore, the effects of O&M Program maintenance and repair activities are anticipated to be limited to a small portion of habitat available for tidewater gobies, California red-legged frogs, least Bell's vireo and southwestern willow flycatchers (Table 19). Furthermore any permanent removal of habitat will be primarily confined to the footprint of existing facilities. Any permanent removal of habitat beyond the existing footprint will be minor and not represent a substantial loss of habitat. Overall, the O&M program is not anticipated to generate an additional loss of habitat.

O&M Program mitigation/restoration activities are anticipated to impact a maximum of 10 acres of habitat in the Ventura River, 15 acres of habitat in the Santa Clara River, and 10 acres of habitat in Calleguas Creek per year and may occur within or outside the boundaries of District facilities. Mitigation/restoration activities are anticipated to have temporary adverse effects to tidewater gobies, California red-legged frogs and their critical habitat, least Bell's vireos and southwestern willow flycatchers and their critical habitat; however the long-term effects of mitigation/restoration projects are anticipated to be beneficial to these species and critical habitats.

Table 19. Summary of anticipated effects to threatened and endangered species and their critical habitats

	Ventura River	Santa Clara River	Ormond Lagoon	Calleguas Creek	TOTAL
Tidewater Goby					
Suitable habitat affected by maintenance and repair activities (acres/year)	3	0.1	0.1	2	5.2
Expected take by maintenance and repair	All individuals within the affected area				Indeterminate
Suitable habitat affected by mitigation activities (acres/year)	0	0	0	0	0
Expected take by mitigation	0	0	0	0	0
Tidewater Goby Critical Habitat					
Critical habitat affected by maintenance and repair activities (acres/year)	0.2	0	0	N/A	0.2
Critical habitat affected by mitigation activities (acres/year)	0	0	0	N/A	0
California Red-Legged Frog					
Suitable habitat affected by maintenance and repair activities (acres/year)	2.5	N/A	N/A	N/A	2.5
Expected take by maintenance and repair (individuals)	25	N/A	N/A	N/A	25
Suitable habitat affected by mitigation activities (acres/year)	10	N/A	N/A	N/A	10
Expected take by mitigation (individuals)	50	N/A	N/A	N/A	50
California Red-legged Frog Critical Habitat					
Critical habitat affected by maintenance and repair activities (acres/year)	2.3	N/A	N/A	N/A	2.3
Critical habitat affected by mitigation activities (acres/year)	10	0	N/A	N/A	10
Least Bell's Vireo					
Suitable habitat affected by maintenance and repair activities (acres/year)	3.5	4.6	N/A	17.4	25.5
Expected take by maintenance and repair (pairs)	3	4	N/A	10	17
Suitable habitat affected by mitigation activities (acres/year)	10	15	N/A	10	35
Expected take by mitigation (pairs)	6	9	N/A	6	21
Southwestern Willow Flycatcher					
Suitable habitat affected by maintenance and repair activities (acres/year)	3.2	4.5	N/A	8.4	16.1
Expected take by maintenance and repair (pairs)	1	1	N/A	1	3
Suitable habitat affected by mitigation activities (acres/year)	10	15	N/A	10	35
Expected take by mitigation (pairs)	1	1	N/A	1	3
Southwestern Willow Flycatcher Critical Habitat					
Critical habitat affected by maintenance and repair activities (acres/year)	3	3	N/A	N/A	6
Critical habitat affected by mitigation activities (acres/year)	10	15	N/A	N/A	25

Tidewater goby
The O&M program is not anticipated to substantially interfere with the reproduction, numbers, and distribution of the tidewater goby because:

- O&M Program activities may require the temporary relocation of tidewater gobies out of a small portion of their habitat within the Ventura River, Santa Clara River, Ormond Lagoon and Calleguas Creek; however, the vast majority of each of these populations will be unaffected, and reproduction within each of these populations as a whole will not be compromised, therefore reproduction necessary to maintain the species-wide metapopulation will not be compromised.

- O&M Program activities are anticipated to result in the detection of no more than 10 dead tidewater gobies throughout the action area each year. This represents an insignificant number in comparison to the thousands of individuals that are projected to inhabit each of these populations, and is not a substantial decrease in numbers of tidewater gobies that exist range-wide.

- The O&M Program is not anticipated to interfere with metapopulation dynamics that facilitate the distribution of the species and maintain their distribution range-wide.

California red-legged frog
The O&M program is not anticipated to substantially interfere with the reproduction, numbers, and distribution of the California red-legged frog because:

- O&M Program activities may require the temporary relocation of California red-legged frogs out of a small portion of their habitat within the Ventura River, however, relocations will predominantly occur during the time of year that avoids the breeding season for California red-legged frogs, and reproduction within the Ventura River will not be substantially affected. The O&M program is not anticipated to have a substantial effect to reproduction when considering the species range-wide.

- O&M Program activities are anticipated to result in the take of up to 75 eggs, tadpoles, adults and juveniles each year, primarily through relocation. We anticipate the detection of no more than 1 dead adult or juvenile, 5 dead tadpoles, or 1 disturbed egg mass each year. The loss of this number of individuals is low in comparison to the number of individuals that are projected to inhabit the Ventura River, and is not a substantial decrease in numbers of California red-legged frogs that exist range-wide. Furthermore, restoration actions are anticipated to facilitate an increased number of individuals in the future.

- The O&M Program will not affect the distribution of California red-legged frogs range-wide, because the population will continue to persist in the Ventura River.

Least Bell's vireo
The O&M program is not anticipated to substantially interfere with the reproduction, numbers, and distribution of the least Bell's vireo because:

- O&M Program activities may require the removal of habitat primarily from areas where habitat does not routinely exist, and may interfere with reproduction of individuals that return to a territory that has been partially or fully removed. Because of the abundance of habitat that generally exists adjacent to affected areas, most of the affected least Bell's vireos are anticipated to find suitable alternative habitat, and reproduction within the Ventura River, Santa Clara River and Calleugas Creek as a whole will not be substantially affected. Therefore the overall reproduction of the species is not anticipated to be substantially affected.

- O&M Program activities are anticipated to result in the take of up to 38 least Bell's vireo each year, primarily through harm associated with finding alternative habitat. We anticipate the detection of no more than 1 dead adult or juvenile least Bell's vireo or the abandonment of no more than 1 active nest each year. The loss of this number of individuals is low in comparison to the number of individuals that are projected to inhabit the action area, and is not a substantial decrease in numbers of least Bell's vireos that exist range-wide. Furthermore, restoration actions are anticipated to facilitate an increased number of individuals in the future, which will vastly outweigh the loss of these few individuals.

- The O&M Program will not affect the distribution of least Bell's vireo range-wide, because the population will continue to persist throughout the action area and no barriers to dispersal will be created by the O&M Program.

Southwestern willow flycatcher
The O&M program is not anticipated to substantially interfere with the reproduction, numbers, and distribution of the southwestern willow flycatcher because:

- O&M Program activities may require the removal of habitat primarily from areas where habitat does not routinely exist, and may interfere with reproduction of individuals that return to a territory that has been partially or fully removed. Because of the abundance of habitat that generally exists adjacent to affected areas, most of the affected southwestern willow flycatchers are anticipated to find suitable alternative habitat, and reproduction within the Ventura River, Santa Clara River and Calleugas Creek as a whole will not be substantially affected. Therefore the O&M program will not interfere with overall reproduction of the species range-wide.

- O&M Program activities are anticipated to result in the take of up to 6 paris of southwestern willow flycatchers each year, primarily through harm associated with finding alternative habitat. We do not anticipate the detection of any dead southwestern willow flycatchers or the abandonment of any active nests. Restoration actions are anticipated to facilitate an increased number of individuals in the future that will promote increased numbers of southwestern willow flycatchers within the action area. On whole, we do not anticipate the O&M Program to substantially affect the number of southwestern willow flycatchers range-wide.

-

- The O&M Program will not affect the distribution of southwestern willow flyactchers range-wide, because the population will continue to persist throughout the action area and no barriers to dispersal will be created by the O&M Program.

After reviewing the current status of the tidewater goby and its critical habitat, California red-legged frog and its critical habitat, least Bell's vireo, and southwestern willow flycatcher and its proposed critical habitat, the environmental baseline for the action area, the effects of the project activities on the reproduction, number and distribution of each species, and the cumulative effects, it is the Service's biological and conference opinion that the Corps' approval of the District's O&M Program is not likely to jeopardize the continued existence of the tidewater goby, California red-legged frog, least Bell's vireo, and southwestern willow flycatcher and is not likely to destroy of adversely modify designated critical habitat for the tidewater goby, California red-legged frog, and the proposed critical habitat for the southwestern willow flycatcher.

This concludes formal conference for the proposed action. The Corps may request that the Service confirm the conference opinion on the proposed critical habitat of the southwestern willow flycatcher as a biological opinion if the critical habitat designation is finalized. The request must be in writing. If the Service reviews the proposed action and finds that there have been no significant changes in the action as planned or in the information used during the conference, the Service will confirm the conference opinion as the biological opinion on the project and no further consultation would be necessary. After designation of the southwestern willow flycatcher critical habitat and adoption of this conference opinion as a biological opinion, the Corps must request reinitiation if any of the criteria described in the Reinitiation Notice at the end of this document are met.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened wildlife species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described below are non-discretionary, and must be undertaken by the Corps so that they become binding conditions of any grant or permit issued to the District, as appropriate, for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the

activity covered by this incidental take statement. If the Corps (1) fails to assume and implement the terms and conditions or (2) fails to require the District to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, the Corps or District must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement. [50 CFR 402.14(i)(3)]

Tidewater goby

The Service anticipates that all tidewater gobies within up to 5.2 acres of occupied habitat per year could be taken in the form of harm or harassment through capture and relocation, crushing, stranding, and lowered breeding success as a result of O&M Program activities that require dewatering or other activities that directly affect occupied habitat. The exact number of tidewater gobies that could be affected cannot be predicted because of the natural fluctuations in numbers that these species experience and the difficulty in determining how many individuals are present at any given time. The Service anticipates that all individuals of all life stages of the tidewater goby within the area that will be netted and seined during dewatering activities will be taken as a result of capture, and that a subset of these individuals may be killed or injured during handling and release during routine maintenance, repair and mitigation/restoration activities. We also anticipate that tidewater goby eggs many be killed through damage to, and destruction of, burrows during maintenance and repair activities that involve dewatering or disturbance to wetted habitat. Additionally, O&M Program activities may also have effects to tidewater gobies through increased sedimentation; however, with the implementation of the BMPs and minimization measures, these activities are anticipated to have insignificant effects to tidewater gobies.

Because we cannot definitively anticipate the number of tidewater gobies that may be taken, yet must provide a trigger for reinitiation, if more than ten (10) tidewater gobies in any one year are found dead or injured, and those deaths or injuries can be attributed to the proposed actions, the Corps should require the District to stop work and contact our office immediately so we can review the project activities to determine if additional protective measures are needed.

California red-legged frog

The Service anticipates that all California red-legged frogs within 2.5 acres per year, estimated at 25 individuals, could be taken as a result of monitoring and repair activities. We also anticipate that all California red-legged frogs within 10 acres per year, estimated at 50 individuals, may be taken as a result of mitigation/restoration activates. The incidental take is expected to be in the form of capture. Any individuals in affected habitats that are not detected and relocated may be injured or killed by heavy equipment and personnel in the project area.

Incidental take of California red-legged frog adults, subadults, or tadpoles may be difficult to detect for the following reasons: (1) the California red-legged frog is generally difficult to detect due to its small body size; (2) finding a dead or impaired specimen is unlikely; and (3) losses may be masked by seasonal fluctuations in hydrology unrelated to the project. Because we must provide a limit at which consultation must be reinitiated, we anticipate that no more than 1 adult or subadult California red-legged frogs, 1 egg mass, or 10 tadpoles will be injured or killed in a given year. If more than 1 California red-legged frog adult, or 5 California red-legged frog tadpoles are found dead or if more than 1 eggmass is detected within a project area, the Corps

should require the District to stop work and contact our office immediately so we can review the project activities to determine if additional protective measures are needed.

Least Bell's vireo
The Service anticipates that up to 25.5 acres of suitable habitat for least Bell's vireo each year may be affected during routine maintenance and repair activities and up to 35 acres per year may be affected by mitigation/restoration activities. Based on the range of documented territory sizes, watershed-wide survey data, and total potential habitat, we anticipate that up to 17 pairs of least Bell's vireos per year could be taken by maintenance and repair activities and up to 21 pairs per year will be taken through mitigation/restoration activities. The nature of this taking consists primarily of non-lethal harm through habitat removal that occurs during the non-breeding season, where birds with territories that have been cleared of vegetation will be harmed by the effort required to find alternative breeding and feeding habitat. We also anticipate that least Bell's vireos will be taken through harassment by O&M Program activities that occur during the nesting season through work activities adjacent to nests that may cause birds to flush from the nests or attract predators to nests. The likelihood of detecting dead individuals is low due to the birds' small size and cryptic coloring, therefore if more than 1 least Bell's vireo is found dead or more than 1 active nest is identified to be damaged or abandoned due to O&M program activities in any given year, the Corps should require the District to stop work and contact our office immediately so we can review the project activities to determine if additional protective measures are needed.

Southwestern willow flycatcher
The Service anticipates that up to 16.1 acres of suitable habitat for the southwestern willow flycatcher each year may be affected during routine maintenance and repair activities and up to 35 acres per year may be affected by mitigation activities. Based on watershed-wide survey data, and total potential habitat, we anticipate that up to 3 pairs of southwestern willow flycatchers will be taken by maintenance and repair activities, and up to 3 pairs per year will be taken by mitigation/restoration activities. The nature of this taking consists primarily of habitat removal that occurs during the non-breeding season, where birds with territories that have been cleared of vegetation will be harmed by the effort required to find alternative habitat. If any southwestern willow flycatchers are found dead or if any active nests are determined to be damaged or permanently abandoned due to O&M Program activities, the Corps should require the District to stop work and contact our office immediately so we can review the project activities to determine if additional protective measures are needed.

In summary, the anticipated maximum annual take of tidewater gobies, California red-legged frogs, least Bell's vireos and southwestern willow flycatchers is summarized in Table 20.

Table 20. Reinitiation criteria based on habitat affected and documented mortality. The consultation must be reinitiated if these estimates are exceeded in any given year.

	Habitat Affected by Maintenance & Repair	Habitat affected by Mitigation/Restoration	Dead Individuals
Tidewater goby	5.2 acres	0 acres	10 individuals
California red-legged frog	2.5 acres	10 acres	1 adult or juvenile; 5 tadpoles; 1 eggmass
Least Bell's vireo	25.5 acres	35 acres	1 adult or juvenile; 1 active nest abandoned or destroyed
Southwestern willow flycatcher	16.1 acres	35 acres	No adults or juveniles; No active nests abandoned or destroyed

REASONABLE AND PRUDENT MEASURES

The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. If, during the course of the action, this level of incidental take is exceeded, such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measures provided. The Federal agency must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize the incidental take of tidewater gobies, California red-legged frogs, least Bell's vireos and southwestern willow flycatchers:

1. Take of tidewater gobies must be minimized by using qualified individuals to conduct monitoring, capture, and relocation;

2. The take of California red-legged frogs from capture, relocation, and construction activities must be minimized by employing qualified biologists who are able to handle California red-legged frogs safely and without transmitting diseases or pathogens; and

3. The taking of least Bell's vireos and southwestern willow flycatchers must be minimized by using qualified biologists to conduct surveys and other activities related to the protection of these species.

TERMS AND CONDITIONS

To be exempt from the prohibitions of section 9 of the Act, the Corps must ensure that the District complies with the following terms and conditions, which implement the reasonable and prudent measures described above and outline reporting and monitoring requirements. These terms and conditions are non-discretionary.

The following term and condition implements reasonable and prudent measure 1:

a. Only qualified personnel authorized under the auspices of this biological opinion can survey for, capture, and relocate tidewater gobies. The District and the Corps must request our approval of any biologists they wish to employ to survey for, capture and relocate tidewater gobies from work areas. The request must be in writing and be received by us at least 30 days prior to any such activities being conducted.

The following terms and conditions implement reasonable and prudent measure 2:

a. Only qualified personnel authorized under the auspices of this biological opinion can survey for, capture, and relocate California red-legged frogs. The District and the Corps must request our approval of any biologists they wish to employ to survey for, capture and relocate California red-legged frogs from work areas. The request must be in writing and be received by us at least 30 days prior to any such activities being conducted.

b. Any steep-walled holes or trenches that will be left open overnight in suitable habitat for California red-legged frogs must be covered such that they will not entrap California red-legged frogs.

c. Latex or nitrile gloves must not be used when handling California red-legged frogs. Clean hands, free of lotions, sun screens, and fragrances are recommended. If gloves are necessary, the use of well-rinsed vinyl gloves is recommended.

d. To ensure that diseases are not conveyed between work sites by Service-approved biologists, the fieldwork code of practice developed by the Declining Amphibian Populations Task Force must be followed at all times. A copy of the code of practice is enclosed as Appendix C of this document. The Service-approved biologist may substitute a bleach solution (0.5 to 1.0 cup of bleach to 1.0 gallon of water) for the ethanol solution. Care must be taken so that all traces of the disinfectant are removed before entering the next aquatic habitat.

The following term and condition implements reasonable and prudent measure 3:

a. Only qualified personnel authorized under the auspices of this biological opinion can survey for, designate suitable buffers, and monitor for least Bell's vireos and southwestern willow flycatchers. The District and the Corps must request our approval of any biologists they wish to employ to conduct these activities in

association with the O&M Program. The request must be in writing and be received by us at least 30 days prior to any such activities being conducted.

REPORTING REQUIREMENTS

Pursuant to 50 CFR 402.14(i)(3), Corps must report the progress of the action and its impact on the species to the Service as specified in this incidental take statement. The Corps or the District, on behalf of the Corps, will provide an annual report in August of each year. The report must describe all activities that were conducted under the auspices of this biological opinion, including activities that were described in the project description and required under the terms and conditions. The report must include the following:

- Documentation of the number of tidewater gobies, California red-legged frogs, least Bell's vireo and southwestern willow flycatcher that were found along with the location where they were found;

- Documentation of the number of tidewater gobies, California red-legged frogs, least Bell's vireo and southwestern willow flycatchers that were taken during project activities, and the nature of the taking (e.g., capture, injury, etc.);

- Description of the nature and extent of tidewater goby, California red-legged frog, and southwestern willow flycatcher designated critical habitat adversely affected;

- Description of instances of when the BEMP was implemented, dates when subsequent storms occurred, and when breaching occurred; and

- A brief discussion of any problems encountered in implementing minimization measures.

DISPOSITION OF DEAD OR INJURED SPECIMENS

As part of this incidental take statement and pursuant to 50 CFR 402.14(i)(1)(v), upon locating a dead or injured tidewater goby, California red-legged frog, least Bell's vireo, southwestern willow flycatcher, initial notification within three working days of its finding must be made by telephone and in writing to the Ventura Fish and Wildlife Office (805-644-1766). The report must include the date, time, location of the carcass, a photograph, cause of death or injury, if known, and any other pertinent information.

Care must be taken in handling injured animals to ensure effective treatment and care, and in handling dead specimens to preserve biological material in the best possible state. Injured animals must be transported to a qualified veterinarian. Should any treated tidewater goby, California red-legged frog, least Bell's vireo, southwestern willow flycatcher survive, the Service should be contacted regarding the final disposition of the animals. The Service should be contacted to determine the appropriate deposition location for any dead specimens that are identified.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

- Work with landowners throughout the Calleguas Creek watershed to modify flood control facilities so that they may provide enhanced habitat for least Bell's vireos, southwestern willow flycatchers, and tidewater gobies.

- Coordinate mitigation/restoration projects in the Santa Clara River with The Nature Conservancy, and in the Ventura River with the Ventura Hillsides Conservancy and Ojai Valley Land Conservancy.

- Where possible, consolidate small mitigation/restoration projects into a focused area to have a larger cumulative benefit through the restoration of larger contiguous areas.

- Conduct species monitoring before and after the completion of mitigation/restoration projects to document the beneficial effects of such activities.

The Service requests notification of the implementation of any conservation recommendations so we may be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats.

REINITIATION NOTICE

This concludes formal consultation on the Corps' authorization for activities conducted through the District's O&M Program. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, the exemption issued pursuant to section 7(o)(2) will have lapsed and any further take would be a violation of section 4(d) or 9. Consequently, we recommend that any operations causing such take cease pending reinitiation.

Sincerely,

Diane K. Noda
Field Supervisor

Appendices

1. Appendix A – O&M Program Facilities and Habitat
2. Appendix B – Average Work Duration at O&M Program Facilities
3. Appendix C – Declining Amphibian Taskforce Field Work Code of Practice

LITERATURE CITED

Ahnelt H., J. Göschl, M. N. Dawson and D. K. Jacobs. 2004. Geographical variation in the ephalic lateral line canals of *Eucyclogobius newberryi* (Teleostei, Gobiidae) and its comparison with molecular phylogeography. Folia Zoologica 53(4):385-398.

American Ornithologists' Union (AOU). 1998. Checklist of North American Birds, Seventh Edition. American Ornithologists' Union, Washington D.C.

Barlow, J. 1962. Natural history of the Bell's vireo, *Vireo bellii*. University of Kansas Publication 12: 241-296.

Beck, P. 1996. Song repertoire in the least Bell's vireo, *Vireo bellii pusillus*: relationships between repertoire size and breeding ecology. M.S. Thesis, San Diego State University. viii + 94 pp.

BonTerra Consulting. 2011. Results of the Tidewater Goby Survey for the State Route 1/Calleguas Creek Project Site Located West of Camarillo in Unincorporated Ventura County, California. Costa Mesa, California.

Brown, B. 1993. Bell's Vireo. *In*: A. Poole, P. Stettenheim, and F. Gill (eds.), The birds of North America, No. 35. Philadelphia: The Academy of Natural Sciences; Washington D.C.: The American Ornithologists' Union.

Bulger, J.B., N.J. Scott, and R.B. Seymour. 2003. Terrestrial activity and conservation of adult California red-legged frogs (Rana aurora draytonii) in coastal forests and grasslands. Biological conservation 110: 85-95.

California Natural Diversity Data Base (CNDDB). 2012. Rarefind: A database application for the California Dept. of Fish and Game, Natural Heritage Division data, California Natural Diversity Data Base, Sacramento.

Cardno Entrix. 2011. Results of tidewater goby surveys in Calleguas Creek and Revlon Slough, conducted August 31 and September 1, 2011. Memorandum from Rosemary Thompson (Cardno Entrix) to Angela Bonfiglio-Allen (Ventura County Watershed Protection District) dated September 27, 2011. Santa Barbara, California.

Cashins, S.D., R.A. Alford, and L.F. Skerratt. 2008. Lethal effect of latex, nitrile, and vinyl gloves on tadpoles. Herpitological Review. 39(3):298-301.

City of San Buenaventura. 2010. Least Bell's vireo focused survey report, westside and north Ventura community plan project. Prepared by Rincon Consultants, Inc. Ventura, California.

Chace, J. F., J. J. Walsh, A. Cruz, J. W. Prather, and H. M. Swanson. 2002. Spatial and temporal activity patterns of the brood parasitic brown-headed cowbird at an urban/wildland interface. Landscape and Urban Planning. 983(2002) 1-12.

Dawson, M. N., J. L. Stanton, and D. K. Jacobs. 2001. Phylogeography of the tidewater goby, *Eucyclogobius newberryi* (Teleostei, Gobiidae), in coastal California. Evolution 55(6):1167- 1179.

Devine, M.D., Duke, S.O., and Fedtke, C. 1993. Physiology of herbicide action. Prentice Hall, Englewood Cliffs, NJ.

Durst, S.L., Sogge, M.K., Stump, S.D., Walker, H.A., Kus, B.E., and Sferra, S.J., 2008. Southwestern willow flycatcher breeding sites and territory summary—2007: U.S. Geological Survey Open–File Report 2008–1303, 31 p.

Edington, A.N., Sheridan, P.M., Stephenson, G.R., Thompson, D.G., and Boermans, H.J. 2004. Comparative effects of ph and Vision herbicide on two life stages of four anuran amphibian species. Environmental Toxicology and Chemistry. 23(4)815-822.

Extension Toxicology Network [EXTOXNET]. 1996. Glyphosate pesticide information profile. Available at: http://extoxnet.orst.edu/pips/glyphosa.htm. Accessed June 17, 2010.

Ferree, K. 2002. Nest site selection and nest success of yellow warbler, Bell's vireo, and yellow-breasted chat in desert riparian ecosystem. M.S. Thesis, San Diego State University. viii + 57 pp.

Fidenci, P. 2004. The California red-legged frog, Rana aurora draytonii, along the Arroyo Santo Domingo, Northern Baja California, Mexico. The Herpetological Journal, Volume 88. London, England.

Finch, D. M. and S. H. Stoleson, eds. 2000. Status, ecology, and conservation of the Southwestern Willow Flycatcher. Gen. Tech. Rep. RMRS-GTR-60. Ogden, Utah: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station.

Franzreb, K. 1989. Ecology and Conservation of the Endangered Least Bell's Vireo. Biological Report 89(1), U.S. Dept. of the Interior, Service, Sacramento, California.

Galen Carol Audio. 2007. Decibal (Loudness) Comparison Chart. Available at: http://www.gcaudio.com/resources/howtos/loudness.html. Accessed: June 22, 2012.

Garrett, K. and J. Dunn. 1981. Birds of Southern California: status and distribution. Los Angeles Audubon Society, California. 408pp.

Gisey, J.P., Dobson, S., and Solomon, K.R. 2000. Ecotoxicological risk assessment for Roundup herbicide. Review of Environmental Contamination and Toxicology. 167:35-120.

Goldwasser, S. 1981. Habitat requirements of the least Bell's vireo. California Department of Fish and Game Final Report, Job IV-38.1.

Govindarajulu, P.P. 2008. Literature review of impacts of glyphosate herbicide on amphibians: What risks can the silvicultual use of this herbicide pose for amphibians in B.C.? Wildlife Report No. R-28. British Colombia, Ministry of Environment. Victoria, B.C.

Gray, V. and J. Greaves. 1984. The Riparian Forest as Habitat for the Least Bell's Vireo. *In*: R. Warner and K. Hendrix (eds.), California Riparian Systems: Ecology, Conservation, and Productive Management. University of California Press, Davis, California.

Greaves, J. 1987. Least Bell's vireos at the Gibraltar Reservoir in Santa Barbara County, California in 1987. Unpublished report prepared for the Office of Endangered Species, U.S. Fish and Wildlife Service, U.S. Forest Service, and the California Department of Fish and Game.

Greaves, J. and Z. Labinger. 1997. Site tenacity and dispersal of least Bell's vireos. 1997 Transactions of the Western Section of the Wildlife Society 33:18-23.

Greaves, J.M. 1998. Annual report of activities conducted during 1998 on recovery permit PRT-769931. Santa Barbara, California.

Griffith, J. and J. Griffith. 2000. Cowbird control and the endangered least Bell's vireo: a management success story. *In*: J. Smith, T. Cook, S. Rothstein, S. Robinson, and S. Sealy (eds.), Ecology and management of cowbirds and their hosts. Pp. 342-356. University of Texas Press, Austin, Texas.

Grinnell, J. and A. Miller. 1944. The distribution of the birds of California. Pacific Coast Avifauna No. 27. Contribution from the Museum of Zoology of the University of

California, Berkeley. Reprinted by Artemisia Press, Lee Vining, California, 1986. 617 pp.
Grishaver, M.A. P.J. Mock, and K.L. Preston. 1998. Breeding behavior of the California gnatcatcher in southwestern San Diego County, California. Western Birds 29: 299-322.
Grismer, L. 2002. Reptiles and Amphibians of Baja California, including its Pacific island and the islands in the Sea of Cortez. University of California Press, Berkeley and Los Angeles, California.
Hamilton, T. 1962. Species relationships and adaptations for sympatry in the avian genus *Vireo*. Condor 64:40-68.
Hayes, M.P. and M.M. Miyamoto. 1984. Biochemical, behavioral and body size differences between Rana aurora aurora and R. a. draytonii. Copeia 1984(4): 1018-1022.
Hayes, M.P. and M.R. Jennings. 1988. Habitat correlates of distribution of the California red-legged frog (Rana aurora draytonii) and the foothill yellow-legged frog (Rana boylii): Implications for management. Pp. 144-158. In: Proceedings of the symposium on the management of amphibians, reptiles, and small mammals in North America. R. Sarzo, K.E. Severson, and D.R. Patton, (technical coordinators). U.S.D.A. Forest Service General Technical Report RM-166.
Hayes, M.P. and M.R. Tennant. 1985. Diet and feeding behavior of the California red-legged frog, Rana aurora draytonii (Ranidae). The Southwestern Naturalist 30(4): 601-605.
Henley, W.F., M.A. Patterson, R.J. Neves, and A. Dennis Lemly. 2000. Effects of Sedimentation and Turbidity on Lotic Food Webs: A Concise Review for Natural Resource Managers. Reviews in Fisheries Science. 8(2):125-139.
Hensley, M. 1950. Notes on the breeding behavior of the Bell's vireo. Auk 67:243-244.
Hoffman, S. and R. Zembal. 2007. Status and management of the least Bell's vireo and southwestern willow flycatcher in Santa Ana River Watershed 2006. Prepared for Orange County Water District and U.S. Fish and Wildlife Service.
Howe, C.M., Berrill, M., Pauli, B.D., Helbing, C.C., Werry, K., Veldhoen, N. 2004. Toxicity of glyphosate-based pesticides to four North American frog species. Environmental Toxicology and Chemistry. 23(8)1928-1938.
Irwin, J.F. and D.L. Soltz. 1984. The natural history of the tidewater goby, *Eucyclogobius newberryi*, in the San Antonio and Schuman Creek system, Santa Barbara County, California. U.S. Fish and Wildlife Service, Sacramento Endangered Species Office Contract No. 11310-0215-2.
Jennings, M. 1993. Letter to Peter C. Sorensen, U.S. Fish and Wildlife Service, Sacramento, California.
Jennings, M.R. and M.P. Hayes. 1985. Pre-1900 overharvest of California red-legged frogs (Rana aurora draytonii): The inducement for bullfrog (Rana catesbeiana) introduction. Herpetological Review 31: 94-103.
Jennings, M.R., M.P. Hayes, and D.C. Holland. 1992. A petition to the U.S. Fish and Wildlife Service to place the California red-legged frog (Rana aurora draytonii) and the western pond turtle (Clemmys marmorata) on the list of endangered and threatened wildlife and plants.
Kegley, S.E., Hill, B.R., Orme S., Choi A.H.. 2010. *PAN Pesticide Database,* Pesticide Action Network, San Francisco, California. Available at: http://www.pesticideinfo.org. Accessed June 17, 2010.

Kus, B. 1999. Impacts of brown-headed cowbird parasitism on productivity of the endangered least Bell's vireo. Research and management of the brown-headed cowbird in western landscapes. Studies in Avian Biology 18:160-166.

Kus, B. 2002. Fitness consequences of nest desertion in an endangered host, the least Bell's vireo. Condor 104:795-802.

Kus, B. and K. Miner. 1989. Use of non-riparian habitats by least Bell's vireos. *In*: D. Abell (ed.), California riparian systems conference: protection, management, and restoration for the 1990's; September 22-24, 1988, Davis, California. USDA Forest Service General Technical Report PSW-110. Pp. 299-303.

Kus, B. and M. Whitfield. 2005. Parasitism, productivity, and population growth: response of least Bell's vireos (*Vireo bellii pusillus*) and southwestern willow flycatchers (*Empidonax traillii extimus*) to cowbird (*Molothrus* spp.) control. Ornithological Monographs 57:16-27.

Kus, B. and P. Beck. 1998. Distribution and abundance of the least Bell's vireo (*Vireo bellii pusillus*) and the southwestern willow flycatcher (*Empidonax traillii extimus*) at selected southern California sites in 1997. Prepared for the California Department of Fish and Game. 76 pp.

Lafferty, K.D., C.C. Swift, and R.A. Ambrose. 1999. Postflood persistence and recolonization of endangered tidewater goby populations. North American Journal of Fisheries Management. 19:618-622.

Lafferty, K.D., C.C. Swift, and R.F. Ambrose. 2006. Extirpation and Recolonization in a metapopulation of an endangered fish, the tidewater goby. Conservation biology. 13(6)1447-1453.

Labinger, Z., J. Greaves, and E. Gevirtz. 2011. Avian populations of the Santa Clara River in 2005 and 2006. An evaluation and monitoring tool for habitat restoration. Prepared for the Santa Clara River Trustee Council, U.S. Fish and Wildlife Service. Ventura, California.

Lajmanovich, R.C., Sandoval, M.T., Peltzer, P.M. 2003. Induction of Mortality and Malformation in *Scinax nasicus* tadpoles exposed to glyphosate formulations. Bulletin of Environmental Contamination and Toxicology. 70:612-618.

Luff, J.A., E.H. Paxton, K.E. Kenwood, and M.K. Sogge. 2000. Survivorship and movements of southwestern willow flycatchers in Arizona - 2000. U.S. Geological Survey report to the U.S. Bureau of Reclamation, Phoenix. USGS Forest and Rangelend Ecosystem Science Center, Colorado Plateau Field Station at Northern Arizona University, Flagstaff. 46 pp.

Martin, T. and J. Clobert. 1996. Nest predation and avian life-history evolution in Europe versus North America: A possible role of humans? American Naturalist 147:1028-1046.

McKernan, R.L. and G. Braden. 1999. Status, distribution, and habitat affinities of the southwestern willow flycatcher along the lower Colorado River: Year 3 - 1998. Report to U.S. Bureau of Reclamation, U.S. Fish and Wildlife Service, and U.S. Bureau of Land Management. San Bernardino County Museum. 71 pp.

Miner, K.L. 1989. Foraging ecology of the least Bell's vireo, *Vireo bellii pusillus*. M.S. Thesis, San Diego State University. vii + 87 pp.

Monsanto. 2005. Aquamaster Herbicide Material Safety Data Sheet. Monsanto Company, St. Louis, Missouri.

Muiznieks, B.D., S.J. Sferra, T.E. Corman, M.K. Sogge, and T .J. Tibbitts. 1994. Arizona Partners In Flight southwestern willow flycatcher survey, 1993. Draft report: Nongame and Endangered Wildlife Program, Arizona Game and Fish Department, Phoenix, Arizona. Draft of April 1994. 28 pp.

Mulder, J. and C. Swift. 2007. Hueneme pump station reconstruction project: Construction monitoring and fish relocation report. ENTRIX, Ventura, California. Prepared for the Ventura County Watershed Protection District.

Natural Resources Conservation Service (NRCS). 2006. California district helps watershed look like its old self again. Available at http://www.nrcs.usda.gov/news/thisweek/2004/041124/ caarundodonax.html.

Netter, M.R., E.H. Paxton, and M.K. Sogge. 1998. Banding and movements of the southwestern willow flycatcher at Roosevelt Lake and San Pedro River/Gila River confluence, Arizona - 1998. USGS Forest and Rangeland Ecosystem Science Center, Colorado Plateau Field Station, Flagstaff, Arizona. Funded by the U.S. Bureau of Reclamation, Phoenix, Interagency Agreement #98-AA-32-0010. 4 8 pp.

Newman, J. 1992. Relationships between territory size, habitat structure, and reproductive success in the least Bell's vireo, *Vireo bellii pusillus*. M.S. Thesis, San Diego State University. vii + 85 pp.

Nolan, V. 1960. Breeding behavior of the Bell's vireo in southern Indiana. Condor 62: 225-244.

Owen, J.C. and M.K. Sogge. 1997. Banding and genetic sampling of Willow Flycatchers in Colorado - 1996 and 1997 summary report. U.S.G.S. Colorado Plateau Field Station/Northern Arizona University report.

Paradzick, C.E., R.F. Davidson, J.W. Rourke, M.W. Sumner, A.M. Wartell, and T.D. McCarthey. 2000. Southwestern Willow Flycatcher 1999 Survey and Nest Monitoring Report. Technical Report 151. Arizona Game and Fish Department, Phoenix, AZ. 93 pp.

Paradzick, C.E., R.F. Davidson, J.W. Rourke, M.W. Sumner, and T.D. McCarthey. 1999. Southwestern Willow Flycatcher 1998 Survey and Nest Monitoring Report. Technical Report 141. Arizona Game and Fish Department Phoenix, AZ.

Paxton, E., S. Langridge, and M.K. Sogge. 1997. Banding and population genetics of Southwestern Willow Flycatchers in Arizona - 1997 summary report. U.S.G.S. Colorado Plateau Field Station/Northern Arizona University report.

Peterson, B. 2002. A multi-scale approach to nest predation of the least Bell's vireo (*Vireo bellii pusillus*). M.S. Thesis, San Diego State University. vii + 55 pp.

Peterson, B., B. Kus, and D. Deutschman. 2004. Determining nest predators of the least Bell's vireo through point counts, tracking stations, and video photography. Journal of Field Ornithology 75(1):89-95.

Pike, J. and L. Hays. 1992. The status and management of the least Bell's vireo within the Prado Basin, California, 1986-1991. Unpublished report, California State University, Long Beach Foundation and U. S. Fish and Wildlife Service, Laguna Niguel, California.

Pitelka, F. and E. Koestner. 1942. Breeding behavior of the Bell's Vireo in Illinois. Wilson Bulletin 54:97-106.

RECON (Regional Environmental Consultants). 1989. Comprehensive Species Management Plan for the Least Bell's Vireo. Prepared for the San Diego Area of Governments, San Diego, California.

Relyea, R.A. and Jones, D.K. 2009. The toxicity of Roundup Original Max to 13 species of larval amphibians. Environmental Toxicology and Chemistry. 28(9)2004-2008.

Ryan, T. 2009. The results of least Bell's vireo monitoring at Taylor Ranch, Ventura River, Ventura County, California. Prepared by Ryan Ecological Consulting, Pasadena, California.

Ryan, T. 2010. The results of least Bell's vireo surveys upstream of Foster Park, near Casitas Springs, Ventura County, California. Prepared by Ryan Ecological Consulting, Monrovia, California.

Scherzinger, W. 1979. On the relations of predators of hazel grouse (*Bonasa bonasa*). Vogelwelt 100:205-217. English translation; abstract.

Sharp, B. 2002. Factors influencing the incidence of brood parasitism by brown-headed cowbirds (*Molothrus ater*) of least Bell's vireos (*Vireo bellii pusillus*). M.S. Thesis, San Diego State University. viii + 58 pp.

Salata, L. 1983. Status of the least Bell's vireo on Camp Pendleton, California. Unpublished report prepared for U.S. Fish and Wildlife Service, Laguna Niguel, California. Contract No. 11100-0145-82. January 1983.

Sferra, S.J., T.E. Corman, C.E. Paradzick, J.W. Rourke, J.A. Spencer, and M .W. Sumner. 1997. Arizona Partners In Flight southwestern willow flycatcher survey: 1993-1996 summary report. Nongame and Endangered Wildlife Program Technical Report 113. Arizona Game and Fish Department, Phoenix, Arizona.

Sharp, B. 2002. Factors influencing the incidence of brood parasitism by brown-headed cowbirds (*Molothrus ater*) of least Bell's vireos (*Vireo bellii pusillus*). M.S. Thesis, San Diego State University. viii + 58 pp.

Skaggs, R.W. 1996. Population size, breeding biology, and habitat of Willow Flycatchers in the Cliff-Gila Valley, New Mexico - 1995. New Mexico Department of Game and Fish report. Contract #95-516-91.

Small, M. and M. Hunter. 1988. Forest fragmentation and avian nest predation in forested landscapes. Journal of Wildlife Management 52:123-126.

Sogge, M.K. 1995. Southwestern willow flycatcher (*Empidonax traillii extimus*) monitoring at Tuzigoot National Monument. 1995 progress report to the National Park Service. National Biological Service Colorado Plateau Research Station/Northern Arizona University report. 20 pp.

Sogge, M.K., T.J. Tibbitts, and J. Petterson. 1997. Status and ecology of the southwestern willow flycatcher in the Grand Canyon. Western Birds 28:142-157.

Spencer, J.A., S.J. Sferra, T.E. Corman, J.W. Rourke and M.W. Sumner. 1996. Arizona Partners in Flight 1995 Southwestern Willow Flycatcher survey. Arizona Game and Fish Department, Phoenix. Nongame Technical Report 97.

Stebbins, R.C. 2003. A field guide to western reptiles and amphibians-third ed. Houghton Mifflin Company, Boston, Massachusetts.

Storer, T.I. 1925. A synopsis of the amphibia of California. University of California Publications in Zoology 27: 1-342.

Swenson, R.O. 1995. The reproductive behavior and ecology of the tidewater goby *Eucyclogobius newberryi* (Pisces: Gobiidae). Ph.D. dissertation, University of California, Berkeley, California.

Swift, C.C, J.L. Nelson, C. Maslow, and T. Stein. 1989. Biology and distribution of the tidewater goby, *Eucyclogobius newberryi* (Pisces, Gobiidae) of California. Contributions in Science. Number 404.

Swift, C.C. and D.C. Holland. 1998. The status and distribution of the tidewater goby, *Eucyclogobius newberryi* (Pisces, Gobiidae), on MCB Camp Pendleton, California. Unpublished report.

Swift, C.C., P. Duangsitti, C. Clemente, K. Hasserd, and L. Valle. 1997. Biology and distribution of the tidewater goby, Eucyclogobius newberryi, on Vandenberg air force Base, Santa Barbara County, California. Final Report, USNBS Cooperative Agreement 1445-007-94-8129.

The Nature Conservancy. 1997. Status and Distribution of the least Bell's vireo and southwestern willow flycatcher in the Prado Basin, California, 1986-1997. Unpublished report prepared for the Orange County Water District, County of Orange, California Department of Fish and Game, U.S. Army Corps of Engineers, and U.S. Fish and Wildlife Service.

Tibbitts, T.J., M.K. Sogge, and S.J. Sferra. 1994. A survey protocol for the southwestern willow flycatcher (*Empidonax traillii extimus*). Technical Report NPS/NAUCPRS/NRTR-94-04. National Park Service, Colorado Plateau Research Station at Northern Arizona University, Flagstaff. 24 pp.

U.S. Fish and Wildlife Service (Service). 1986. Endangered and threatened wildlife and plants; Determination of endangered status for the least Bell's vireo; Final Rule. Federal Register 51:16474-16482.

U.S. Fish and Wildlife Service (Service). 1994. Endangered and threatened wildlife and plants; Designation of critical habitat for the Least Bell's Vireo; Final Rule. Federal Register 59:4845-4867.

U.S. Fish and Wildlife Service (Service). 1998. Draft recovery plan for the least Bell's vireo (*Vireo bellii pusillus*). Portland, OR.

U.S. Fish and Wildlife Service (Service). 2002a. Recovery plan for the California red-legged frog (Rana aurora draytonii). U.S. Fish and Wildlife Service, Portland, Oregon. Viii + 173 pp.

U.S. Fish and Wildlife Service (Service). 2002b. Final recovery plan for the southwestern willow flycatcher (*Empidonax traillii extimus*). Albuquerque, New Mexico. i-ix + 210 pp., Appendices A-O.

U.S. Fish and Wildlife Service. 2005. Recovery plan for the tidewater goby (*Eucyclogobius newberryi*). U.S. Fish and Wildlife Service, Portland, Oregon. vi + 199pp.

U.S. Fish and Wildlife Service (Service). 2006. Least Bell's Vireo (*Vireo bellii pusillus*) 5-Year Review: Summary and Evaluation. Carlsbad Fish and Wildlife Office. September 20, 2006.

U.S. Fish and Wildlife Service. 2007. Tidewater goby (*Eucyclogobius newberryi*) 5-year review summary and evaluation. Ventura Fish and Wildlife Office, Ventura, California.

U.S. Fish and Wildlife Service. 2011. Designation of revised critical habitat for the southwestern willow flycatcher : Proposed rule. 76FR50542.

U.S. Geological Survey (USGS). 2002. Least Bell's vireo distribution and abundance in 2001: Summary. Unpublished data available from the USGS Western Ecological Research Center, San Diego Field Station, San Diego, California. Compiled November 22, 2002.

U.S. Marine Corps. 1995. Programmatic groundwater/riparian habitat assessment at Marine Corps Base Camp Pendleton, California. Marine Corps Base Camp Pendleton, Environmental Security Office, San Diego County, California.

Unitt, P. 1987. "Empidonax traillii extimus: An Endangered Subspecies." Western Birds 18(3):137–162.

Ventura County Watershed Protection District. 2008. Operations and Maintenance Program Final Environmental Impact Report. Ventura, California.

Ventura County Watershed Protection District. 2011. Response to USFWS Request for information regarding endangered plants. Routine Operations and Maintenance Program. Ventura, California.

Ventura County Watershed Protection District. 2012. Summary tables of O&M Program facilities, habitat area, and work duration. Ventura, California

Ventura County Watershed Protection District. 2010b. Survey data for least Bell's vireos and southwestern willow flycatchers in the Ventura River.

Ventura County Watershed Protection District. 2010. Operations and maintenance program impact analysis for federally-listed species. Ventura, California.

Wang, J.C.S. 1982. Early life history and protection of the tidewater goby *Eucyclogobius newberryi*: in the rodeo lagoon of the Golden Gate National Recreation Area. Technical Report No. 7. National Park Service, Resources Study Unit.

Whitcomb, R., C. Robbins, J. Lynch, B. Whitcomb, M. Klimkiewicz, and D. Bystrak. 1981. Effects of forest fragmentation on avifauna of the eastern deciduous forest. *In* R. Burgess and D. Sharpe (eds.), Forest island dynamics in man-dominated landscapes. Springer-Verlag, New York, New York.

Whitfield, M.J. and K. Enos. 1996. A Brown-Headed Cowbird Control Program and Monitoring for the Southwestern Willow Flycatcher, South Fork Kern River, California, 1996. Prepared for: U.S. Army Corps of Engineers, Sacramento District and the Calif. Dept. of Fish and Game.

Wilbur, S. 1980. The least Bell's vireo in Baja California, Mexico. Western Birds 11:129-133.

Worcester, K.R. 1992. Habitat utilization in a central California coastal lagoon by the tidewater goby (*Eucyclogobius newberryi*). Master's thesis, California Polytechnic State University, San Luis Obispo, California.

Wright, A.H. and A.A. Wright. 1949. Handbook of frogs and toads of the United States and Canada. Comstock Publishing Company, Inc., Ithaca, NY. xii + 640 pp.

Yahner, R. and C. Delong. 1992. Avian predation and parasitism on artificial nests and eggs in two fragmented landscapes. Wilson Bulletin 104:162-168.

Zembal, R., K. Kramer, and R. Bransfield. 1985. Survey of Vegetation and Vertebrate Fauna in the Prado Basin and the Santa Ana River Canyon, California. Unpublished report, U.S. Fish and Wildlife Service. Laguna Niguel, California.

PERSONAL COMMUNICATION

Camm Swift. 2010. Tidewater goby technical expert, retired. Email correspondence, September 19, 2010.

APPENDIX A. TABLE 1 – TIDEWATER GOBY

VENTURA RIVER WATERSHED FACILITIES	LENGTH	HARD	FAC HAB	TOTAL	ADJ HAB	DAYS	DAYS	DAYS
Levees	**Feet**	**Acres**	**Acres**	**Acres**	**Acres**	**Avg.**	**Low**	**High**
41011 Bank Protection/Levee: Ocean to Main St.*	2,800	4.42	0.59	**5.01**	32.81	7.6	1	18
Note: incl. 1.09 acres of willow habitat removal within 630 linear feet of toe hardscape.								
41012 Bank Protection/Levee (Main St. to Hwy 33)*	10,115	23.20	0.00	**23.20**	91.40	24.9	19	34
SUBTOTALS	**12,915**	**27.62**	**0.59**	**28.21**	**124.21**			
Outlets to Ventura River								
41728 Cal-trans Secondary Outlet*	40	0.00	0.01	**0.01**	9.27			
41131 Canada de San Joaquin Channel & Outlet	195	0.00	0.18	**0.18**	12.39			
41110 Stanley Ave. Drain Outlet*	440	0.00	0.62	**0.62**	12.94			
41121 Dent Drain Outlet	180	0.00	0.46	**0.46**	9.01	1	0	3
41721 Dent Secondary Outlet	380	0.00	0.52	**0.52**	12.38			
41751 Freeway Side Drain #1 Outlet*	270	0.00	0.37	**0.37**	12.46	0.6	0	1
41752 Freeway Side Drain #2 Outlet*	250	0.00	0.27	**0.27**	10.15			
41753 Freeway Side Drain #3 Outlet*	170	0.00	0.20	**0.20**	8.56			
41754 Freeway Side Drain #4 Outlet*	395	0.00	0.52	**0.52**	10.81			
41755 Freeway Side Drain #5 Outlet*	50	0.05	0.00	**0.05**	8.60	0.1	0	1
41729 Peking & 41727 Harrison Secondary Outlets*	1175	0.00	2.50	**2.50**	23.17	4.1	0	9
41730 Ramona St. Secondary Outlet*	240	0.00	0.39	**0.39**	10.78			
41731 Simpson St. Secondary Outlet*	375	0.00	0.77	**0.77**	17.03	3	0	9
41732 Vince St. Secondary Outlet*	200	0.00	0.19	**0.19**	7.81			
SUBTOTALS	**4,360**	**0.05**	**6.97**	**7.02**	**165.36**			
Mitigation/Restoration Sites								
Lower Ventura River Giant Reed Removal Phase 1*	2,400	0.000	9.850	**9.85**	49.13	6	4	10
Lower Ventura River Giant Reed Removal Phase 2*	2,330	0.000	11.240	**11.24**	43.78	6	4	10
SUBTOTALS	**4,730**	**0.00**	**21.09**	**21.09**	**92.91**			
Ventura River Watershed Grand TOTALS	**22,005**	**27.67**	**28.66**	**56.33**	**382.48**			
SANTA CLARA RIVER WATERSHED	**LENGTH**	**HARD**	**FAC HAB**	**TOTAL**	**ADJ HAB**	**DAYS**	**DAYS**	**DAYS**
Ormond Beach Channels	**Feet**	**Acres**	**Acres**	**Acres**	**Acres**	**Avg**	**Low**	**High**
42302 Oxnard Industrial Drain RR to Pleasant Val. Rd.* ^	1000	2.00	0.00	**2.00**	0.56	16	9	32
42321 J Street Drain Pacific Ocean to Pump Sta.**^	500	0.00	0.78	**0.78**	4.13	11.3	5	33
42322 J Street Drain Pump Station to RR Spur*^	1600	1.58	0.00	**1.58**	2.51	21.1	15	27
SUBTOTALS	**3,100**	**3.58**	**0.78**	**4.36**	**7.20**			

Levees and Stream Gauges								
42012 Santa Clara River Harbor Blvd to Victoria Avenue	4000	6.95	0.00	**6.95**	49.62	0.6	0	2
42017 Santa Clara River Victoria Ave to Ventura Road	7216	14.60	0.00	**14.60**	4.63			
723 Santa Clara River at Victoria Stream Gauge	100	0.00	0.88	**0.88**	14.75			
Note: Maint. done by Vta County Transportation Dept.								
Victoria Ave Drain Secondary Outlet	0	0.00	0.16	**0.16**	9.25			
SUBTOTALS	**11,316**	**21.55**	**1.04**	**22.60**	**78.25**			
Mitigation/Restoration Sites								
None								
SUBTOTALS	**0**	**0.00**	**0.00**	**0.00**	**0.00**			
Santa Clara River Watershed GRAND TOTALS	**14,416**	**25.13**	**1.82**	**26.95**	**85.45**			

CALLEGUAS CREEK WATERSHED FACILITIES	LENGTH	HARD	FAC HAB	TOTAL	ADJ HAB	DAYS	DAYS	DAYS
Channels	**Feet**	**Acres**	**Acres**	**Acres**	**Acres**	**Avg**	**Low**	**High**
45021 Calleguas Creek Hwy 1 to Broome Ranch Crossing*^	21,120	30.41	109.74	**140.15**	5.80	23.4	14	30
45023 Calleguas Creek Broome Ranch to Hueneme Rd*^	8660	28.02	73.11	**101.13**	0.02			
45101 Revolon Slough Hwy 1 to Las Posas Rd.*^	21,120	17.28	30.20	**47.48**	5.93	6.9	5	11
SUBTOTALS	**50,900**	**75.72**	**213.04**	**288.75**	**11.75**			
Calleguas Creek Watershed GRAND TOTALS	**50,900**	**75.72**	**213.04**	**288.75**	**11.75**			
GRAND TOTAL ALL WATERSHEDS	**87,321**	**128.52**	**243.52**	**372.03**	**479.69**			

* Known or presumed occupied habitat within water present

** Designated critical habitat

^: Hardscape concrete lined channel is potentially occupied or known occupied habitat for tidewater goby

HARD = FACILITY HARDSCAPE: access road, rock, concrete, compacted earth slopes, etc. with no habitat value

FAC POT = FACILITY POTENTIAL HABITAT: maintained facility areas with potential to support species (earth bottom, wet channels, etc.)

ADJ HAB = ADJACENT SUITABLE HABITAT: non-facility areas with suitable habitat for species adjacent to District facilities.

DAYS: Average annual work days, with low and high numbers of days for the period January 1, 2005 through December 27, 2011. If blank, data were not analyzed for this facility.

Mitigation/Restoration Sites: not covered by other BOs or permits.

PT Codes: 20, 21, 26, 27, 28, 32, 34, 41, PS41, 42, PS42, 43, 44, 45, 48, 49, 53, 55, 56, 57, 76, 80, 85, 86, 87, 89, 92.

5.24.2012

Revised 6.27.2012

APPENDIX A. TABLE 2 – CALIFORNIA RED-LEGGED FROG

VENTURA RIVER WATERSHED FACILITIES	LENGTH	HARD	FAC HAB	TOTAL	ADJ HAB	DAYS	DAYS	DAYS
Levees/Dams	**Feet**	**Acres**	**Acres**	**Acres**	**Acres**	**Avg**	**Low**	**High**
41021 Casitas Spgs Bank Protection: Fresno Cyn to Hwy 33*^	5,810	9.65	1.86	**11.51**	70.97	9.6	5	17
Note: includes 1.7 ac of existing willow riparian vegetation to be removed at toe upon issuance of permits.								
41031 Live Oak Acs Bank Protect/ Levee u/s Santa Ana	4,640	5.95	1.72	**7.67**	55.74	5.8	1	9
Note: includes 1.0 acre of willow scrub to be removed upon issuance of permits.								
41023 Santa Ana Road Bridge Sediment Removal*	240	0.00	1.07	**1.89**	10.85			
41181 Fresno Canyon Outlet to Ventura River*	220	0.00	0.22	**0.22**	11.23			
41901 Matilija Dam and Gage Maintenance**	215	1.88	0.00	**1.88**	31.71	17	4	35
SUBTOTALS	**11,125**	**17.48**	**4.86**	**23.17**	**180.50**			
Stream Gauges								
602 Matilija Creek at Matilija Hot Springs Stream Gage*	100	0.00	0.30	**0.30**	23.28	15	6	30
604 North Fork Matilija Creek at Hwy 33 Stream Gage	65	0.00	0.08	**0.08**	2.48	18	6	30
605 San Antonio Creek at Casitas Springs Stream Gage**	100	0.00	0.33	**0.33**	14.90	12	6	30
608 Ventura River at Foster Park Stream Gage*	100	0.00	0.85	**0.85**	7.68	11	6	30
ME-VR2 WQ Gage at Ventura River at OVSD Facility*	150	0.00	0.10	**0.10**	5.50	10	5	20
SUBTOTALS	**515**	**0.00**	**1.66**	**1.66**	**53.84**			
Mitigation/Restoration Sites								
None								
SUBTOTALS	**0**	**0.00**	**0.00**	**0.00**	**0.00**			
Ventura River Watershed GRAND TOTALS	**11,640**	**17.48**	**6.51**	**24.82**	**234.34**			

* Known or presumed occupied habitat if water present

** Designated critical habitat

^: Hardscape rock riprap is potential habitat for frog.

HARD = FACILITY HARDSCAPE: access road, rock, concrete, compacted earth slopes, etc. with no habitat value

FAC HAB = FACILITY POTENTIAL HABITAT: Maintained facility areas with potential to support species (earth bottom, wet channels, etc.)

ADJ HAB = ADJACENT SUITABLE HABITAT: non-facility areas with suitable habitat for species adjacent to District facilities.

DAYS: Average annual work days, with low and high numbers of days for the period January 1, 2005 through December 27, 2011. If no data supplied, the facility was not analyzed.

Notes: Current condition includes overgrown vegetation within routine maintenance area (15 foot width along the toe).

Mitigation/Restoration Sites: not covered by other BOs or permits.

PT Codes: 30, 32, 33, 34, 41, PS41, 42, 43, 45, 48, 53, 55, 57, 77, 89, 92

5.24.2012

Revised 6.27.2012

APPENDIX A. TABLE 3 – LEAST BELL'S VIREO

VENTURA RIVER WATERSHED FACILITIES	LENGTH FT	HARD	FAC HAB	TOTAL	ADJ HAB	DAYS	DAYS	DAYS
Levees	**Feet**	**Acres**	**Acres**	**Acres**	**Acres**	**Avg**	**Low**	**High**
41021 Casitas Springs Bank Protection	5,810	9.65	1.86	**11.51**	71.50	4.7	3	7
Note: includes 1.7 ac of existing willow riparian vegetation to be removed at toe upon issuance of permits.								
41011 Bank Protection/Levee (Ocean to Main St.)*	2,800	4.42	0.59	**5.01**	32.79	4.4	0	11
Note: incl. 1.09 acres of willow habitat removal within 630 linear feet of toe hardscape.								
41012 Bank Protection/Levee (Main St. to Hwy 33)*	10,115	23.20	0.00	**23.20**	91.39	12.3	7	21
41031 Live Oak Ac Bank Protect./Levee u/s Santa Ana Rd.*	4,640	5.95	1.72	**7.67**	55.75	3.7	1	8
SUBTOTALS	**23,365**	**43.22**	**4.17**	**47.39**	**251.43**			
Outlets to Ventura River								
41131 Canada de San Joaquin Channel and Outlet*	195	0.00	0.18	**0.18**	12.40			
41110 Stanley Ave. Drain Outlet*	440	0.00	0.62	**0.62**	12.95			
41121 Dent Drain Outlet*	180	0.00	0.46	**0.46**	9.01	0	0	0
41152 Canada Larga Channel & Outlet	240	0.28	0.00	**0.28**	1.17			
41181 Fresno Canyon Outlet to Ventura River*	220	0.00	0.22	**0.22**	11.23			
41721 Dent Secondary Outlet*	380	0.00	0.52	**0.52**	12.38			
41728 Cal-trans Secondary Outlet*	40	0.00	0.01	**0.01**	9.27			
41729 Peking Secondary & 41727 Harrison Secondary Outlets*	1175	0.00	2.50	**2.50**	23.18	0.4	0	3
41730 Ramona St. Secondary Outlet*	240	0.00	0.39	**0.39**	10.78			
41731 Simpson St. Secondary Outlet*	375	0.00	0.77	**0.77**	17.03	0	0	0
41732 Vince St. Secondary Outlet*	200	0.00	0.19	**0.19**	7.81			
41751 Freeway Side Drain #1 Outlet*	270	0.00	0.37	**0.37**	12.46	0	0	0
41752 Freeway Side Drain #2 Outlet*	250	0.00	0.27	**0.27**	10.15			
41753 Freeway Side Drain #3 Outlet*	170	0.00	0.20	**0.20**	8.56	0	0	0
41754 Freeway Side Drain #4 Outlet*	395	0.00	0.52	**0.52**	10.81			
41755 Freeway Side Drain #5 Outlet*	50	0.05	0.00	**0.05**	8.57	0	0	0
SUBTOTALS	**4,820**	**0.33**	**7.22**	**7.55**	**177.76**			
Other Facilities								
41901 Matilija Dam and Gage Maintenance*	215	1.88	0.00	**1.88**	1.26	4.1	2	14
41023 Santa Ana Road Bridge Sediment Removal	240	0.00	0.89	**0.89**	10.85			
SUBTOTALS	**455**	**1.88**	**0.89**	**2.77**	**12.11**			

Stream Gages								
602 Matilija Creek at Matilija Hot Springs Stream Gage*	100	0.00	0.30	**0.30**	2.66	15	6	30
604 North Fork Matilija Creek at Hwy 33 Stream Gage	65	0.00	0.08	**0.08**	2.48	18	6	30
605 San Antonio Creek at Casitas Springs Stream Gage	100	0.00	0.30	**0.30**	6.03	12	6	30
608 Ventura River at Foster Park Stream Gage	100	0.00	0.85	**0.85**	7.69	11	6	30
ME-VR2 WQ Gage at Ventura River at OVSD Facility	150	0.00	0.10	**0.10**	5.46	10	5	20
SUBTOTALS	**515**	**0.00**	**1.63**	**1.63**	**24.32**			
Mitigation/Restoration Sites								
Lower Ventura River Giant Reed Removal Phase 1*	2,400	0.00	9.85	**9.85**	49.16	6	4	10
Lower Ventura River Giant Reed Removal Phase 2*	2,330	0.00	11.24	**11.24**	43.80	6	4	10
SUBTOTALS	**4,730**	**0.00**	**21.09**	**21.09**	**92.96**			
Ventura River Watershed GRAND TOTALS	**33,885**	**45.43**	**35.00**	**80.43**	**558.58**			

SANTA CLARA RIVER WATERSHED FACILITIES	LENGTH FT	HARD	FAC HAB	TOTAL	ADJ	DAYS	DAYS	DAYS
Levees and Bank Protection	**Feet**	**Acres**	**Acres**	**Acres**	**Acres**	**Avg**	**Low**	**High**
42012 Santa Clara River Harbor Blvd to Victoria Levee *	4000	6.95	0.00	**6.95**	55.24	0.3	0.0	1.0
42017 Santa Clara River Victoria Ave to Ventura Rd Levee*	7200	13.32	0.00	**13.32**	92.43			
42030 Santa Clara River Weir Field	n/a	1.85	0.78	**2.63**	30.34			
42021 Santa Clara River 101 Fwy to South Mountain Levee*	24929	92.57	0.00	**92.57**	273.66	4.7	0.0	11.0
42025 Sudden Barranca to Saticoy Ave Levee*	2545	7.01	0.92	**7.93**	28.89	1.3	0.0	4.0
42026 Santa Clara River North Bank Groins*	1500	2.79	1.09	**3.88**	36.72			
42036 Groins @ South Mtn Road*	1825	1.72	0.57	**2.29**	32.15	0.9	0.0	4.0
42037 Bardsdale Levee	3836	5.12	1.23	**6.35**	49.39			
43061 &43062 Santa Paula Creek Corps Project	9000	31.68	21.66	**53.34**	8.61			
43308 Sespe Bank Protection at Goodenough Road	990	0.89	0.00	**0.89**	14.62			
SUBTOTALS	**55825**	**163.90**	**26.25**	**190.15**	**622.05**			
Outlets to Santa Clara River								
43161 Bardsdale Ditch Outlet	30	0	0.02	**0.02**	10.08			
43191 Basolo Ditch Outlet	30	0	0.05	**0.05**	10.90			
42511 Brown Barranca Outlet	30	0	0.05	**0.05**	10.93	0.6	0	2
42205 Central Ave. Drain Outlet	30	0	0.02	**0.02**	10.12	0.3	0	1
42491 Clark Barranca Outlet	30	0	0.07	**0.07**	8.96			
42391 El Rio Drain Outlet*	30	0	0.02	**0.02**	9.78	9.6	3	26
43051 Fagan Canyon Outlet	30	0	0.03	**0.03**	9.57			

42531 Franklin Barranca Outlet*	30	0	0.17	**0.17**	9.80			
43181 Grimes Canyon Outlet	30	0	0.03	**0.03**	10.67	5.6	0	21
42471 Harmon Barranca Outlet*	30	0	0.05	**0.05**	8.33			
43351 Jepson Wash Outlet to Sespe Creek	30	0	0.02	**0.02**	9.48			
43361 Keefe Ditch Outlet to Sespe Creek	30	0	0.09	**0.09**	11.15	4.1	0	15
42701 Montalvo Golf Course Secondary Outlet*	600	0.43	0.30	**0.73**	12.42	2	0	6
42461 Moon Ditch Outlet*	30	0	0.05	**0.05**	10.03	3.6	3	4
43041 Peck Road Drain Outlet*	30	0	0.02	**0.02**	10.12	1.4	0	3
43201 Pole Creek Outlet	30	0	0.01	**0.01**	13.35			
43251 Real Canyon Outlet	30	0	0.05	**0.05**	2.42			
42021 Stroube Drain Outlet*	200	0.07	0.21	**0.28**	12.71			
42501 Sudden Barranca Outlet*	30	0	0.02	**0.02**	9.48			
42704 Victoria Ave. Drain Secondary Outlet*	30	0	0.16	**0.16**	12.45	0.7	0	3
43701 Willard Road Secondary Outlet*	30	0	0.02	**0.02**	12.87			
SUBTOTALS	**1370**	**0.50**	**1.46**	**1.96**	**215.62**			
Mitigation/Restoration Sites								
SCR Upstream of Balcom Cyn Wash *	2000	0.00	15.57	**15.57**	38.31			
SCR So. Mountain Rd. Mitigation Site 1*	275	0.00	0.58	**0.58**	12.28			
SCR So. Mountain Rd. Mitigation Site 2*	270	0.00	0.50	**0.50**	12.86			
SUBTOTALS	**2545**	**0.00**	**16.65**	**16.65**	**63.45**			
Stream Gages								
709 Santa Paula Crk at Mupu Br Stream Gage (Steckel Pk)	100	0.00	0.24	**0.24**	3.89			
723 Santa Clara River at Victoria Stream Gage*	100	0.00	0.88	**0.88**	29.88			
SUBTOTALS	**200**	**0.00**	**1.12**	**1.12**	**33.77**			
Santa Clara River Watershed GRAND TOTALS	**59,940**	**164.40**	**45.48**	**209.88**	**934.89**			

CALLEGUAS CREEK WATERSHED FACILITIES	**LENGTH FT**	**HARD**	**FAC HAB**	**TOTAL**	**ADJ**	**DAYS**	**DAYS**	**DAYS**
Channels	**Feet**	**Acres**	**Acres**	**Acres**	**Acres**	**Avg**	**Low**	**High**
45021 Calleguas Creek Hwy 1 to Broome Ranch Crossing*	21120	30.41	0.00	**30.41**	0.00	14.3	0	24
45023 Calleguas Creek Broome Ranch to Hueneme Rd	8660	28.02	0.00	**28.02**	0.00	7.3	0	12
45025 Calleguas Creek Hueneme Rd to Lewis Rd	7670	18.01	0.00	**18.01**	0.92	2	0	5
45027 Calleguas Creek Lewis Rd to 850 ft u/s University Drive	2420	5.03	9.31	**14.34**	3.32	0.8	0	2
45033 Calleguas Creek Pleasant Valley Rd. to Hwy 101	3860	8.37	1.39	**9.76**	16.42	2.3	0	4
45035 Calleguas Creek Hwy 101 to Adolfo Rd	2900	8.8	1.37	**10.17**	16.56	0.4	0	2

45037 Calleguas Creek Adolfo Rd to Seminary Rd.	2720	11.72	3.62	**15.34**	65.72	0.1	0	1
45051 Arroyo Las Posas @ Seminary	1500	2.26	0.53	**2.79**	18.86	0	0	0
45063 Arroyo Las Posas WWTP to S. Grimes Cyn	2800	7.49	12.66	**20.15**	13.99	0.3	0	2
47011 Arroyo Simi Hitch Blvd to Gabbert Cyn*	2740	7.53	6.60	**14.13**	2.81	1.7	0	3
47012 Arroyo Simi Gabbert Cyn to Beltramo Rd*	5790	10.16	4.67	**14.83**	15.89	0.1	0	1
47013 Arroyo Simi Beltramo Rd to Moorpark Rd (Spring St.)	7640	17.12	11.58	**28.70**	3.38	2.4	0	9
47014 Arroyo Simi Moorpark Rd. to SPRR	3525	12.93	7.69	**20.62**	5.91	0.3	0	1
47015 Arroyo Simi SPRR to No. 2 Canyon	2700	4.08	0.92	**5.00**	21.86			
47031 Arroyo Simi Tapo Cyn Rd to Parker Ranch	3750	16.07	3.30	**19.37**	0.61	0.3	0	1
47031 Arroyo Simi Parker Ranch to Lined Section	2410	1.23	1.67	**2.90**	4.52	0.3	0	1
45240 Beardsley Wash u/s of Zone 2	1500	3.22	1.35	**4.57**	1.66			
45241 Beardsley Wash Drop Structure #2	100	0.07	0.00	**0.07**	2.26	0	0	0
45243 Beardsley Wash Drop Structure #3 @ Bella Vista	235	1.06	0.00	**1.06**	5.79	0.1	0	1
45245 Beardsley Wash Drop Structure #4 (d/s Triple arch)	160	1.17	0.00	**1.17**	4.56			
45247 Beardsley Wash Connelly Triple Arch	160	0.69	0.00	**0.69**	4.58	0	0	0
46011 Conejo Creek: Calleguas Crk to Pancho Rd	3250	4.51	5.13	**9.64**	11.71	5.3	0	8
46012 Conejo Creek Pancho Rd to Howard Rd	3260	5.54	17.02	**22.56**	1.90	0	0	0
46013 Conejo Creek Howard Rd to u/s end Sanitation Plant*	2240	1.66	1.56	**3.22**	13.35	0	0	0
46014 Conejo Creek u/s end WWTP to Hwy 101 + Gage	5560	7.01	13.25	**20.26**	15.93			
46015 Conejo Creek Hwy 101 to Mission Oaks Drain	5980	4.35	29.56	**33.91**	2.06	1.1	0	5
46016 Conejo Creek Mission Oaks Drain to Upland Drain	5090	5.72	20.03	**25.75**	11.87	1.9	0	11
45251 Honda Barr. Milligan Barranca to Center School Rd.	1050	0	1.80	**1.80**	2.69	0.6	0	4
45252 Honda Barranca Center School Rd. to Hwy 118	310	0.56	0.00	**0.56**	0.86	0.7	0	5
45101 Revolon Slough Hwy 1 to Las Posas Rd.	6870	17.31	0.00	**17.31**	0.00	3.7	3	5
45103 Revolon Slough Las Posas Rd. to Hueneme Rd.	8210	22.51	0.00	**22.51**	0.00	7.4	3	11
45105 Revolon Slough Hueneme Rd. to Wood Rd.	7940	20.49	0.00	**20.49**	0.00	7.6	3	12
46116 So. Branch Arroyo Conejo Chan Kimber to Maurice	1140	0.22	2.99	**3.21**	3.83	0	0	0
46074 Arroyo Santa Rosa Blanchard Rd Drain to Santa Rosa Rd.	2960	4.82	0.47	**5.29**	0.51			
SUBTOTALS	**138220**	**290.14**	**158.47**	**448.61**	**274.33**			

Channel Outlets								
47201 No. 2 Canyon Outlet to Arroyo Simi	1530	2.07	1.41	**3.48**	7.71	1.9	0	7
46076 Camrosa Drain Outlet to Conejo Creek & Gage	30	0.00	0.39	**0.39**	3.17	0.1	0	1
SUBTOTALS	**1,560**	**2.07**	**1.80**	**3.87**	**10.88**			
Dams and Basins								
45911 Coyote Debris Basin	510	0.92	1.68	**2.60**	5.76	13	2	41
45910 Fox Debris Basin	740	0.45	1.89	**2.34**	2.73	5.6	0	17
Mt. Sinai Debris and Detention Basins*	935	0.00	7.04	**7.04**	1.90			
So. Branch Arroyo Conejo Detention Basin	500	0.56	3.43	**3.99**	1.53			
SUBTOTALS	**2,685**	**1.93**	**14.04**	**15.97**	**11.92**			
Restoration Sites								
None								
Calleguas Creek Watershed GRAND TOTALS	**142,465**	**294.14**	**174.31**	**468.45**	**297.13**			
GRAND TOTAL ALL WATERSHEDS	**236,290**	**503.97**	**254.79**	**758.76**	**1,790.60**			

* Known or presumed occupied habitat adjacent to facility

** Designated critical habitat

HARD = FACILITY HARDSCAPE: access road, rock, concrete, compacted earth slopes, etc. with no habitat value

FAC HAB = FACILITY POTENTIAL HABITAT: Maintained facility areas with potential to support species (earth bottom, wet channels, etc.)

ADJ HAB = ADJACENT SUITABLE HABITAT: non-facility areas with suitable habitat for species adjacent to District facilities.

DAYS: Average annual work days, with low and high numbers of days for the period January 1, 2005 through December 27, 2011. If no data supplied, the facility was not analyzed.

Mitigation/Restoration Sites: not covered by other BOs or permits.

PT Codes: 20-28, 32-39, 40-49, PS41, PS42, 51-57, 68-87, 89, 92.

5.24.2012

Revised 6.27.2012

APPENDIX A. TABLE 4 – SOUTHWESTERN WILLOW FLYCATCHER

VENTURA RIVER WATERSHED FACILITIES	LENGTH FT	HARD	FAC HAB	TOTAL	ADJ HAB	DAYS	DAYS	DAYS
Levees	**Feet**	**Acres**	**Acres**	**Acres**	**Acres**	**Avg**	**Low**	**High**
41021 Casitas Springs Bank Protection	5,810	9.65	1.86	**11.51**	71.50	4.7	3	7
Note: includes 1.7 ac of existing willow riparian vegetation to be removed at toe upon issuance of permits.								
41011 Bank Protection/Levee (Ocean to Main St.)*	2,800	4.42	0.59	**5.01**	32.79	4.4	0	11
Note: incl. 1.09 acres of willow habitat removal within 630 linear feet of toe hardscape.								
41012 Bank Protection/Levee (Main St. to Hwy 33)*	10,115	23.20	0.00	**23.20**	91.39	12.3	7	21
SUBTOTALS	**18,725**	**37.27**	**2.45**	**39.72**	**195.68**			
Outlets to Ventura River								
41131 Canada de San Joaquin Channel and Outlet*	195	0.00	0.18	**0.18**	12.40			
41110 Stanley Ave. Drain Outlet*	440	0.00	0.62	**0.62**	12.95			
41121 Dent Drain Outlet*	180	0.00	0.46	**0.46**	9.01	0	0	0
41152 Canada Larga Channel & Outlet	240	0.28	0.00	**0.28**	1.17			
41181 Fresno Canyon Outlet to Ventura River*	220	0.00	0.22	**0.22**	11.23			
41721 Dent Secondary Outlet*	380	0.00	0.52	**0.52**	12.38			
41728 Cal-trans Secondary Outlet*	40	0.00	0.01	**0.01**	9.27			
41729 Peking Secondary & 41727 Harrison Secondary	1175	0.00	2.50	**2.50**	23.18	0.4	0	3
41730 Ramona St. Secondary Outlet*	240	0.00	0.39	**0.39**	10.78			
41731 Simpson St. Secondary Outlet*	375	0.00	0.77	**0.77**	17.03	0	0	0
41732 Vince St. Secondary Outlet*	200	0.00	0.19	**0.19**	7.81			
41751 Freeway Side Drain #1 Outlet*	270	0.00	0.37	**0.37**	12.46	0	0	0
41752 Freeway Side Drain #2 Outlet*	250	0.00	0.27	**0.27**	10.15			
41753 Freeway Side Drain #3 Outlet*	170	0.00	0.20	**0.20**	8.56	0	0	0
41754 Freeway Side Drain #4 Outlet*	395	0.00	0.52	**0.52**	10.81			
41755 Freeway Side Drain #5 Outlet*	50	0.05	0.00	**0.05**	8.57	0	0	0
SUBTOTALS	**4,820**	**0.33**	**7.22**	**7.55**	**177.76**			
Other Facilities								
41901 Matilija Dam and Gage Maintenance*	215	1.88	0.00	**1.88**	1.26	4.1	2	14
SUBTOTALS	**215**	**1.88**	**0.00**	**1.88**	**1.26**			

Stream Gages								
602 Matilija Creek at Matilija Hot Springs Stream Gage*	100	0.00	0.30	**0.30**	2.66	15	6	30
604 North Fork Matilija Creek at Hwy 33 Stream Gage	65	0.00	0.08	**0.08**	2.48	18	6	30
605 San Antonio Creek at Casitas Springs Stream Gage	100	0.00	0.33	**0.33**	6.03	12	6	30
608 Ventura River at Foster Park Stream Gage	100	0.00	0.85	**0.85**	7.69	11	6	30
ME-VR2 WQ Gage at Ventura River at OVSD Facility	150	0.00	0.10	**0.10**	5.46	10	5	20
SUBTOTALS	**515**	**0.00**	**1.66**	**1.66**	**24.32**			
Mitigation/Restoration Sites								
Lower Ventura River Giant Reed Removal Phase 1*	2,400	0.00	9.85	**9.85**	49.16	6	4	10
Lower Ventura River Giant Reed Removal Phase 2*	2,330	0.00	11.24	**11.24**	43.80	6	4	10
SUBTOTALS	**4,730**	**0.00**	**21.09**	**21.09**	**92.96**			
Ventura River Watershed GRAND TOTALS	**29,005**	**39.48**	**32.42**	**71.90**	**491.98**			

SANTA CLARA RIVER WATERSHED FACILITIES	LENGTH	HARD	FAC HAB	TOTAL	ADJ	DAYS	DAYS	DAYS
Levees and Bank Protection	**Feet**	**Acres**	**Acres**	**Acres**	**Acres**	**Avg**	**Low**	**High**
42012 Santa Clara River Harbor Blvd to Victoria Levee *	4000	6.95	0.00	**6.95**	54.15	0.3	0.0	1.0
42017 Santa Clara River Victoria Ave to Ventura Rd	7200	13.32	0.00	**13.32**	92.43			
42021 Santa Clara River 101 Fwy to South Mountain	24929	92.57	0.00	**92.57**	273.66	4.7	0.0	11.0
42025 Sudden Barranca to Saticoy Ave Levee*	2545	7.17	0.92	**8.09**	28.89	1.3	0.0	4.0
42026 Santa Clara River North Bank Groins*	1500	2.79	1.09	**3.88**	36.72			
42030 Santa Clara River Weir Field	n/a	1.85	0.78	**2.63**	30.34			
42036 Groins @ South Mtn Road*	1825	1.72	0.57	**2.29**	32.15	0.9	0.0	4.0
42037 Bardsdale Levee	3836	5.12	1.23	**6.35**	49.39			
43061 &43062 Santa Paula Creek Corps Project	9000	31.68	21.66	**53.34**	8.61			
SUBTOTALS	**54835**	**163.17**	**26.25**	**189.42**	**606.34**			

Outlets to Santa Clara River								
43161 Bardsdale Ditch Outlet	30	0	0.02	**0.02**	10.08			
43191 Basolo Ditch Outlet	30	0	0.05	**0.05**	10.90			
42511 Brown Barranca Outlet	30	0	0.05	**0.05**	10.93	0.6	0	2
42205 Central Ave. Drain Outlet	30	0	0.02	**0.02**	10.12	0.3	0	1
42491 Clark Barranca Outlet	30	0	0.07	**0.07**	8.96			
42391 El Rio Drain Outlet*	30	0	0.02	**0.02**	9.78	9.6	3	26
43051 Fagan Canyon Outlet	30	0	0.03	**0.03**	9.57			
42531 Franklin Barranca Outlet*	30	0	0.17	**0.17**	9.80			
43181 Grimes Canyon Outlet	30	0	0.03	**0.03**	10.67	5.6	0	21
42471 Harmon Barranca Outlet*	30	0	0.05	**0.05**	8.33			
42701 Montalvo Golf Course Secondary Outlet*	600	0.43	0.30	**0.73**	12.42	2	0	6
42461 Moon Ditch Outlet*	30	0	0.05	**0.05**	10.03	3.6	3	4
43041 Peck Road Drain Outlet*	30	0	0.02	**0.02**	10.12	1.4	0	3
43201 Pole Creek Outlet	30	0	0.01	**0.01**	13.35			
43251 Real Canyon Outlet	30	0	0.05	**0.05**	2.42			
42021 Stroube Drain Outlet*	200	0.07	0.21	**0.28**	12.71			
42501 Sudden Barranca Outlet*	30	0	0.02	**0.02**	9.48			
42704 Victoria Ave. Drain Secondary Outlet*	30	0	0.16	**0.16**	12.45	0.7	0	3
43701 Willard Road Secondary Outlet*	30	0	0.02	**0.02**	12.87			
SUBTOTALS	**1310**	**0.50**	**1.35**	**1.85**	**194.99**			
Mitigation/Restoration Sites								
SCR Upstream of Balcom Cyn Wash*	2000	0.00	15.57	**15.57**	38.31			
SCR So. Mountain Rd. Mitigation Site 1*	275	0.00	0.58	**0.58**	12.28			
SCR So. Mountain Rd. Mitigation Site 2*	270	0.00	0.50	**0.50**	12.86			
SUBTOTALS	**2545**	**0.00**	**16.65**	**16.65**	**63.45**			
Stream Gages								
723 Santa Clara River at Victoria Stream Gage*	100	0.00	0.88	**0.88**	29.88			
SUBTOTALS	**100**	**0.00**	**0.88**	**0.88**	**29.88**			
Santa Clara River Watershed GRAND TOTALS	**58,790**	**163.67**	**45.13**	**208.80**	**894.66**			

CALLEGUAS CREEK WATERSHED FACILITIES	LENGTH	HARD	FAC HAB	TOTAL	ADJ	DAYS	DAYS	DAYS
Channels	**Feet**	**Acres**	**Acres**	**Acres**	**Acres**	**Avg**	**Low**	**High**
45063 Arroyo Las Posas WWTP to S. Grimes Cyn	2800	7.49	12.66	**20.15**	14.06	0.3	0	2
47011 Arroyo Simi Hitch Blvd to Gabbert Cyn	2740	7.53	6.60	**14.13**	2.81	1.7	0	3
47012 Arroyo Simi Gabbert Cyn to Beltramo Rd	5790	10.16	4.67	**14.83**	14.47	0.1	0	1
47013 Arroyo Simi Beltramo Rd to Moorpark Rd (Spring St.)	7640	17.12	11.58	**28.70**	3.38	2.4	0	9
47014 Arroyo Simi Moorpark Rd. to SPRR	3525	12.93	7.69	**20.62**	4.84	0.3	0	1
47015 Arroyo Simi SPRR to No. 2 Canyon	2700	4.08	0.92	**5.00**	21.86			
47031 Arroyo Simi Parker Ranch to Lined Section	2410	1.23	1.67	**2.90**	4.52	0.3	0	1
46011 Conejo Creek: Calleguas Crk to Pancho Rd	3250	4.51	5.13	**9.64**	11.71	5.3	0	8
46012 Conejo Creek Pancho Rd to Howard Rd	3260	5.54	17.02	**22.56**	1.90	0	0	0
46013 Conejo Creek Howard Rd to u/s end Sanitation	2240	1.66	1.56	**3.22**	13.35	0	0	0
46014 Conejo Creek u/s end WWTP to Hwy 101 + Gage	5560	7.01	13.25	**20.26**	11.35			
SUBTOTALS	**41915**	**79.26**	**82.75**	**162.01**	**104.25**			
Channel Outlets								
47201 No. 2 Canyon Outlet to Arroyo Simi	1530	2.07	1.41	**3.48**	7.71	1.9	0	7
SUBTOTALS	**1,530**	**2.07**	**1.41**	**3.48**	**7.71**			
Dams and Basins								
None								
Stream Gages								
None								
Restoration Sites								
None								
Calleguas Creek Watershed GRAND TOTALS	**43,445**	**81.33**	**84.16**	**165.49**	**111.96**			
GRAND TOTAL ALL WATERSHEDS	**131,240**	**284.48**	**161.71**	**446.19**	**1,498.60**			

* Known or presumed occupied habitat adjacent to facility

HARD = FACILITY HARDSCAPE: access road, rock, concrete, compacted earth slopes, etc. with no habitat value

FAC POT = FACILITY POTENTIAL HABITAT: Maintained facility areas with potential to support species (earth bottom, wet channels, etc.)

ADJ HAB = ADJACENT SUITABLE HABITAT: non-facility areas with suitable habitat for species adjacent to District facilities.

DAYS: Average annual work days, with low and high numbers of days for the period January 1, 2005 through December 27, 2011. If no data supplied, the facility was not analyzed.

Mitigation/Restoration Sites: not covered by other BOs orpermits.

PT Codes: 20-28, 32-39, 40-49, PS41, PS42, 51-57, 68-87, 89, 92.

5.24.2012

Revised 6.27.2012

APPENDIX B

Table 1. Days worked at representative O&M Program facilities in habitat for least Bell's vireo between 2005 and 2011 (VCWPD 2012).

VENTURA RIVER WATERSHED FACILITIES	LENGTH FT	DAYS WORKED PER YEAR		
	Feet	Avg	Low	High
41021 Casitas Springs Bank Protection	5,810	4.7	3	7
41011 Bank Protection/Levee (Ocean to Main St.)*	2,800	4.4	0	11
41012 Bank Protection/Levee (Main St. to Hwy 33)*	10,115	12.3	7	21
41031 Live Oak Ac Bank Protect./Levee u/s Santa Ana Rd.*	4,640	3.7	1	8
41121 Dent Drain Outlet*	180	0	0	0
41729 Peking Secondary & 41727 Harrison Secondary Outlets*	1175	0.4	0	3
41901 Matilija Dam and Gage Maintenance*	215	4.1	2	14
602 Matilija Creek at Matilija Hot Springs Stream Gage*	100	15	6	30
604 North Fork Matilija Creek at Hwy 33 Stream Gage	65	18	6	30
605 San Antonio Creek at Casitas Springs Stream Gage	100	12	6	30
608 Ventura River at Foster Park Stream Gage	100	11	6	30
ME-VR2 WQ Gage at Ventura River at OVSD Facility	150	10	5	20
Lower Ventura River Giant Reed Removal Phase 1*	2,400	6	4	10
Lower Ventura River Giant Reed Removal Phase 2*	2,330	6	4	10
SANTA CLARA RIVER WATERSHED FACILITIES	**Feet**	**Avg**	**Low**	**High**
42012 Santa Clara River Harbor Blvd to Victoria Levee *	4000	0.3	0.0	1.0
42036 Groins @ South Mtn Road*	1825	0.9	0.0	4.0
42021 Santa Clara River 101 Fwy to South Mountain Levee*	24929	4.7	0.0	11.0
42025 Sudden Barranca to Saticoy Ave Levee*	2545	1.3	0.0	4.0
42511 Brown Barranca Outlet	30	0.6	0	2
42205 Central Ave. Drain Outlet	30	0.3	0	1
42391 El Rio Drain Outlet*	30	9.6	3	26
43181 Grimes Canyon Outlet	30	5.6	0	21
43361 Keefe Ditch Outlet to Sespe Creek	30	4.1	0	15
42701 Montalvo Golf Course Secondary Outlet*	600	2	0	6
42461 Moon Ditch Outlet*	30	3.6	3	4
43041 Peck Road Drain Outlet*	30	1.4	0	3
42704 Victoria Ave. Drain Secondary Outlet*	30	0.7	0	3
CALLEGUAS CREEK WATERSHED FACILITIES	**Feet**	**Avg**	**Low**	**High**
45021 Calleguas Creek Hwy 1 to Broome Ranch Crossing*	21120	14.3	0	24
45023 Calleguas Creek Broome Ranch to Hueneme Rd	8660	7.3	0	12
45025 Calleguas Creek Hueneme Rd to Lewis Rd	7670	2	0	5
45027 Calleguas Creek Lewis Rd to 850 ft u/s University Drive	2420	0.8	0	2
45037 Calleguas Creek Adolfo Rd to Seminary Rd.	2720	0.1	0	1
45051 Arroyo Las Posas @ Seminary	1500	0	0	0
45063 Arroyo Las Posas WWTP to S. Grimes Cyn	2800	0.3	0	2
47011 Arroyo Simi Hitch Blvd to Gabbert Cyn*	2740	1.7	0	3
47012 Arroyo Simi Gabbert Cyn to Beltramo Rd*	5790	0.1	0	1
47013 Arroyo Simi Beltramo Rd to Moorpark Rd (Spring St.)	7640	2.4	0	9
47014 Arroyo Simi Moorpark Rd. to SPRR	3525	0.3	0	1
47031 Arroyo Simi Parker Ranch to Lined Section	2410	0.3	0	1
47031 Arroyo Simi Tapo Cyn Rd to Parker Ranch	3750	0.3	0	1
45241 Beardsley Wash Drop Structure #2	100	0	0	0
45243 Beardsley Wash Drop Structure #3 @ Bella Vista	235	0.1	0	1
46015 Conejo Creek Hwy 101 to Mission Oaks Drain	5980	1.1	0	5
45247 Beardsley Wash Connelly Triple Arch	160	0	0	0
46011 Conejo Creek: Calleguas Crk to Pancho Rd	3250	5.3	0	8
46016 Conejo Creek Mission Oaks Drain to Upland Drain	5090	1.9	0	11
45251 Honda Barr. Milligan Barranca to Center School Rd.	1050	0.6	0	4
45252 Honda Barranca Center School Rd. to Hwy 118	310	0.7	0	5
45101 Revolon Slough Hwy 1 to Las Posas Rd.	6870	3.7	3	5
45103 Revolon Slough Las Posas Rd. to Hueneme Rd.	8210	7.4	3	11
46076 Camrosa Drain Outlet to Conejo Creek & Gage	30	0.1	0	1
47201 No. 2 Canyon Outlet to Arroyo Simi	1530	1.9	0	7
45910 Fox Debris Basin	740	5.6	0	17
45911 Coyote Debris Basin	510	13	2	41
Overall Average, Absolute Lowest, and Absolute Highest Days Worked		**4.0**	**0**	**41**

APPENDIX C

The Declining Amphibian Task Force Fieldwork Code of Practice

1. Remove mud, snails, algae, and other debris from nets, traps, boots, vehicle tires, and all other surfaces. Rinse cleaned items with sterilized (e.g., boiled or treated) water before leaving each study site.

2. Scrub boots, nets, traps, and other types of equipment used in the aquatic environment with 70 percent ethanol solution or a bleach solution of one-half to one cup of bleach in one gallon of water and rinse clean with sterilized water between study sites. Avoid cleaning equipment in the immediate vicinity of a pond, wetland, or riparian area.

3. In remote locations, clean all equipment with 70 percent ethanol or a bleach solution, and rinse with sterile water upon return to the lab or a "base camp." Elsewhere, when laundry facilities are available, remove nets from poles and wash (in a protective mesh laundry bag) with bleach on a "delicate" cycle.

4. When working at sites with known or suspected disease problems, or when sampling populations of rare or isolated species, wear disposable, non-latex, gloves and change them between handling each animal. Dedicate separate sets of nets, boots, traps, and other equipment to each site being visited. Clean and store them separately at the end of each field day.

5. Safely dispose of used cleaning materials and fluids. Do not dispose of cleaning materials and fluids in or near ponds, wetland, and riparian areas; if necessary, return them to the lab for proper disposal. Safely dispose of used disposable, non-latex, gloves in sealed bags.

6. When amphibians are collected, ensure the separation of animals from different sites and take great care to avoid indirect contact (e.g., via handling or reuse of containers) between them or with other captive animals. Do not expose animals to unsterilized vegetation or soils which have been taken from other sites. Always use disinfected and disposable husbandry equipment.

7. If a dead amphibian is found, place it in a sealable plastic bag and refrigerate (do not freeze). If any captured live amphibians appear unhealthy, retain each animal in a separate plastic container that allows air circulation and provides a moist environment from a damp sponge or sphagnum moss. For each collection of live or dead animals, record the date and time collected, location of collection, name of collector, condition of animal upon collection, and any other relevant environmental conditions observed at the time of collection. Immediately contact the Ventura Fish and Wildlife Office at (805) 644-1766 for further instructions.

The Fieldwork Code of Practice has been produced by the Declining Amphibian Populations Task Force with valuable assistance from Begona Arano, Andrew Cunningham, Tom Langton, Jamie Reaser, and Stan Sessions.

For further information on this Code, or on the Declining Amphibian Populations Task Force, contact John Wilkinson, Biology Department, the Open University, Walton Hall, Milton Keynes, MK7 6AA, UK.
Email: DAPTF@open.ac.uk

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, California 93003

IN REPLY REFER TO:
08EVEN00-2015-F-0055

October 19, 2015

Antal Szijj, Senior Project Manager
Department of the Army
Los Angeles District, Corps of Engineers
2151 Alessandro Drive, Suite 110
Ventura, California 93001

Subject: Reinitiated Biological Opinion for Ventura County Watershed Protection District's Routine Operation and Maintenance Program, Ventura County, California (8-8-15-F-7R)

Dear Mr. Szijj:

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion based on our review of the U.S. Army Corps of Engineers' (Corps) proposed issuance of a permit, pursuant to section 404 of the Clean Water Act, for the Ventura County Watershed Protection District's (District) routine operations and maintenance program (O&M Program). At issue are the effects of this action on the federally endangered tidewater goby (*Eucyclogobius newberryi*) and its critical habitat, least Bell's vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii extimus*) and its critical habitat, and the federally threatened California red-legged frog (*Rana draytonii*) and its critical habitat, and yellow-billed cuckoo (*Coccyzus americanus*), in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act) (16 U.S.C. 1531 *et seq.*). Your letter requesting reinitiation of formal consultation, dated August 26, 2014, was received by our office on August 28, 2014. On August 10, 2015, we received your letter via electronic mail amending your request to include western yellow-billed cuckoo.

This biological opinion is based on information which accompanied your August 26, 2014 and August 10, 2015 requests for reinitiation of formal consultation, as well as information associated with your original request for consultation, including the Final Environmental Impact Report (District 2008), Impact Analysis for Federally-listed Species (District 2010), Invasive Plant Removal Plan (District 2014), survey reports for listed species in the project area, site visit notes, correspondence between our staff and the District, and information in our files. We can make available a complete record of this consultation at the Ventura Fish and Wildlife Office.

Consultation History

On December 12, 2012 we issued a programmatic biological and conference opinion (8-8-11-F/C-12) to the Corps for the District's O&M Program and its effects on the endangered tidewater goby and its critical habitat, least Bell's vireo, southwestern willow flycatcher and its critical habitat, California

least tern (*Sterna antillarum browni*), arroyo toad (*Anaxyrus* californicus), Ventura marsh milk-vetch (*Astragalus pycnostachyus* var. *lanosissimus*), marsh sandwort (*Arenaria paludicola*), Gambel's watercress (*Nasturtium* [*Rorippa*] *gambellii*), and the federally threatened California red-legged frog (*Rana draytonii*) and its critical habitat, coastal California gnatcatcher (*Polioptila californica*) and its critical habitat, and the western snowy plover (*Charadrius nivosus nivosus*) and its critical habitat.

To accommodate the dynamic nature of the O&M Program, the consultation document is structured to provide a program-level assessment of effects to listed species and critical habitats, and is amended by the submittal of work plans outlining specific tasks as they are proposed to the Corps for authorization. To achieve this flexibility this document includes two components:
1) a program-wide concurrence for species and critical habitats that the Corps determined are not likely to be adversely affected by any aspect of the O&M Program; this concurrence concludes Section 7 consultation for this subset of species and critical habitat; and 2) a programmatic consultation and conference opinion for species or critical habitats that may be affected by one or more of the specific projects within the O&M Program; for this set of species a determination will be made by the Corps whether each project "may affect, and is likely to adversely affect" or "may affect, and is not likely to adversely affect" one or more of the covered species. A summary of how all of the species described above are covered by this document is shown in
Table 1.

Table 1. Summary table of species and critical habitats that are covered through the program-wide concurrence or are subject to the programmatic consultation.

Species	Corps Determination	Service Response
California red-legged frog	May affect, likely to adversely affect *or* not likely to adversely affect	**Programmatic Consultation**
California red-legged frog designated critical habitat	May affect, likely to adversely affect *or* not likely to adversely affect	
Least Bell's vireo	May affect, likely to adversely affect *or* not likely to adversely affect	
Southwestern willow flycatcher	May affect, likely to adversely affect *or* not likely to adversely affect	
Southwestern willow flycatcher proposed critical habtiat[1]	May affect, likely to adversely affect *or* not likely to adversely affect	
Tidewater goby	May affect, likely to adversely affect *or* not likely to adversely affect	
Tidewater goby designated critical habtiat	May affect, likely to adversely affect *or* not likely to adversely affect	
Coastal California gnatcatcher	May affect, not likely to adversely affect	**Program-wide Concurrence**
Coastal California gnatcatcher designated critical habitat	May affect, not likely to adversely affect	
Gambel's watercress	May affect, not likely to adversely affect	
Marsh sandwort	May affect, not likely to adversely affect	
California least tern	May affect, not likely to adversely affect	
Western snowy plover	May affect, not likely to adversely affect	
Western snowy plover critical habtiat	May affect, not likely to adversely affect	
Yellow-billed cuckoo	May affect, not likely to adversely affect	
Arroyo toad [2]	No effect	**No Response**
Ventura marsh milk-vetch[2]	No effect	

[1] The programmatic conference opinion converted to a biological opinion upon final designation of critical habitat for the southwestern willow flycatcher on January 3, 2013.

[2] The Corps and Service are not required to consult on "no effect" determinations.

On August 26, 2014 you requested reinitiation of the programmatic biological and conference opinion to allow large-scale restoration projects to be implemented and to analyze effects of the use of imazapyr herbicide in addition to glyphosate herbicide, which has already been evaluated in the December 12, 2012 biological opinion.

Effective November 3, 2014, the Western Distinct Population Segment of the yellow-billed cuckoo was listed as federally threatened.

On August 10, 2015, we received your determination that the O&M program may affect, but is not likely to adversely affect the yellow-billed cuckoo, and your request for our concurrence.

PROGRAM-WIDE CONCURRENCE

The program-wide concurrence for coastal California gnatcatcher and its critical habitat, Gambel's watercress, marsh sandwort, California least tern, and western snowy plover and it's critical habitat are described in the original consultation (8-8-11-F/C-12) and remain unchanged and is hereby incorporated by reference.

You determined that the O&M Program may affect, but is not likely to adversely affect the yellow-billed cuckoo. The yellow-billed cuckoo has been found in dense, mature riparian habitat within the Santa Clara River. There are recent records of its occurrence in areas near the District's facilities and restoration sites in the vicinity of Hedrick Ranch Nature Area and the South Mountain Road groins (near 34.3538° North; -119.0198° West). The yellow-billed cuckoo requires extensive contiguous patches of cottonwood-willow habitat for nesting, as described as follows in primary constituent element 1 of the proposed rule to designate yellow-billed cuckoo critical habitat (79 FR 48547):

> Riparian woodlands with mixed willow/cottonwood vegetation, mesquite-thorn forest vegetation, or a combination of these that contain habitat for nesting and foraging in contiguous or nearly contiguous patches that are greater than 325 ft (100 m) in width and 200 ac (81 ha) or more in extent. These habitat patches contain one or more nesting groves, which are generally willow-dominated, have above average canopy closure (greater than 70 percent), and have a cooler, more humid environment than the surrounding riparian and upland habitats.

Although nesting has not been documented within the past twenty years in Ventura County, the habitat in the vicinity of Hedrick Ranch Nature Area meets the criteria for nesting (described above). We anticipate that the yellow-billed cuckoos that have been observed in this area may use the habitat for nesting. Other riparian habitats within the Ventura River, Santa Clara River, and Calleguas Creek may be used by yellow-billed cuckoos for stop-over habitat during migration, but we do not anticipate these would support nesting.

District facilities covered under the O&M Program are predominantly located in areas that are frequently disturbed and do not contain the extensive, well-developed, habitat areas described above. Habitat restoration activities associated with the O&M Program may occur in suitable habitat; however, no restoration actions are currently proposed in or near cuckoo habitat in the foreseeable future with the exception of low-impact retreatment of previously conducted exotic vegetation removal projects. Where such habitat exists near covered facilities, existing minimization measures are incorporated into the O&M Program, and would ensure adverse indirect effects to yellow-billed cuckoos are avoided.

The following minimization measures for least Bell's vireo and southwestern willow flycatcher listed in the existing O&M Program Programmatic Biological Opinion are applicable to yellow-billed cuckoo:

• LBV-1: Prior to routine maintenance and repair activities performed during the period March 1 to September 15, a District biologist or consulting biologist will determine if suitable habitat is present for native breeding birds in or within 500 feet of the work area. Project activities will be postponed to September 15 if such habitat is present in the work area or within 500 feet of the work area, to the extent possible.

• LBV-2: In the event that operations and maintenance activities in suitable habitat for least Bell's vireo, or southwestern willow flycatcher, or yellow-billed cuckoo cannot be postponed until after the end of the breeding season (September 15), and if the activities involve the direct disturbance of habitat for these species (i.e., vegetation trimming or removal), the District will conduct surveys according to Service guidance to determine presence or absence of least Bell's vireos, southwestern willow flycatcher, and yellow-billed cuckoo. A modified survey protocol may be appropriate on a case-by-case basis and must be approved by the Service.

• LBV-3: If a least Bell's vireo, southwestern willow flycatcher, or yellow-billed cuckoo nest is detected within the project area during pre-project surveys, a Service-approved biologist will establish a buffer zone around the nest that they deem sufficient to avoid the abandonment of the nest by the adults. The Service generally recommends a minimum 500 foot buffer around nests where no work is to occur; however, a smaller buffer can be established if deemed protective by the Service-approved biologist and approved by the Service. The Service-approved biologist must monitor the nests during all O&M Program activities occur immediately adjacent to buffer zones to determine the effects of project activities on the nesting least Bell's vireos, southwestern willow flycatchers, and yellow-billed cuckoos. The Service-approved biologist will have the authority to stop work if deemed necessary to protect the nesting birds.

• LBV-4: For mitigation/restoration projects where non-native plant species are targeted for removal within suitable habitat for Least Bell's vireos, southwestern willow flycatchers, or yellow-billed cuckoos, native vegetation will be left in place to the maximum extent practical; willows (*Salix* sp.) and cottonwoods (*Populus* sp.) with a diameter at breast height of 8 inches or greater may be trimmed, but will be left in place.

We concur with your determination that the O&M Program may affect but is not likely to adversely affect the yellow-billed cuckoo based on the following:

- The only O&M Program area that may support nesting habitat for yellow-billed cuckoos is in the vicinity of Hedrick Ranch Nature area;
- The only O&M Program activities planned to occur in the vicinity of suitable nesting habitat are low-impact re-treatments of restoration areas (i.e., hand-crews removing giant reed (*Arundo donax*) resprouts);
- Protective measures will be implemented that we anticipate will avoid adverse effects to any nesting yellow-billed cuckoos that may be in the vicinity of O&M Program activities;
- We anticipate that O&M Program activities would have insignificant effects to yellow-billed cuckoos that may be migrating through the area because the portion of habitat affected by these activities at any given time is small and of low quality, being made up of primarily invasive plants, and non-breeding yellow-billed cuckoos can readily move to nearby unaffected and better quality habitat areas without the realistic potential to lead to adverse effects; and

- Large scale restoration associated with the O&M Program is anticipated to have beneficial long-term effects to yellow-billed cuckoos.

ADMINISTRATION OF THE PROGRAMMATIC BIOLOGICAL OPINION

The administration of the programmatic biological opinion will remain unchanged. As with all other actions subject to this programmatic consultation, the Corps will notify the Service of proposed restoration actions and provide project-specific details including:

- Location of the restoration project;
- Size of the restoration project;
- Restoration methods (including any herbicide use);
- Description of any proposed modifications to the Best Management Practices (BMPs) or minimization measures that appear in the original consultation (8-8-11-F/C-12);
- Species and critical habitats affected; and
- Determination of effects to listed species and critical habitats;

We will review the Corps' notification and respond in writing, or via email, to acknowledge that activities are being conducted under the programmatic biological opinion, and to notify the Corps of any concerns or questions regarding the proposed action, or if we feel that there would be effects that would necessitate a separate consultation. The tracking sheet attached in Appendix A can be used to facilitate this notification. The Service will strive to respond within 30 days, but will request an extension if additional processing time is necessary.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The description of the proposed action remains largely unchanged from the description in our previous consultation for the project (8-8-11-F/C-12), and is hereby incorporated by reference. Two aspects of the project have changed: 1) the amount of habitat restoration has increased; and 2) the use of imazapyr for invasive plant control is requested. No other aspects of the O&M Program have been altered and the minimization and avoidance measures remain the same.

The Corps and the District propose to implement restoration projects opportunistically within portions of the Ventura River, Santa Clara River, Ormond Lagoon, and Calleguas Creek that fall within Ventura County. The existing consultation (8-8-11-F/C-12) limits the amount of restoration or mitigation that can occur in any single year to 10 acres in the Ventura and Calleguas Creek watersheds and 15 acres in the Santa Clara River watershed. The Corps and the District propose to revise the authorized activities to allow for the implementation of larger scale restoration projects that may exceed the estimated acerages in the original programmatic biological opinion when funding and/or partnering with other conservation organizations provide such opportunities. The primary type of restoration that is envisioned to be implemented under this consultation is invasive plant removal targeting giant reed (*Arundo donax*), tree of heaven (*Ailanthus altissima*), castor bean (*Ricinus communis*), fennel (*Foeniculum vulgare*), and salt cedar (*Tamarisk sp.*), although other invasive plant species may be targeted as well.

The exact location, size, and timing of individual restoration projects that will be covered under this programmatic consultation are not known at this time; therefore, the effects of each of these projects considered together cannot be comprehensively determined in advance. For purposes of this consultation, we will assume that a maximum of 300 acres of restoration in each of the three major watersheds in Ventura County will be initiated in any given year. Additionally, we anticipate up to 24 acres of restoration in Ormond Lagoon may be initiated in any given year.

The analysis below represents our understanding of the general nature of effects that restoration projects will have on listed species and critical habitats. As new restoration projects are considered for coverage under this programmatic consultation, we will consider previous projects that have been covered by this programmatic consultation, current status of the overall riparian habitats, and the projected effects of the individual project at hand to determine whether the effects on whole are commensurate with the analysis herein.

Restoration methods - initial invasive vegetation removal

Restoration methods for controlling invasive plants, including herbicide control, are described below. These methods may be modified or combined to address site-specific conditions. Any modifications to these general methods will be described in project-specific documents.

Shredding/masticating
For areas with high cover (75-100 percent) of giant reed, small mechanized equipment can be used to shred the standing giant reed canes to near ground level as an initial treatment method. Shredded material would remain in situ. No soil disturbance or road grading would occur; no driving of equipment in flowing water would occur. No herbicide application would occur during or immediately after the shredding. No crossing of open water with shredding equipment would be allowed; driving the shredder over dry land would be allowed. All removed vegetation would be placed in containers or truck beds, or shredded directly into truck beds, to avoid attracting wildlife to waste piles.

Cut and Daub
To implement the cut and daub method, all live plant material would be cut with hand held equipment such as chain saws, loppers and power brush cutters to a maximum of six inches above grade level. Herbicide (Method A or B as appropriate) would then be applied to the freshly cut stalk cambium. For stalks emerging from surface water, the stalks would be cut about 6 inches above the water surface. The herbicide application would be completed within approximately two minutes of cutting and within six inches of grade (or surface water); it would comprise painting the cambium layer of the freshly cut stalks with a cloth-covered wand or a sponge in a manner that would maximize the stalks' herbicide absorption. Application of herbicides to the ground, open water, or to non-target vegetation will be avoided.

> *Method A*: For stalks emerging from surface water or within 25 feet of surface water, a solution of approximately 50 percent glyphosate, such as full strength Aquamaster®, would applied with a colorant to cut stems immediately (within 2 minutes) after cutting.

Method B: For treatment areas more than 25 feet from surface water, to the glyphosate-based herbicide and colorant solution used for Method A, imazapyr-based (29 percent) herbicide, such as Habitat® would be added. No surfactant is required with the cut and daub application method.

Spray only
With this method, approved herbicides would be sprayed directly onto standing giant reed leaves and stems, either using backpack sprayers or vehicle-mounted spray tanks. This method has been shown to be effective in areas where leaving dying and dead giant reed stems is appropriate (e.g., in areas with low giant reed cover and/or where dead material will not increase fire risks) (Lambert and Dudley 2012).

Bend-and-spray
The bend-and-spray method involves physically bending giant reed stems away from native vegetation and spraying the bent stems with an approved herbicide. The sprayed stems would be left in place for 5 to 6 months. This method minimizes the risk of herbicide application to non-target vegetation and is one of the most suitable methods for remotely located, small- to moderately-sized infestations with interspersed native vegetation.

Chipping
For projects that involve chipping, cut giant reed would be transported to designated staging areas for chipping. Cut plant material would be placed in haul trucks which would park at points along existing access roads that provide the closest vehicular access to the targeted removal sites.

Restoration Methods - monitoring and re-treatment

Following the initial removal of invasive plants, monitoring and multiple re-treatments are often necessary in order to prevent the species from recolonizing the restoration area. Monitoring generally occurs over a period between 3-5 years after initial removal. The number, timing, and exact method of re-treatments would depend on project-specific requirements. Re-treatments may be necessary during any time of the year and often involve the use of herbicide applied by small work crews.

ANALYTICAL FRAMEWORK FOR THE JEOPARDY AND ADVERSE MODIFICATION DETERMINATIONS

Jeopardy Determination

Section 7(a)(2) of the Endangered Species Act requires that Federal agencies ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of listed species. "Jeopardize the continued existence of" means "to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species" (50 CFR 402.02).

The jeopardy analysis in this biological opinion relies on four components: (1) the Status of the Species, which describes the range-wide condition of the tidewater goby, California red-legged frog, least Bell's vireo, and southwestern willow flycatcher, the factors responsible for that condition, and its survival and recovery needs; (2) the Environmental Baseline, which analyzes the condition of the tidewater goby, California red-legged frog, least Bell's vireo, and southwestern willow flycatcher in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of the tidewater goby, California red-legged frog, least Bell's vireo, and southwestern willow flycatcher; (3) the Effects of the Action, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated or interdependent activities on the tidewater goby, California red-legged frog, least Bell's vireo, and southwestern willow flycatcher; and (4) the Cumulative Effects, which evaluates the effects of future, non-Federal activities, that are reasonably certain to occur in the action area, on the tidewater goby, California red-legged frog, least Bell's vireo, and southwestern willow flycatcher.

In accordance with policy and regulation, the jeopardy determination is made by evaluating the effects of the proposed federal action in the context of the current status of the tidewater goby, California red-legged frog, least Bell's vireo, and southwestern willow flycatcher, taking into account any cumulative effects, to determine if implementation of the proposed action is likely to reduce appreciably the likelihood of both the survival and recovery of the tidewater goby, California red-legged frog, least Bell's vireo, and southwestern willow flycatcher in the wild by reducing the reproduction, numbers, and distribution of that species.

Adverse Modification Determination

Section 7(a)(2) of the Endangered Species Act requires that Federal agencies ensure that any action they authorize, fund, or carry out is not likely to result in the destruction or adverse modification of designated critical habitat. This biological opinion does not rely on the regulatory definition of "destruction or adverse modification" of critical habitat at 50 CFR 402.02. Instead, we have relied on the statutory provisions of the Act to complete the analysis with respect to critical habitat.

In accordance with policy and regulation, the adverse modification analysis in this biological opinion relies on four components: (1) the Status of Critical Habitat, which describes the range-wide condition of designated critical habitat for the tidewater goby, California red-legged frog and southwestern willow flycatcher in terms of primary constituent elements (PCEs), the factors responsible for that condition, and the intended recovery function of the critical habitat overall; (2) the Environmental Baseline, which analyzes the condition of the critical habitat in the action area, the factors responsible for that condition, and the recovery role of the critical habitat in the action area; (3) the Effects of the Action, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated and interdependent activities on the PCEs and how that will influence the recovery role of the affected critical habitat units; and (4) Cumulative Effects, which evaluates the effects of future non-Federal activities, that are reasonably certain to occur in the action area, on the PCEs and how that will influence the recovery role of affected critical habitat units.

For purposes of the adverse modification determination, the effects of the proposed Federal action on the critical habitat of the tidewater goby, California red-legged frog and southwestern willow flycatcher are evaluated in the context of the range-wide condition of the critical habitat, taking into

account any cumulative effects, to determine if the critical habitat range-wide would remain functional (or would retain the current ability for the PCEs to be functionally established in areas of currently unsuitable but capable habitat) to serve its intended recovery role for the tidewater goby, California red-legged frog and southwestern willow flycatcher.

STATUS OF THE SPECIES AND ITS CRITICAL HABITAT

The status of the tidewater goby and its critical habitat, California red-legged frog and its critical habitat, least Bell's vireo, and southwestern willow flycatcher and its critical habitat remains unchanged from the description in our previous consultation (8-8-11-F/C-12), and is hereby incorporated by reference. On February 4, 2013 and March 8, 2013 respectively, the designation of critical habitat for the southwestern willow flycatcher and tidewater goby took effect. The sections of the previous consultation that described southwestern willow flycatcher and tidewater goby proposed critical habitat, which were included in the consultation as a conference opinions, are now in effect as part of the biological opinion.

ENVIRONMENTAL BASELINE

The environmental baseline, including the action area, remains unchanged from the description in our previous consultation (8-8-11-F/C-12), and is hereby incorporated by reference.

EFFECTS OF THE ACTION

The effects of the action for all program activities described in the previous consultation (8-8-11-F/C-12) remain unchanged and are hereby incorporated by reference. The sections below describe the effects associated with the additional program components that are the subject of this reinitiated consultation including large-scale restoration, and the use of imazapyr herbicide in addition to glyphosate herbicide. Effects of glyphosate on the tidewater goby and its critical habitat, the California red-legged frog and its critical habitat, the least Bell's vireo and southwestern willow flycatchers and their critical habitat, were discussed in the previous consultation (8-8-11-F/C-12) but are revisited in the sections below due the proposed use of this product in large-scale restoration.

The exact location, size, and timing of individual restoration projects that will be covered under this programmatic consultation are not known at this time. For purposes of this analysis we anticipate that up to 300 acres of restoration may be initiated in each of the three major Ventura County watersheds in any given year. The analysis below represents our understanding of the general nature of effects that individual restoration projects will have on listed species and critical habitats. As new restoration projects are considered for coverage under this programmatic consultation, we will consider previous projects that have been covered by this programmatic consultation, the status of the riparian habitat, and the projected effects of the individual project at hand to determine whether the effects on whole are commensurate with the analysis herein.

Environmental Fate and Ecological Toxicity of Glyphosate and Imazapyr

This section contains general information about the environmental fate and ecological toxicity of glyphosate and imazapyr, which is applicable to all species covered in this biological opinion. Detailed analysis regarding the specific anticipated effects of these herbicides on each of the species and critical habitats subject to this programmatic biological opinion is found in the following sections dedicated to each species and critical habitat.

Glyphosate is a systemic herbicide that kills broadleaf and grass species by inhibiting the production of aromatic amino acids in plants and some microorganisms that are necessary to build proteins (Devine et al. 1993). Because many animals lack the amino acid synthesis pathway that glyphosate disrupts, it is considered to have low potential to cause toxicity in animals (Devine et al. 1993). The half-life of glyphosate in pond water ranges between 12 days and 10 weeks depending on environmental conditions (Extoxnet 1996); however, the half-life in brackish or saline water may be different. The potential for the compound to build up in the tissues of aquatic invertebrates or other aquatic organisms is considered very low (Extoxnet 1996).

Many glyphosate products are formulated to contain surfactants that allow the active ingredients to spread over and penetrate the plant cuticles. Surfactants can be the most toxic portion of a pesticide product. The glyphosate used in aquatic areas during all restoration activities would be formulated without a surfactant. When a surfactant is absolutely necessary, the product Agri-dex by Helena Chemicals would be used (BMP-9 of the original consultation), and has been approved for aquatic applications due to its low toxicity.

The mode of action of Imazapyr is similar to glyphosate. Imazapyr is a broad-spectrum herbicide that is effective for the treatment of pre-emergent or post-emergent grasses and broadleaf plants. Imazapyr acts as an enzyme inhibitor in plants, disrupting the biosynthesis of the three branched-chain aliphatic amino acids valine, leucine, and isoleucine, which are produced in plants but not in animals. Because animals receive these animo acids from their diet as opposed to synthesizing them, the enzyme inhibition that imazapyr causes is not generally relevant to birds, mammals, fish or invertebrates (Pless 2005, WSDA 2009). Field studies conducted with imazapyr demonstrate that it degrades rapidly in water, and no detectable residues were found in water or sediment within two months (Pless 2005). Degradation of imazapyr in soil depends on environmental conditions, with an average half-life between one and five months (Tu *et al.* 2004). Imazapyr does not appreciably bioaccumulate and does not bioconcentrate (USEPA 2007).

Imazapyr may be actively exuded from the roots of legumes (such as mesquite), likely as a defense mechanism by those plants. This exudate may move via intertwined root grafts to nearby vegetation and may therefore adversely affect the surrounding desirable plant species with little to no control of the target species (Tu *et al.* 2004).

In a review of pesticide ecotoxicity (Service 2007), the Service classifies glyphosate and aquatic formulations of imazapyr as Class 0 pesticides for ecotoxicity to small avian species, cold water fish, warm water fish, terrestrial amphibians, and aquatic amphibians. Based on the results of this screening-level hazard assessment, the Service considers glyphosate and imazapyr pesticides to be practically nontoxic to these receptors, and that these pesticides do not require additional protection measures. No information was found that describes the toxicity of the combined use of glyphosate

and imazapyr, as toxicity studies are generally designed to identify effect to an individual organism from exposure to one chemical.

Effects of the Proposed Action on the Tidewater goby

Large-scale restoration - initial invasive vegetation removal
Restoration projects would target plant species that occur predominantly outside of suitable habitat for tidewater gobies, however there is the potential for tidewater gobies to be present in small areas along the edges of restoration sites where invasive plants occur near the estuaries of the Ventura River, Santa Clara River, Ormond Lagoon and Calleguas Creek. The Corps and the District propose to minimize the chance of crushing tidewater gobies and their eggs by keeping shredding equipment out of wetted habitats and minimizing foot traffic in wetted areas suitable for tidewater gobies. We anticipate that some personnel will need to travel on foot through wetlands occupied by tidewater gobies during initial treatments. Adult tidewater gobies may move out of the area disturbed by work crews. Some tidewater gobies may remain in the disturbed area, along with eggs and larval tidewater gobies, which may be crushed by foot traffic.

Herbicides that are applied to invasive plant treatment areas within or adjacent to tidewater goby habitat have the potential to wash or drift into waters that are occupied by tidewater gobies. The herbicides proposed for use during restoration activities contain the active ingredients glyphosate and imazapyr.

No information is available regarding the toxicity of glyphosate products specifically to tidewater goby. Acute toxicity studies on bluegill sunfish (*Lepomis macrochirus*) and rainbow trout (*Oncorhynchus mykiss*) indicate that Aquamaster herbicide, which uses glyphosate as the active ingredient and does not contain a surfactant, is practically non-toxic (i.e., LC 50 value >100 miligrams per liter (mg/L)) to these species (Monsanto 2005). For chronic life-cycle exposures, the "no observable effects concentration" measured in fathead minnows was 25.7 mg/L (Durkin 2010). The concentration of glyphosate that would be used in restoration projects would not exceed the maximum allowable application rate of 8 pounds per acre. At this application rate, with full strength Aquamaster applied directly to water that is one-foot deep, the maximum concentration of glyphosate would be 3 mg/L. This is substantially lower than the chronic and acute toxicity thresholds for various fish species that act as suitable surrogates for the tidewater goby. For the purposes of this project, glyphosate will be applied with a cut and daub method in habitats that are suitable for tidewater gobies, and will generally not be applied at the maximum allowable application rate, therefore the chance of toxicity to tidewater gobies from glyphosate use is very low.

No information is available regarding the toxicity of imazapyr products specifically to tidewater goby. Acute freshwater toxicity studies on rainbow trout (*Oncorhynchus mykiss*), Bluegill sunfish (*Lepomis macrochirus*), and channel catfish (*Ictalurus punctatus*) demonstrated that full strength (93 percent active ingredient) imazapyr was practically non-toxic (i.e., LC50 > 100 mg/L for each species tested) (USEPA 2007). A recent study from a tidal estuary in Washington showed that imazapyr, even when supplied at concentrations up to 1600 mg/L, did not affect the osmoregulatory capacity of Chinook salmon smolts (Patten 2003 as cited by Tu *et al.* 2004). The "no observed adverse effect concentration" for chronic toxicity in rainbow trout is 43.1 mg/L (USEPA 2007). The concentration of imazapyr that would be used in restoration projects would not exceed the maximum allowable application rate of 1.5 pounds per acre. At this application rate, with full strength

imazapyr applied directly to water that is one-foot deep, the maximum concentration of imazapyr would be 0.6 mg/L. This is substantially lower than the chronic and acute toxicity thresholds for various fish species that act as suitable surrogates for the tidewater goby. For the purposes of this project, imazapyr would not be used within 25 feet of open water, and will generally not be applied at full strength and at the maximum allowable application rate, therefore the chance of toxicity to tidewater gobies from imazapyr use is very low.

Removing invasive vegetation may cause the soils in the treatment area to be more easily mobilized during storm events, causing increased sedimentation into tidewater goby habitat. Sedimentation may result in tidewater goby injury, death, and lowered breeding success. Sediment may affect tidewater gobies by impairing the efficiency of their gill filaments and exposing them to higher salinities and/or predation as they flee downstream. Direct effects of sedimentation include mortality, reduced physiological function, and burrow smothering. Indirect effects of sedimentation include potential alteration to the food web which could create cascading effects to higher trophic levels. A reduction in phytoplankton can be attributed to increased turbidity, which can therefore reduce zooplankton, in turn reducing benthic macroinvertebrates, and thus reducing prey available to tidewater gobies (Henley et al. 2000). Any increase in sedimentation would be minor and temporary, because no new sediment sources are being added to the area, and native vegetation re-growth would replace any soil stabilization role that the invasive species were fulfilling.

Monitoring and maintenance
Following the initial removal of invasive plant species, follow-up monitoring and maintenance is necessary to identify and treat re-sprouting invasive plants. Monitoring and maintenance personnel may enter wetted habitats that are suitable for tidewater goby and may injure or kill tidewater gobies and their eggs. We anticipate that any area subject to large scale restoration will be maintained free of giant reed following the completion of the project, that the greatest disturbance to tidewater gobies would occur in the first year an area is treated, and that impacts will be much less in subsequent years.

The herbicides glyphosate and imazapyr may be used in follow-up treatments, likely in lower amounts than necessary for the initial control. As described above, the toxicity of these herbicides to fish species is very low, and we do not anticipate that tidewater gobies would be injured or killed due to herbicide exposure.

Number of tidewater gobies affected
We anticipate that less than 20 percent of tidewater goby potential habitat within each Ventura County estuary would be subject to large scale restoration projects and associated monitoring and maintenance in any given year. Table 2 summarizes the total potential habitat in each estuary along with the maximum number of acres that would be affected. As described in the original consultation, habitat that is considered potentially suitable includes lower watershed areas that may be inundated and support vegetation during various times of the year or as estuary morphology changes. Not all potentially suitable habitat is suitable at all times, and not all suitable habitat is occupied at all times.

Because the population of tidewater gobies in each estuary fluctuates throughout the year and between years, we cannot predict the exact number that may be injured or killed by the O&M Program activities described above. Within the 20 percent of potential tidewater goby habitat that may be affected each year, we anticipate worker traffic traveling through the area will affect a

smaller footprint, because giant reed occurs in patches within these areas and because some of the patches can be treated from the banks and from dry habitat areas. Adult tidewater gobies are highly mobile; however, eggs and larvae that reside within burrows in the sediment may be crushed by these workers walking through the project area as described above. We anticipate that the number of individuals injured or killed by these workers would be small in comparison to the overall population of tidewater gobies at each site.

Table 2. Total potential tidewater goby habitat and maximum area affected by large scale restoration projects.

	Total potential habitat (Acres)	Maximum area affected annually (Acres)
Ventura River	202	40
Santa Clara River	532	106
Ormond Lagoon	121	24
Calleguas Creek	677	135
TOTAL	1,532	305

Recovery of the tidewater goby

The goal of the tidewater goby recovery plan is to conserve and recover the tidewater goby throughout its range by managing threats and perpetuating viable metapopulations within each recovery unit while maintaining morphological and genetic adaptations to regional and local environmental conditions. We do not expect large scale habitat restoration or the use of glyphosate and imazapyr herbicides to substantially affect the conservation of the tidewater goby within the Los Angeles/Ventura Recovery Unit, in terms of the recovery strategy described in the recovery plan because:

1. The tidewater goby recovery plan emphasizes the importance of the conservation of population units rather than individual fish, and the effects of restoration actions are not expected to cause population-level declines in the Ventura River, Santa Clara River, Ormond Lagoon or Calleguas Creek; and

2. The O&M Program would not disrupt the metapopulation dynamics between each individual population in the Los Angeles/Ventura Recovery Unit.

Summary of effects to tidewater goby

In summary, the proposed action could adversely affect all lifestages of tidewater goby that occur within the Ventura River, Santa Clara River, Ormond Lagoon, and Calleguas Creek by workers crushing tidewater gobies and increased sedimentation. Based on the toxicity data available, we conclude that the proposed use of glyphosate and imazapyr would not injure or kill any tidewater gobies. The number of tidewater gobies in each estuary that could be affected by the proposed projects is low in comparison to the overall population in each estuary. We expect the effects would be temporary and minor, and do not anticipate the effects would cause local extirpation of the species. We conclude that large scale restoration involving the use of imazapyr and glyphosate herbicide would not compromise the recovery of the tidewater goby, and may ultimately improve the quality of the species' habitat.

Effects of the Proposed Action on Tidewater goby critical habitat

Restoration activities may occur within or adjacent to tidewater goby designated critical habitat units VEN-1, VEN-2, VEN-3 or VEN-4. Critical habitat may be affected by the removal of emergent aquatic vegetation and through temporary increases in sedimentation that may follow the removal of invasive vegetation. Table 2 lists the amount of tidewater goby critical habitat that we anticipate may be affected in any given year, based on assumptions of the maximum amount of tidewater goby habitat that may be subject to large scale restoration (described above).

Table 3. Tidewater goby critical habitat units that may be affected by large scale restoration.

Unit	Location	Critical Habitat (acres)	Maximum area affected annually (acres)
VEN-1	Ventura River	50.3	40
VEN-2	Santa Clara River	322.1	106
VEN-3	Ormond Lagoon	121.0	24

Only non-native plant species will be targeted for removal, and native vegetation will be left in place. Nevertheless, this decrease in emergent aquatic vegetation may adversely affect the primary constituent element specific to providing protection from predators and high flow events. We anticipate that native vegetation will recolonize a majority of the restoration area within 1 year. Within this 1-year period, we anticipate existing native vegetation will provide adequate protection for predators and high flows.

Increased sedimentation may adversely affect the primary constituent element specific to tidewater goby habitat that concerns substrates suitable for the construction of burrows for reproduction. If fine-grained substrates are mobilized through the removal of invasive vegetation and deposited in critical habitat for tidewater goby, suitable substrates may be covered up or otherwise become less available. The quantity of sediment that may be mobilized through projects authorized under this programmatic consultation cannot be estimated, but any increase in sedimentation is anticipated to be minor and temporary because no new sediment sources are being added to the area, and native vegetation re-growth is anticipated to replace any soil stabilization role that the invasive species were fulfilling.

In summary, large scale restoration activities may adversely affect the primary constituent elements that deal with substrate and vegetation. These effects are anticipated to be temporary and minor, and are not anticipated to disrupt the function of the critical habitat units where the activities would occur.

Effects of the Proposed Action on the California red-legged frogs

Large-scale restoration - initial invasive vegetation removal
As described in the Environmental Baseline section, California red-legged frogs may be present within restoration areas of the Ventura River watershed only, the species is not know to occur within the Santa Clara River, Ormond Lagoon, or Calleguas Creek watersheds within Ventura County.

California red-legged frogs may be directly injured or killed during initial invasive vegetation removal activities when workers and equipment are present in occupied habitat. The Corps and the

District propose to survey the project area daily prior to conducting activities that could injure or kill California red-legged frogs (minimization measure CRLF-1). Any California red-legged frogs that are identified and could be injured or killed by project activities would be relocated to a nearby suitable habitat. As the species is cryptic and can be difficult to detect during surveys, California red-legged frogs may still be present within the project area while restoration activities are occurring, despite efforts to relocate them. California red-legged frogs may be injured or killed by shredding/masticating equipment, and may be trampled by foot traffic or other equipment.

The Corps and the District propose to place all removed vegetation directly in storage containers or truck beds to avoid creating waste piles that may be an attractive nuisance for California red-legged frogs.

Herbicides that are applied to invasive plant treatment areas within or adjacent to California red-legged frog habitat have the potential to come in contact with California red-legged frogs through direct dermal exposure in their terrestrial or aquatic habitats. The herbicides proposed for use during restoration activities contain the active ingredients glyphosate and imazapyr.

California red-legged frog eggs, tadpoles, juveniles and adults can be exposed to glyphosate products in aquatic habitats through direct overspray of wetlands, drift from treated areas, or contaminated runoff from treated areas. The half-life of glyphosate in pond water ranges between 12 days and 10 weeks (Extoxnet 1996). Additionally, juvenile and adult California red-legged frogs can be exposed in terrestrial habitats that have been treated. Glyphosate readily sorbs to soil particles and can be degraded by microbes in 7 to 70 days depending on soil conditions (Giesy et al. 2000).

No information is available regarding the toxicity of glyphosate products specifically to California red-legged frogs. Studies exploring the lethal and sublethal effects of glyphosate products on other amphibians, including ranids, are available but are largely focused on aquatic stages of the species and formulations of glyphosate that include surfactants. Several studies suggest that the toxicity of glyphosate products is linked with the surfactant, and not the glyphosate. Howe et al. (2004) compared the toxicity of glyphosate alone, to glyphosate with POEA surfactant, and POEA alone, on green frogs. Results indicated that the toxicity of glyphosate with POEA surfactant was similar to the POEA surfactant alone, which was much greater than glyphosate alone, indicating that the POEA was responsible for the toxic effects. In a comprehensive review of studies involving the effects of glyphosate on amphibians Govindarajulu (2008) concluded that the toxic effect of glyphosate products containing POEA are due to the POEA rather than the active glyphosate ingredient.

In the absence of robust toxicity data for amphibians in aquatic habitats, USEPA uses fish toxicity as a surrogate. In a 2008 study, USEPA compiled toxicity studies for technical glyphosate (formulated without a surfactant) that were deemed suitable to act as surrogates for California red-legged frogs. Results ranged from practically nontoxic to slightly toxic with the lowest (most conservative) acute toxicity LC50 value of 43 mg active ingredient per liter (mg/L), and the lowest no observed adverse effect concentration was 30.6 mg/L (USEPA 2008). The concentration of glyphosate that would be used in restoration projects would not exceed the maximum allowable application rate of 8 pounds per acre. At this application rate, with full strength Aquamaster applied directly to water that is one-foot deep, the maximum concentration of glyphosate would be 3 mg/L. This is substantially lower than the toxicity thresholds for various fish species that act as suitable surrogates for California red-legged frogs in their aquatic habitat. For the purposes of this project, glyphosate will not be applied

directly to water, and would generally not be applied at the maximum allowable application rate, therefore the likelihood of toxicity to California red-legged frogs from glyphosate use in their aquatic habitat is very low.

Glyphosate toxicity data for California red-legged frogs or other amphibians that inhabit terrestrial environments is also lacking. USEPA uses toxicity data from avian receptors as a surrogate for California red-legged frogs in terrestrial environments (USEPA 2008). USEPA compiled toxicity data for technical glyphosate (formulated without a surfactant) that were deemed suitable to act as surrogates for California red-legged frogs (USEPA 2008). These studies showed that glyphosate is slightly toxic to the selected avian species with the lowest LD50 value reported as ingestion of greater than 3,196 milligrams of active ingredient per kilogram of body weight (USEPA 2008), although no mortalities occurred in any of the studies so this number is likely to be strongly conservative. Based on these conservative numbers, USEPA used a modeling approach to further understand risk to California red-legged frogs from glyphosate exposure in terrestrial habitats. USEPA determined that California red-legged frogs may be at risk of some toxic effects if glyphosate is applied at an application rate of 5.5 pounds per acre. At the maximum-allowable application rate of 8 pounds per acre for Aquamaster, the potential exists for red-legged frogs to be adversely affected in terrestrial environments, although this conclusion appears to be highly conservative. The Corps and the District propose to minimize this effect by conducting biological surveys and relocating California red-legged frogs out of areas that would be treated.

As with glyphosate, California red-legged frog eggs, tadpoles, juveniles and adults can be exposed to imazapyr products in aquatic habitats through direct overspray of wetlands, drift from treated areas, or contaminated runoff from treated areas. Imazapyr quickly photodegrades in aqueous solutions with a half-life between 3 and 5 days (Tu *et al.* 2001, Durkin and Fallonsbee 2004 as cited by Service 2012). Additionally, juvenile and adult California red-legged frogs can be exposed in terrestrial habitats that have been treated. The half-life of Imazapyr in soil ranges from one to five months (Tu *et al.* 2001).

No information is available regarding the toxicity of imazapyr products specifically to California red-legged frogs or other similar amphibian species. In the absence of robust toxicity data for amphibians in aquatic habitats, USEPA uses fish toxicity as a surrogate. Acute freshwater toxicity studies on rainbow trout, bluegill sunfish, and channel catfish demonstrated that full strength (93 percent active ingredient) imazapyr was practically non-toxic (i.e., LC50 > 100 mg/L for each species tested) (USEPA 2007). The "no observed adverse effect concentration" for chronic toxicity in rainbow trout is 43.1 mg/L (USEPA 2007). The concentration of imazapyr that would be used in restoration projects would not exceed the maximum allowable application rate of 1.5 pounds per acre. At this application rate, with full strength imazapyr applied directly to water that is one-foot deep, the maximum concentration of imazapyr would be 0.6 mg/L. This is substantially lower than the chronic and acute toxicity thresholds for various fish species that act as suitable surrogates for the California red-legged frog. For the purposes of this project, imazapyr will not be applied within 25 feet of water, and will generally not be applied at full strength nor at the maximum allowable application rate, therefore the likelihood of toxicity effects to California red-legged frogs from imazapyr use is very low.

Imazapyr toxicity data for California red-legged frogs or other amphibians that inhabit terrestrial environments is also lacking. USEPA uses toxicity data from avian receptors as a surrogate for

California red-legged frogs in terrestrial environments (USEPA 2008). USEPA compiled acute and chronic toxicity data for avian species to assess the potential direct effects to California red-legged frogs. Results showed that imazapyr is practically non-toxic to the selected avian receptors with acute LD50 values greater than 2,150 miligrams of active ingredient per kilogram, and the lowest chronic no observed adverse effect concentration was 1,670 miligrams active ingredient per kilogram (USEPA 2007). No treatment-related sublethal effects were observed during the acute or chronic exposures (USEPA 2007). Based on their analyses, USEPA determined that the use of imazapyr in accordance with the label has no direct acute or chronic effects on aquatic or terrestrial phase California red-legged frogs (USEPA 2007).

Monitoring and maintenance
Following the initial removal of invasive plant species, follow-up monitoring and maintenance is necessary to identify and treat re-sprouting invasive plants. California red-legged frogs may be injured or killed by foot or equipment traffic present in the project area during monitoring and maintenance activities. The herbicides glyphosate and imazapyr may be used in follow-up treatments, likely in lower amounts than necessary for the initial control. Effects from the use of these herbicides are described in the sections above. The Corps and the District propose to minimize effects to California red-legged frogs from monitoring and maintenance activities by conducting surveys and relocating California red-legged frogs when necessary to avoid injury or death.

Number of California red-legged frogs affected
Large-scale restoration projects may occur throughout the riparian corridors of the Ventura River watershed, which have varying quality of habitat and usage by California red-legged frogs. California red-legged frogs are known to breed, forage, shelter, and disperse through the Ventura River watershed. Based on the records of California red-legged frogs in the Ventura River, we anticipate approximately 10 California red-legged frogs may be present per acre of wetted habitat (as described in the original biological opinion). California red-legged frogs are most likely to occur along freshwater wetland areas of the Ventura River, which represents a smaller subset of the overall restoration footprint in any given year. For purposes of this consultation, we estimate that 5 percent of each large-scale restoration project in the Ventura River would include wetted areas that are most suitable for California red-legged frogs. Based on this estimate of California red-legged frog population density, we expect that up to 150 California red-legged frogs may be affected by large-scale restoration each year.

Of the 150 California red-legged frogs that may be affected by large-scale restoration, we anticipate that only a small portion of these would be injured or killed. California red-legged frogs within the restoration footprint will only be captured and relocated if deemed necessary to avoid injuring or killing the animal (many areas within the overall restoration footprint will not actually require invasive plant removal and treatment). Of the California red-legged frogs that are relocated, a small number may be injured during relocation, and a small number may be injured or killed by attempting to travel back to the site where they were captured. Individuals that escape detection may be injured or killed by foot or equipment traffic. A substantial portion of the California red-legged frogs that are present in the restoration area are anticipated to be successfully identified and relocated without being injured or killed. For purposes of this consultation, we anticipate that 20 percent of individuals in the project footprint may be relocated (that is, identified and deemed necessary to move), representing up to 30 individuals. Furthermore, we anticipate that of the 80 percent (or up to 120 frogs) that either go undetected or are not deemed necessary to move in the restoration area, 1

percent may be injured or killed by workers and equipment in the project area, representing 2 individuals.

Recovery of the California red-legged frog
As stated in the Status of the Species Section, the recovery status of the California red-legged frog is considered within the scale of the Recovery Unit as opposed to the overall range. Because of the varied status of this species and differing levels of threats throughout its range, recovery strategies differ by recovery unit to best meet the goal of delisting the species. The goal of the recovery plan is to protect the long-term viability of all extant populations within each recovery unit. Overall, the strategy for the recovery of the California red-legged frog involves: (1) protecting existing populations by reducing threats; (2) restoring and creating habitat that would be protected and managed in perpetuity; (3) surveying and monitoring populations and conducting research on the biology and threats to the species; and (4) reestablishing populations of the species within its historical range.

We do not expect the proposed project to substantially affect the conservation of the California red-legged frog within the Northern Transverse Ranges Recovery Unit, in terms of the recovery strategy described in the recovery plan because:

1. The proposed project would not increase the threats currently impacting the California red-legged frog in the Northern Transverse Ranges Recovery Unit;

2. The proposed project would not preclude our ability to survey and monitor populations of California red-legged frog or conduct research on the biology and threats to the species;

3. The proposed project would not preclude our ability to reestablish populations of the California red-legged frog within its historical range; and

4. Mitigation/restoration projects conducted in the Ventura River by the O&M Program may restore habitat and remove non-native plants, which are activities listed as "conservation needs" in the recovery plan.

Summary of effects to California red-legged frogs
In summary, large-scale restoration could adversely affect California red-legged frogs when they are captured and relocated, trampled by workers, crushed by equipment, or exposure to glyphosate in terrestrial habitats. These effects would be minimized by the District's implementation of the minimization measures described in this biological opinion (inclusive of the measures that appear in our original biological opinion, 8-8-11-F/C-12). We do not expect that these restoration projects would compromise the recovery of California red-legged frogs. We anticipate that up to 30 California red-legged frogs may be relocated each year, and that up to 2 may go undetected in the project area and be injured or killed by project activities. Large scale restoration would be ultimately beneficial to California red-legged frogs by improving habitat conditions.

Effects of the Proposed Action on California red-legged frog critical habitat

Restoration projects may occur within designated critical habitat units STB-7 and VEN-1. As much of unit STB-7 that lies within Ventura County is located above Matilija dam, restoration in this area

is largely covered by other consultation documents. Unit VEN-1, comprised mostly of portions of San Antonio Creek, supports many areas of invasive vegetation that are a prime candidate for restoration that may eventually be covered under this consultation.

California red-legged frog critical habitat may be temporarily adversely affected through vegetation removal. Vegetation removal would target invasive species such as giant reed, tamarisk and tree of heaven. These activities may temporarily affect aquatic breeding habitat, non-aquatic breeding habitat and dispersal habitat, depending on the location and extent of the mitigation/restoration activities, however, these effects would be temporary in nature and the long-term effect on critical habitat would ultimately be beneficial.

Least Bell's vireo and southwestern willow flycatcher

Large-scale restoration - initial invasive vegetation removal
Least Bell's vireos and southwestern willow flycatchers may use the Ventura River, Santa Clara River, and Calleguas Creek habitat for breeding, foraging, and sheltering. Restoration projects involving invasive vegetation removal are a top priority for the recovery of Least Bell's vireos and southwestern willow flycatchers. Restoration projects that will ultimately be beneficial to these species may nonetheless have temporary adverse effects to both of these species.

The Corps and the District have proposed to conduct initial removal of invasive vegetation outside of the breeding season for least Bell's vireos and southwestern willow flycatchers, when the species are not present in the project area. Vegetation removed from habitat for the least Bell's vireo and southwestern willow flycatcher, even during the time of year when adults are not present can adversely affect these species. Least Bell's vireo and southwestern willow flycatcher adults often return to the previous season's territory to breed and are strongly territorial.

Temporary or permanent loss of habitat may cause the species to seek out new territories and breeding sites. Moving to an unfamiliar territory may expose least Bell's vireo or southwestern willow flycatchers to exhaustion and reduced fitness or starvation associated with decreased foraging opportunities, increased predation risk, inter- and intra-species interactions, and decreased probability of nesting success. The loss of habitat within a territory could also diminish available foraging and sheltering habitat for the birds. These effects would be minimized by the District's proposed measures to avoid vegetation removal during the breeding season (March 1 to September 15) to the maximum extent practical; to conduct surveys in any areas where vegetation removal would occur during the nesting season; and to avoid any active nests by a buffer distance established by Service-approved biologists.

The habitat value for least Bell's vireo and southwestern willow flycatcher would be reduced in the first few years following invasive vegetation removal, but as native vegetation grows back in, the mitigation/restoration sites will provide higher quality habitat for the species. We anticipate that up to 300 acres of restoration will be started in each Ventura County watershed each year. Within this 300-acre footprint, a smaller portion of the habitat would be changed to an extent that least Bell's vireos and southwestern willow flycatchers would find it unsuitable for nesting in the following year. Abandonment is most likely to happen in mixed stands of native and non-native vegetation, where the non-natives are dominant. Following treatment in these areas, native vegetation will be sparse

during the following breeding season, and birds returning to territories in these areas may find the habitat unsuitable for nesting.

We anticipate that of each 300-acre project area, approximately 20 percent of the affected habitat may be unsuitable for least Bell's vireo nesting in the following year, representing approximately 60 acres in each watershed. We anticipate that of each 300-acre project area, approximately 5 percent of the affected habitat may be unsuitable for southwestern willow flycatcher nesting in the following year, representing approximately 15 acres in each watershed. Large-scale restoration will affect southwestern willow flycatcher habitat proportionally less than least Bell's vireo habitat for two reasons: 1) in any 300-acre restoration area, there is likely to be more suitable nesting habitat for least Bell's vireos than for southwestern willow flycatchers; and 2) nesting habitat for southwestern willow flycatchers is generally more structurally complex, and the removal of giant reed from these habitats is less likely to make the remaining habitat unsuitable for nesting.

The original biological opinion (8-8-11-F/C-12) outlines a method for generally estimating the number of least Bell's vireos and southwestern willow flycatchers that may be affected by habitat removal. The method relies on estimating the number of pairs in two ways, described below:

1. High estimate: determine the theoretical maximum number of pairs that could possibly be affected by calculating the maximum number of territories that could fit within the affected area; and

2. Low estimate: use the average density of least Bell's vireos and southwestern willow flycatchers throughout each watershed (i.e. total acres of suitable habitat divided by total number of pairs in the watershed) to calculate the number of affected pairs within the project area. Using this approach, we originally calculated densities of one pair per 67 acres and one pair per 840 acres for least Bell's vireo and southwestern willow flycatcher, respectively.

Table 4 shows a summary of the maximum acres of habitat that may be made unsuitable for nesting in the year following the initiation large-scale restoration in each of the three Ventura County watersheds, and the low and high estimates of pairs that we estimate could be affected.

Table 4. Acres of least Bell's vireo and southwestern willow flycatcher habitat that we estimate could be made unsuitable for nesting in the year following the initiation of large-scale (300-acre) restoration projects in any Ventura County watershed, along with low and high estimates of pairs affected.

High and low estimates of pairs affected by restoration activities each year			
	Acres Affected	Low estimate	High estimate
Least Bell's vireo	60 ac	1 pair	15 pairs
Southwestern willow flycatcher	15 ac	0 pair	5 pairs

Removal of invasive vegetation may involve the application of glyphosate and/or imazapyr herbicides. The greatest herbicide use will occur during the initial treatment of the invasive vegetation, when least Bell's vireos and southwestern willow flycatchers are not present. The potential exists for least Bell's vireos and southwestern willow flycatchers to be exposed to these herbicides through drift, if they come in contact with vegetation that was recently treated, or if they ingest water or food that contains the herbicides.

No toxicity information is available for glyphosate and imazapyr exposure in least Bell's vireos or southwestern willow flycatchers, so toxicity information for other avian species will be used as a proxy. As described above, avian toxicity data is used to understand toxicity risk to California red-legged frogs in their terrestrial environment, and this data is described in the sections above. In summary, toxicity studies using imazapyr demonstrated a very low chance for acute or chronic toxicity at the maximum allowable application rate, and these studies resulted in no lethal or sub-lethal effects during acute and chronic exposures. Toxicity studies using glyphosate demonstrated that the herbicide may be slightly toxic to tested avian species; although no mortalities occurred in any of the studies so this number is likely to be strongly conservative.

Monitoring and maintenance
Following the initial removal of invasive plant species, follow-up monitoring and maintenance is necessary to identify and treat re-sprouting invasive plants. Monitoring and maintenance activities including herbicide treatments may occur when active nests are present in the action area. Worker foot traffic and construction equipment could dislodge the nests and crush eggs. Young fledglings in the action area could be flushed from protected areas by worker or construction vehicle presence, excessive noise, or physical impact. The District has proposed to minimize these effects by conducting the surveys described in LBV-2 and establishing buffer zones described in LBV-3.

Anecdotal evidence also suggests that human presence can attract predators to least Bell's vireo and southwestern willow flycatcher habitat areas. Predators and cowbirds may both be capable of "homing in" on agitated least Bell's vireos and southwestern willow flycatchers, and subsequently destroy or parasitize nearby nests (The Nature Conservancy 1997, Chace et al. 2002). Project-induced alterations, reductions, or disturbances of occupied and potential least Bell's vireo and southwestern willow flycatcher habitat and an increased human presence may induce higher rates of cowbird parasitism and nest depredation.

Recovery of least Bell's vireo
The draft recovery plan for the least Bell's vireo calls for stable or increasing populations of "several hundred or more breeding pairs" within each of the population/metapopulation units in order for the species to be downlisted from endangered to threatened. Delisting will be considered when populations are stable or increasing over a 5-year period and when threats are reduced or eliminated so that populations/metapopulations are capable of persisting without significant human intervention or when perpetual endowments are secured for cowbird trapping and exotic plant control in riparian habitat.

We do not expect the proposed project to substantially affect the conservation of the least Bell's vireo, in terms of the recovery strategy described in the recovery plan because habitat restoration is one of the primary recovery actions listed in the least Bell's vireo recovery plan.

Recovery of southwestern willow flycatcher
Within Ventura County, the Santa Clara River is the most important watershed for the recovery of the southwestern willow flycatcher, with the Ventura River and Calleguas Creek acting as supporting habitats that may facilitate metapopulation health. The Santa Clara River is one area within the Santa Clara River Management Unit within the Central California Recovery Unit. The metapopulation in this management unit has been identified for increased population stability and enhancement. The

minimum number of territories targeted for this management unit before the southwestern willow flycatcher can be reclassified to threatened is 25.

We do not expect the proposed project to substantially affect the conservation of the southwestern willow flycatcher, in terms of the recovery strategy described in the recovery plan because habitat restoration is one of the primary recovery actions listed in the southwestern willow flycatcher recovery plan.

Summary of effects to least Bell's vireos and southwestern willow flycatchers
In summary, large-scale restoration could adversely affect least Bell's vireos and southwestern willow flycatchers by temporarily removing habitat, providing exposure to glyphosate and imazapyr herbicide, or disturbing active nests while monitoring during the breeding season. These effects would be minimized by the District's implementation of the minimization measures described in this consultation (inclusive of the measures listed in 8-8-11-F/C-12). The effects to least Bell's vireos and southwestern willow flycatchers are anticipated to be predominantly non-lethal, temporary in nature, and ultimately beneficial.

Effects of the Proposed Action on southwestern willow flycatcher critical habitat

Critical habitat for the southwestern willow flycatcher is designated in portions of the Ventura River and Santa Clara River corridors and would be adversely affected by large-scale restoration activities through the removal of vegetation that supports suitable breeding, foraging, and sheltering habitat for the subspecies. All mitigation/restoration activities are anticipated to ultimately benefit habitat for southwestern willow flycatchers and will only have temporary impacts to critical habitat as described above.

Table 5 shows the amount of southwestern willow flycatcher critical habitat that is designated in the Ventura and Santa Clara Rivers along with the maximum projected area that would be affected in any given year.

Unit	Location	Critical Habitat (acres)	Maximum area affected annually (acres)
Ventura River	Ocean to Matilija Dam	1,445	300
Santa Clara River	Ocean to City of Santa Clarita, including Castaic Creek	9,505	300

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. We do not consider future Federal actions that are unrelated to the proposed action in this section because they require separate consultation pursuant to section 7 of the Act.

We are unaware of any non-federal actions that are reasonably certain to occur and are likely to adversely affect the tidewater goby and its critical habitat, California red-legged frog and its critical habitat, least Bell's vireo, and southwestern willow flycatcher and its critical habitat.

CONCLUSION

Large scale restoration using glyphosate and imazapyr herbicide is likely to temporarily adversely affect the tidewater goby and its critical habitat, California red-legged frog and its critical habitat, least Bell's vireo, and southwestern willow flycatcher and its critical habitat. As this is a programmatic consultation, we are unable to determine the exact footprint and timing of restoration projects that may occur during this program. For purposes of this consultation, we assume that up to 300 acres of restoration may be initiated in any given year. Each year that restoration is proposed, the Service will consider the current habitat conditions and footprint of the proposed project to ensure that the analysis contained in this biological opinion is sufficient.

Although we estimate that up to 300 acres of restoration may be initiated in each watershed in each year, the funding and logistical constraints associated with planning and implementing restoration projects will likely preclude many consecutive large-scale restoration projects. Each year after the initial removal phase, we anticipate that the habitat conditions will incrementally improve. After approximately 5 years, we anticipate that large-scale restoration projects will provide high quality habitat for all native wildlife, including the species that are the subject of this consultation.

Tidewater goby

The regulatory definition of "to jeopardize the continued existence of the species" focuses on assessing the effects of the proposed action on the reproduction, numbers, and distribution, and their effect on the survival and recovery of the species being considered in the biological opinion. For that reason, we have used those aspects of the tidewater goby's status as the basis to assess the overall effect of the proposed action on the species.

Reproduction

The Corps and District propose to conduct large scale habitat restoration that is anticipated to affect less than 20 percent of tidewater goby potential habitat in the Ventura River, Santa Clara River, Ormond Lagoon, and Calleguas Creek each year that project activities occur. We anticipate that tidewater goby reproduction may occur within wetted areas during project activities, and may be adversely affected. Workers traveling by foot through wetted habitat to remove invasive vegetation may crush tidewater goby burrows. We anticipate that the number of burrows that are affected by project activities in each of the Ventura County estuaries in any given year will be small in comparison to the total number of burrows present in each estuary in any given year. We reached this conclusion because foot traffic in wetted areas will be minimized and will affect less than 20 percent of potential tidewater goby habitat for a short duration each year. This level of effects on reproduction is not anticipated to appreciably reduce the likelihood of both survival and recovery of tidewater gobies in any Ventura County estuary, and therefore will not compromise the metapopulation dynamics that sustain the overall tidewater goby population.

Numbers

We anticipate that tidewater goby adults, eggs, and larvae may be injured or killed during project activities, by foot traffic entering wetted areas during large scale restoration. We cannot estimate the precise number of individuals that may be affected due to their small size, cryptic nature, and high variation in numbers throughout the year and between years. In order to determine the magnitude of

effects on numbers of tidewater gobies in each Ventura County estuary, we used the proportion of affected habitat as a proxy. We determined that the proportion of affected habitat is small in comparison to the overall available habitat in each Ventura County estuary, and that the duration the habitat would be affected is a small portion of each year. We anticipate that the number of tidewater gobies injured or killed by large scale restoration will be small compared to the overall population in each Ventura County estuary, and that the loss of these individuals will not decrease the population to an extent where any of the estuaries are at risk of extirpation due to the restoration activities.

Distribution

Large scale restoration activities are not anticipated to affect the distribution of tidewater gobies.

Recovery

We do not expect large scale habitat restoration to substantially affect the conservation of the tidewater goby within the Los Angeles/Ventura Recovery Unit. We reached this conclusion because the tidewater goby recovery plan emphasizes the importance of the conservation of population units rather than individual fish, and the effects of restoration actions are not expected to cause population-level declines in the Ventura River, Santa Clara River, Ormond Lagoon or Calleguas Creek. Additionally, the O&M Program would not adversely affect the metapopulation dynamics between each individual population in the Los Angeles/Ventura Recovery Unit. Furthermore, large scale habitat restoration may ultimately promote the recovery of tidewater gobies by removing invasive vegetation from tidewater goby habitat.

After reviewing the current status of the tidewater goby, the environmental baseline for the action area, the effects of the District's proposed O&M Program large scale restoration and the cumulative effects, it is the Service's biological opinion that large scale restoration, as proposed, is not likely to jeopardize the continued existence of the tidewater goby for the reasons below.

1. The effects on reproduction are temporary and minor;

2. The effects on numbers are small in comparison to the population in each affected estuary;

3. The distribution of tidewater gobies will not be affected; and

4. The effects of the project will not compromise the recovery of tidewater gobies as outlined in the recovery plan.

After reviewing the current status of the critical habitat of the tidewater goby, the environmental baseline of critical habitat within for the action area, the effects of the District's proposed O&M Program large scale restoration on critical habitat, and the cumulative effects, it is the Service's biological opinion that large scale restoration, as proposed, is not likely to result in the destruction or adverse modification of critical habitat of the tidewater goby for the reasons stated below.

1. The proposed project may cause a temporary minor increase in sedimentation in areas where invasive vegetation is removed. This may have a temporary minor effect on tidewater goby

substrate; however, we do not anticipate that this effect will preclude tidewater goby breeding activity in affected areas;

2. The proposed project will remove invasive vegetation from portions of tidewater goby habitat, thereby reducing the amount of plant cover available to provide protection from predators and from storm flows. This effect is temporary and minor as existing native vegetation within tidewater goby critical habitat will not be affected, and we anticipate that native vegetation will readily replace invasive vegetation following restoration; and

3. The effects on the conservation value and function of critical habitat are temporary and minor.

California red-legged frog

The regulatory definition of "to jeopardize the continued existence of the species" focuses on assessing the effects of the proposed action on the reproduction, numbers, and distribution, and their effect on the survival and recovery of the species being considered in the biological opinion. For that reason, we have used those aspects of the California red-legged frog's status as the basis to assess the overall effect of the proposed action on the species.

Reproduction

The Corps and District propose to conduct large scale habitat restoration that is anticipated to affect California red-legged frogs in the Ventura River. We do not anticipate that California red-legged frog eggs or tadpoles would be affected by large scale restoration due to project timing and proposed minimization measures. Adult California red-legged frogs detected by surveys and determined to be at risk of injury or death from project activities will be relocated out of the action area. We do not anticipate that this affect will affect reproduction of California red-legged frogs.

Numbers

We anticipate that up to 150 California red-legged frogs may be present within the footprint of the 300 acre restoration project in any given year. Of these 150 individuals, we anticipate that up to 30 individuals each year may require relocation out of the work area to avoid injury or death. Furthermore, we estimate that for a 300-acre restoration site in the Ventura River, 2 California red-legged frogs may go undetected and may be injured or killed by project activities each year a project of this size is initiated. The relocation of 30 individuals to unaffected habitat within the Ventura River, and death of 2 individuals each year represents a relatively minor effect in comparison to the number of California red-legged frogs that are estimated to occur in the Ventura River.

Distribution

Up to 30 California red-legged frogs may be relocated to other suitable habitats in the Ventura River each year that large scale restoration projects are initiated, representing a temporary, minor, distribution change within the Ventura River population. As California red-legged frogs are highly mobile, we do not anticipate that this short-distance relocation will permanently affect the distribution of California red-legged frogs in the Ventura River. Furthermore, this project will have no effect on the overall distribution of California red-legged frogs throughout the range.

Recovery

We do not expect the proposed project to substantially affect the conservation of the California red-legged frog within the Northern Transverse Ranges Recovery Unit, in terms of the recovery strategy described in the recovery plan (Service 2002). Because the proposed project would not increase the threats currently impacting the California red-legged frog in the recovery unit, the proposed project would not preclude our ability to survey and monitor populations of California red-legged frog or conduct research on the biology and threats to the species, the proposed project would not preclude our ability to reestablish populations of the California red-legged frog within its historical range, and large-scale restoration is listed as a "conservation need" in the recovery plan, and therefore will ultimately promote the recovery of the species.

After reviewing the current status of the California red-legged frog, the environmental baseline for the action area, the effects of the District's proposed O&M Program large scale restoration and the cumulative effects, it is the Service's biological opinion that large scale restoration, as proposed, is not likely to jeopardize the continued existence of the California red-legged frog for the reasons below.

1. Reproduction of California red-legged frogs will not be affected;

2. The effects on numbers of California red-legged frogs are small in comparison to the population in the Ventura River;

3. The distribution of California red-legged frogs will not be affected; and

4. The effects of the project will not compromise the recovery of California red-legged frogs as outlined in the recovery plan, and will fulfill an identified recovery action.

After reviewing the current status of the critical habitat of the California red-legged frog, the environmental baseline of critical habitat within the action area, the effects of the District's proposed O&M Program large scale restoration on critical habitat, and the cumulative effects, it is the Service's biological opinion that large scale restoration, as proposed, is not likely to result in the destruction or adverse modification of critical habitat of the California red-legged frog for the reasons below.

1. Restoration activities may temporarily affect aquatic breeding habitat, non-aquatic foraging and dispersal habitat, depending on the location and extent of the individual project; however, these effects would be temporary in nature and minor in comparison to the other habitat available within the critical habitat unit; and

2. The effects on the conservation value and function of critical habitat are temporary and minor, and are anticipated to have long-term beneficial effects.

Least Bell's vireo

The regulatory definition of "to jeopardize the continued existence of the species" focuses on assessing the effects of the proposed action on the reproduction, numbers, and distribution, and their effect on the survival and recovery of the species being considered in the biological opinion. For that

reason, we have used those aspects of the least Bell's vireo status as the basis to assess the overall effect of the proposed action on the species.

Reproduction
The Corps and District have proposed measures that are designed to avoid impacts to least Bell's vireo reproduction. These measures include conducting the initial removal during the winter when the birds are not present, and establishing protective buffers around nests when re-treatments are necessary during the breeding season. Reproductive effects may occur if least Bell's vireos return to territories that were substantially altered by the removal of invasive vegetation such that they are unsuitable for breeding. In these cases, a majority of the birds would likely travel to nearby unaffected habitats to set up a new territory.

Numbers
Each year in each watershed a large restoration project is initiated, we anticipate that between one and 15 pairs of least Bell's vireos may be sub-lethally affected by the removal of invasive plants within territories that were established in previous years. This effect would be greatest in the first year after initial removal, and would lessen over time as native vegetation grows in. There is also the potential for least Bell's vireos to be injured or killed by follow-up monitoring and maintenance if they are not detected during the pre-treatment surveys. On whole, the number of least Bell's vireos that could potentially be affected by large scale restoration is low in comparison to the population within Ventura County habitats. Numbers of least Bell's vireos in restored areas are anticipated to increase following the completion of these multi-year projects.

Distribution
In each watershed, between one and 15 pairs of least Bell's vireos may be displaced from large scale restoration areas in the year following initial removal of invasive vegetation. We anticipate that these displaced birds would establish a new territory in nearby suitable habitat. Following the completion of restoration projects, least Bell's vireos are anticipated to utilize the habitat in greater numbers than prior to restoration. Therefore, the overall distribution of least Bell's vireos would not be affected.

Recovery
We expect the proposed project will help fulfill a high priority recovery objective for the Santa Clara River, which is identified as one of 14 population/metapopulation units that need to show a stable or increasing population in order to downlist the species to threatened status. Although large scale restoration will have temporary adverse effects to least Bell's vireo, the long term effect is overwhelmingly beneficial.

After reviewing the current status of the least Bell's vireo, the environmental baseline for the action area, the effects of the District's proposed O&M Program large scale restoration and the cumulative effects, it is the Service's biological opinion that large scale restoration, as proposed, is not likely to jeopardize the continued existence of the least Bell's vireo for the reasons below.

1. The effects to reproduction of least Bell's vireo will be temporary and minor;

2. The effects on numbers of least Bell's vireos are small in comparison to the population throughout Ventura County;

3. The distribution of least Bell's vireo will not be affected; and

4. The project will promote the recovery of least Bell's vireos as outlined in the recovery plan.

Southwestern willow flycatcher

The regulatory definition of "to jeopardize the continued existence of the species" focuses on assessing the effects of the proposed action on the reproduction, numbers, and distribution, and their effect on the survival and recovery of the species being considered in the biological opinion. For that reason, we have used those aspects of the southwestern willow flycatcher status as the basis to assess the overall effect of the proposed action on the species.

Reproduction
The Corps and District have proposed measures that are designed to avoid impacts to southwestern willow flycatcher reproduction. These measures include conducting the initial invasive vegetation removal during the winter when the birds are not present, and establishing protective buffers around nests when re-treatments are necessary during the breeding season. Reproductive effects may occur if southwestern willow flycatchers return to territories that were substantially altered by the removal of invasive vegetation such that they are unsuitable for breeding. In these cases, we anticipate a majority of the birds would likely travel to nearby unaffected habitats to set up a new territory.

Numbers
Each year, in each watershed in which a large restoration project is initiated, we anticipate that between zero and 5 pairs of southwestern willow flycatchers may be sub-lethally affected by the removal of invasive plants within territories that were established in previous years. This effect would be greatest in the first year after initial removal, and would lessen over time as native vegetation grows in. There is also the potential for southwestern willow flycatchers to be injured or killed by follow-up monitoring and maintenance if they are not detected during the pre-treatment surveys. On whole, the high estimate for southwestern willow flycatcher pairs that could potentially be affected by large scale restoration (5 pairs) is relatively high in comparison to the population within Ventura County habitats. We do not anticipate that any 300 acre project area would realistically support 5 pairs of southwestern willow flycatchers due to their rarity in the area; however, because they are so rare, any decrease in numbers may represent a substantial effect to the population within Ventura County. This number is not substantial in comparison to the overall population.

Distribution
Between zero and five pairs of southwestern willow flycatchers may be displaced from large scale restoration areas in the year following initial removal of invasive vegetation. We anticipate that these displaced birds would establish a new territory in nearby suitable habitat. Following the completion of restoration projects, southwestern willow flycatchers would theoretically utilize the habitat in greater numbers than prior to restoration. However, due to the rarity of the species and uncertain population trajectory, any displacement of southwestern willow flycatchers from existing territories could eventually lead to local extirpation.

Recovery

We expect the proposed project would help fulfill a high priority recovery objective for the Santa Clara River management unit within the Coastal California Recovery Unit; however, temporary adverse effects may outweigh the recovery benefit of large scale habitat restoration. All territories documented in the Coastal California Recovery Unit were found in native or native-dominated habitats in 2002 when the recovery plan was drafted. Increasing native habitat areas through large scale restoration should theoretically increase the number of southwestern willow flycatcher pairs, unless high quality habitat is not limiting their population in Ventura County. Due to their rarity, any loss of individuals during the implementation of large scale restoration may have a negative impact on the recovery of the species within the Santa Clara River management unit. This effect is not anticipated to be substantial enough, in itself, to compromise the recovery of the southwestern willow flycatcher in the Coastal California Recovery Unit; however, it would be prudent to implement all possible measures necessary to avoid adverse effects to southwestern willow flycatchers during the implementation of large scale restoration.

After reviewing the current status of the southwestern willow flycatcher, the environmental baseline for the action area, the effects of the District's proposed O&M Program large scale restoration and the cumulative effects, it is the Service's biological opinion that large scale restoration, as proposed, is not likely to jeopardize the continued existence of the southwestern willow flycatcher for the reasons below.

1. The effects to reproduction of southwestern willow flycatchers will be temporary and minor;

2. The effects on numbers of southwestern willow flycatchers are potentially substantial compared to the population throughout Ventura County; however, the effects are not anticipated to be lethal and the numbers are not substantial compared to the overall population;

3. The distribution of southwestern willow flycatchers will not be affected; and

4. The project will promote the recovery of southwestern willow flycatchers as outlined in the recovery plan.

After reviewing the current status of the critical habitat of the southwestern willow flycatcher, the environmental baseline of critical habitat within the action area, the effects of the District's proposed O&M Program large scale restoration on critical habitat, and the cumulative effects, it is the Service's biological opinion that large scale restoration, as proposed, is not likely to result in the destruction or adverse modification of critical habitat of the southwestern willow flycatcher for the reasons below.

1. Restoration activities may temporarily affect the primary constituent element that calls for cover and shelter; however, these effects would be temporary in nature and minor in comparison to the other habitat available within the critical habitat management unit; and

2. The effects on the conservation value and function of critical habitat are temporary and minor, and are anticipated to have long-term beneficial effects.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened wildlife species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described below are non-discretionary, and must be undertaken by the the Corps or made binding conditions of any grant or permit issued to the District, as appropriate, for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps (1) fails to assume and implement the terms and conditions or (2) fails to require the District to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, the Corps or District must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement. [50 CFR 402.14(i)(3)]

Tidewater goby

We anticipate that some tidewater gobies could be taken as a result of the proposed action within up to 20 percent of potential tidewater goby habitat in the Ventura River (40 acres), Santa Clara River (106 acres), Ormond Lagoon (24 acres), and Calleguas Creek (135 acres) each year. We expect the incidental take to be in the form of harm and harassment as tidewater gobies may be crushed or displaced by workers walking through occupied habitat. Tidewater gobies may also be subject to harm if the project causes increased sedimentation upstream, which may ultimately flow to occupied habitats and smother burrows. Both of these effects are temporary and minor.

We cannot quantify the precise number of tidewater gobies that may be taken as a result of the actions that the Corps has proposed because tidewater gobies move over time, and may not be detected due to their cryptic nature and small size. The protective measures proposed by the Corps and the District are likely to reduce mortality or injury of most individuals. In addition, finding a dead or injured tidewater goby is unlikely.

Consequently, we are unable to reasonably anticipate the actual number of tidewater gobies that would be taken by the proposed project; however, we must provide a level at which formal consultation would have to be reinitiated. The Environmental Baseline and Effects Analysis sections of this biological opinion indicate that adverse effects to tidewater gobies would likely be relatively low given the nature of the proposed activities, and we, therefore, anticipate that take of tidewater

gobies would also be low. We also recognize that for every tidewater goby found dead or injured, other individuals may be killed or injured that are not detected, so when we determine an appropriate take level we are anticipating that the actual take would be higher and we set the number below that level.

Therefore, if 10 adult, subadult, or juvenile tidewater gobies are found dead or wounded at any single restoration site, the Corps must contact our office immediately to reinitiate formal consultation. Project activities that are likely to cause additional take should cease during this review period because the exemption provided under section 7(o)(2) would lapse and any additional take would not be exempt from the section 9 prohibitions.

California red-legged frog

We anticipate that some California red-legged frogs could be taken as a result of large-scale restoration in the Ventura River. We expect the incidental take to be in the form of harm and harassment during capture and relocation, exposure to herbicides, and by impacts from workers and equipment traveling through occupied habitat.

We cannot quantify the precise number of California red-legged frogs that may be taken as a result of the actions that the Corps has proposed because California red-legged frogs move over time; for example, animals may have entered or departed the action area since the time of pre-construction surveys. Other individuals may not be detected due to their cryptic nature. The protective measures proposed by the Corps and the District are likely to prevent mortality or injury of most individuals. In addition, finding a dead or injured California red-legged frogs is unlikely.

For estimating the number of California red-legged frogs that would be taken by capture, we estimated that of the 150 frogs that might be present in the Ventura watershed annual treatment area of up to 300 acres, up to 30 might be located and deemed necessary to move out of harm's way. While the benefits of relocation (i.e., minimizing mortality) outweigh the risk of capture, we must provide a limit for take by capture at which consultation would be reinitiated because high rates of capture may indicate that some important information about the species' in the action area was not apparent (e.g, it is much more abundant than thought). Conversely, because capture and relocation can be highly variable, depending upon the species and the timing of the activity, we do not anticipate an number so low that reinitiation would be triggered before the effects of the activity were greater than what we determined in the Effects Analysis.

Therefore, if more than 2 adult, subadult, or juvenile California red-legged frogs are found dead or wounded or if 30 are captured and relocated in any project year, the Corps must contact our office immediately to reinitiate formal consultation. Project activities that are likely to cause additional take should cease during this review period because the exemption provided under section 7(o)(2) would lapse and any additional take would not be exempt from the section 9 prohibitions.

Least Bell's vireo

We anticipate that between one and 15 pairs of least Bell's vireos could be taken as a result of the large-scale restoration in the Ventura River, Santa Clara River, and Calleguas Creek each year. We expect the incidental take to be in the form of harm as least Bell's vireos returning to affected

territories may be displaced in the year following initial restoration activities. Least Bell's vireos may also be harassed during vegetation re-treatments during the breeding season if they are not detected during pre-activity surveys. The protective measures proposed by the Corps and the District are likely to prevent mortality or injury of most individuals.

Finding a dead or injured least Bell's vireo is unlikely. We also recognize that for every least Bell's vireo found dead or injured, other individuals may be killed or injured that are not detected, so when we determine an appropriate take level we are anticipating that the actual take would be higher and we set the number below that level.

Therefore, if more than 1 least Bell's vireo adult, subadult, or egg is found dead or wounded in any project year, the Corps must contact our office immediately to reinitiate formal consultation. Project activities that are likely to cause additional take should cease during this review period because the exemption provided under section 7(o)(2) would lapse and any additional take would not be exempt from the section 9 prohibitions.

Southwestern willow flycatcher

We anticipate that between zero and five pairs of southwestern willow flycatchers could be taken as a result of the large-scale restoration in the Ventura River, Santa Clara River, and Calleguas Creek each year. We expect the incidental take to be predominantly in the form of harassment as southwestern willow flycatchers returning to affected territories may be displaced in the year following initial restoration activities. Southwestern willow flycatchers may also be harmed during vegetation re-treatments during the breeding season if they are not detected during pre-activity surveys. The protective measures proposed by the Corps and the District are likely to prevent mortality or injury of most individuals.

Finding a dead or injured southwestern willow flycatcher is unlikely. We also recognize that for every southwestern willow flycatcher found dead or injured, other individuals may be killed or injured that are not detected, so when we determine an appropriate take level we are anticipating that the actual take would be higher and we set the number below that level.

Therefore, if any southwestern willow flycatcher adults, subadults, or eggs are found dead or wounded in any project year, the Corps must contact our office immediately to reinitiate formal consultation. Project activities that are likely to cause additional take should cease during this review period because the exemption provided under section 7(o)(2) would lapse and any additional take would not be exempt from the section 9 prohibitions.

REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize the impacts of the incidental take of California red-legged frogs, least Bell's vireos and southwestern willow flycatchers:

1. The take of California red-legged frogs from capture, relocation, and construction activities must be minimized by employing qualified biologists who are able to handle California red-legged frogs safely and without transmitting diseases or pathogens; and

2. The taking of least Bell's vireos and southwestern willow flycatchers must be minimized by using qualified biologists to conduct surveys or other activities related to the protection of these species.

TERMS AND CONDITIONS

To be exempt from the prohibitions of section 9 of the Act, the Corps must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline reporting and monitoring requirements. These terms and conditions are non-discretionary.

The following terms and conditions implement reasonable and prudent measure 1:

a. Only qualified personnel authorized under the auspices of this reinitiated biological opinion (inclusive of personnel authorized under the original biological opinion, 8-8-11-F/C-12) can survey for, capture, and relocation California red-legged frogs. The District and the Corps have requested our approval of Lawrence Hunt. We have reviewed Mr. Hunt's qualifications and have determined that he has the appropriate experience to survey for, capture, and relocate California red-legged frogs and is hereby authorized to conduct those activities pursuant to this biological opinion. The Corps and the District must request our approval of any additional biologists at least 30 days prior to any such activities being conducted.

b. Latex or nitrile gloves must not be used when handling California red-legged frogs. Clean hands, free of lotions, sun screens, and fragrances are recommended. If gloves are necessary, the use of well-rinsed vinyl gloves is recommended.

c. To ensure that diseases are not conveyed between work sites by Service-approved biologists, the fieldwork code of practice developed by the Declining Amphibian Population Task Force must be followed at all times. A copy of the code of practice is enclosed as Appendix A of this document. The Service-approved biologist may substitute a bleach solution. Care must be taken so that all traces of the disinfectant are removed before entering the next aquatic habitat.

The following terms and conditions implement reasonable and prudent measure 2:

a. Only qualified personnel authorized under the auspices of this reinitiated biological opinion (inclusive of personnel authorized under the original biological opinion, 8-8-11-F/C-12) can survey for, designate suitable buffers, and monitor for least Bell's vireos and southwestern willow flycatchers. The Corps, or the District on behalf of the Corps, must request our approval of any additional biologists they wish to employ to conduct these activities in association with the O&M Program. The request must be received at least 30 days prior to any such activities being conducted.

b. Due to the rarity of southwestern willow flycatchers in Ventura County, restoration within areas where southwestern willow flycatchers are known to occur should be designed to minimize the chance that birds returning to the area the following year would find the habitat

unsuitable for nesting. This may involve leaving a certain percentage of arundo in place to provide the vegetation structure these birds require. Additionally, any treatments required during the breeding season in areas known to support southwestern willow flycatcher nesting should be done with an abundance of caution, including robust pre-treatment surveys, large buffer areas, and other measures to minimize potential impacts to nesting birds. These recommendations should be developed by the qualified biologist.

REPORTING REQUIREMENTS

Pursuant to 50 CFR 402.14(i)(3), the Corps must report the progress of the action and its impact on the species to the Service as specified in this incidental take statement. The Corps or the District must also provide an annual report that includes the following:

- The programmatic consultation tracking sheet (Appendix A) populated with individual projects that were initiated under the auspices of the programmatic consultation (inclusive of 8-8-11-F/C-12 and this document, 8-8-15-F-7R) in that year;
- Documentation of the number of tidewater gobies, California red-legged frogs, least Bell's vireos and southwestern willow flycatchers that were detected during surveys and project monitoring along with the location where they were found;
- Documentation of the number of tidewater gobies, California red-legged frogs, least Bell's vireos and southwestern willow flycatchers that were taken during project activities, and the nature of the taking (e.g., capture, injury, etc.); and
- A brief discussion of any problems encountered in implementing minimization measures.

DISPOSITION OF DEAD OR INJURED SPECIMENS

As part of this incidental take statement and pursuant to 50 CFR 402.14(i)(1)(v), upon locating a dead or injured tidewater goby, California red-legged frog, least Bell's vireo, or southwestern willow flycatcher, initial notification within 3 working days of its finding must be made by telephone and in writing to the Ventura Fish and Wildlife Office (805-644-1766). The report must include the date, time, location of the carcass, a photograph, cause of death or injury, if known, and any other pertinent information.

The Corps or the District must take care in handling injured animals to ensure effective treatment and care, and in handling dead specimens to preserve biological material in the best possible state. The Corps or the District must transport injured animals to a qualified veterinarian. Should any treated tidewater goby, California red-legged frog, least Bell's vireo, or southwestern willow flycatcher survive, the Corps or the District must contact the Service regarding the final disposition of the animal(s). The Corps or the District must contact the service to determine a location for final disposition of any dead specimens.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse

effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

- Long term maintenance of large scale restoration sites will be imperative to maintain the biological integrity of the habitat and ensure invasive plant species do not reinvade the area. We recommend that the Corps and the District work with the Service and other Partners to develop a strategy for ensuring that large scale restoration sites are maintained after the initial maintenance period has expired.

The Service requests notification of the implementation of any conservation recommendations so we may be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats.

REINITIATION NOTICE

This concludes formal consultation on the action(s) outlined in the reinitiation request. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, the exemption issued pursuant to section 7(o)(2) may have lapsed and any further take could be a violation of section 4(d) or 9. Consequently, we recommend that any operations causing such take cease pending reinitiation.

If you have any questions about this biological opinion, please contact Jenny Marek of my staff at (805) 644-1766 extension 325, or by e-mail at jenny_marek@fws.gov.

Sincerely,

Stephen P. Henry
Field Supervisor

LITERATURE CITED

Chace, J. F., J. J. Walsh, A. Cruz, J. W. Prather, and H. M. Swanson. 2002. Spatial and temporal activity patterns of the brood parasitic brown-headed cowbird at an urban/wildland interface. Landscape and Urban Planning. 983(2002) 1-12.

Devine, M. D., S. O. Duke, S. O., and C. Fedtke. 1993. Physiology of herbicide action. Prentice Hall, Englewood Cliffs, New Jersey.

Durkin, P. R. 2010. Appendicies to glyphosate human health and ecological risk assessment. U.S. Forest Service, Southern Region. Atlanta Georgia. Prepared by Syracuse Environmental Research Associates, Inc. Milaius, New York. Available at: http://www.fs.fed.us/foresthealth/pesticide/pdfs/Glyphosate_SERA_TR-052-22-03a-App.pdf. Accessed: December 30, 2014.

Extension Toxicology Network (Extoxnet). 1996. Glyphosate. Pesticide information profile. Available at: http://extoxnet.orst.edu/pips/glyphosa.htm. Accessed December 30, 2014.

Giesy, J. P., S. Dobson, K. R., and Solomon. 2000. Exotoxicological risk assessment for Roundup herbicide. Review of Environmental Contamination and Toxicology. 167:35-120.

Govindarajulu, P.P. 2008. Literature review of impacts of glyphosate herbicide on amphibians: What risks can the silvicultual use of this herbicide pose for amphibians in B.C.? Wildlife Report No. R-28. British Colombia, Ministry of Environment. Victoria, B.C.

Henley, W. F., M. A. Patterson, R. J. Neves, and A. Dennis Lemly. 2000. Effects of sedimentation and turbidity on lotic food webs: A concise review for natural resource managers. Reviews in Fisheries Science. 8(2): 125-139.

Howe, C. M., M. Berrill, B. D. Pauli, C. C. Helbing, K. Werry, N. Velhoen. 2004. Toxicity of glyphosate-based pesticides to four North American frog species. Environmental Toxicology and Chemistry. 23(8) 1928-1938.

Lambert, A. and T. Dudley. 2012. Taylor Property Habitat Restoration Plan. Prepared for The Nature Conservancy and The Santa Clara Trustee Council. Marine Science Institute and Cheadle Center for Biodiversity and Ecological Restoration, University of California at Santa Barbara. Santa Barbara, California

Monsanto. 2005. Aquamaster herbicides material safety data sheet. Monsanto Compant, St. Louis, Missouri.

Pless, P. 2005. Use of imazapyr herbicide to control invasive cordgrass (*Spartina* spp.) in the San Francisco Estuary: Water Quality, Biological Resources, and Human Health and Safety. Prepared for the San Francisco Estuary Invasive Species Project, Berkeley, California. Available at: http://www.spartina.org/referencemtrl/SF-Imazapyr-EA.pdf. Accessed December 30, 2014.

The Nature Conservancy. 1997. Status and Distribution of the least Bell's vireo and southwestern willow flycatcher in the Prado Basin, California, 1986-1997. Unpublished report prepared for the Orange County Water District, County of Orange, California Department of Fish and Game, U.S. Army Corps of Engineers, and U.S. Fish and Wildlife Service.

Tu, M., C. Hurd, and J. M. Randall. 2001. Weed control methods handbook: Tools and techniques for use in natural areas. The Nature Conservancy. Available at: http://www.invasive.org/gist/handbook.html. Accessed December 30, 2014.

Tu, M., C. Hurd, and J. M. Randall. 2004. Imazapyr. Weed control methods handbook: Tools and techniques for use in natural areas. The Nature Conservancy. Available at: http://www.invasive.org/gist/handbook.html. Accessed December 30, 2014.

U.S. Environmental Protection Agency (USEPA). 2007. Risks of imazapyr use to federally threatened California red-legged frog. Environmental Fate and Effects Division, Office of Pesticide Programs, Washington, D.C.

U.S. Environmental Protection Agency (USEPA). 2008. Risks of glyphosate use to federally threatened California red-legged frog (*Rana aurora draytonii*). Environmental Fate and Effects Division, Office of Pesticide Programs. Washington, District of Columbia. Available at: http://www.epa.gov/espp/litstatus/effects/redleg-frog/glyphosate/determination.pdf. Accessed December 31, 2014

U.S. Fish and Wildlife Service (Service). 2002. Recovery plan for the California red-legged frog (Rana aurora draytonii). U.S. Fish and Wildlife Service, Portland, Oregon. 173 pp.

U.S. Fish and Wildlife Service (Service). 2007. Recommended protection measures for pesticide applications in Region 2 of the U.S. Fish and Wildlife Service. Environmental Contaminants Program, Region 2, Austin, Texas. 199 pp.

U.S. Fish and Wildlife Service (Service). 2012. Imazapyr Profile. Pesticide use program.

Ventura County Watershed Protection District. 2008. Operations and Maintenance Program Final Environmental Impact Report. Ventura, California.

Ventura County Watershed Protection District. 2010. Operations and maintenance program impact analysis for federally-listed species. Ventura, California.

Ventura County Watershed Protection District. 2014. Invasive plant removal plan. Ventura River invasive plant removal and ecosystem restoration project. Ventura, California.

Washington State Department of Agriculture (WSDA). 2009. Human health and ecological effects risk assessment; Imazapyr Risk Assessment. Washington State, Olympia, Washington. Prepared by AMEC Geomatrix, Inc., Lynwood, Washington.

Appendix A. Restoration tracking sheet

Mitigation/Restoration Activites [Insert Year]							
Activities	**Acres of habitat affected**						
	TWG	**TWG CH**	**CRLF**	**CRLF CH**	**LBV**	**WIFL**	**WIFL CH**
Ventura River Watershed							
[Insert project title here]							
[Insert project title here]							
Total	0	0	0	0	0	0	0
Annual Maximum Allowable	40	40	300	300	300	300	300
Santa Clara River Watershed							
[Insert project title here]							
[Insert project title here]							
Total	0	0	0	0	0	0	0
Annual Maximum Allowable	106	106	N/A	N/A	300	300	300
Ormond Lagoon							
[Insert project title here]							
[Insert project title here]							
Total	0	0	0	0	0	0	0
Annual Maximum Allowable	24	24	N/A	N/A	N/A	N/A	N/A
Calleguas Creek							
[Insert project title here]							
[Insert project title here]							
Total	0	N/A	0	0	0	0	0
Annual Maximum Allowable	135	N/A	N/A	N/A	300	300	N/A

Note: Only enter mitigation/restoration projects that will directly remove habitat or adversely affect species or critical habitat. Include all projects that require relocation of California red-legged frogs, as well as any projects that occur during the breeding season within suitable habitat for least Bell's vireo or southwestern willow flycatcher.

United States Department of the Interior
U.S. FISH AND WILDLIFE SERVICE
Ecological Services
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, California 93003

IN REPLY REFER TO:
08EVEN00-2018-F-0330

December 31, 2019

Antal J. Szijj, Senior Project Manager
North Coast Branch, Regulatory Division
U.S. Army Corps of Engineers
2151 Alessandro Drive, Suite 110
Ventura, California 93001

Subject: Reinitiated Biological Opinion for the Ventura County Watershed Protection District's Routine Operation and Maintenance Program, Ventura County, California

Dear Mr. Szijj:

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion based on our review of the U.S. Army Corps of Engineers' (Corps) proposed authorization of a permit, pursuant to section 404 of the Clean Water Act, for the Ventura County Watershed Protection District's (District) routine operations and maintenance program (O&M Program). At issue are the effects of this action on the federally endangered tidewater goby (*Eucyclogobius newberryi*) and its critical habitat, least Bell's vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii extimus*) and its critical habitat, and the federally threatened California red-legged frog (*Rana draytonii*) and its critical habitat, in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act) (16 U.S.C. 1531 et seq.). The Corps is proposing to reauthorize the O&M Program under a programmatic Individual Permit rather than a Regional General Permit, for a 10-year term. We received your February 5, 2018, request for reinitiation of formal consultation on March 5, 2018.

We have based this biological opinion on information that accompanied your February 5, 2018, request for reinitiation of formal consultation, including the District's analysis of impacts to critical habitat (District 2019), correspondence between our staff and the District, and information in our files. We can make available a record of this consultation at the Ventura Fish and Wildlife Office.

Consultation History

On December 12, 2012, we issued a programmatic biological and conference opinion (2012-F-0531, Service 2012) to the Corps for the District's O&M Program and its effects on the endangered tidewater goby and its critical habitat, least Bell's vireo, southwestern willow

flycatcher and its critical habitat, California least tern (*Sterna antillarum browni*), arroyo toad (*Anaxyrus californicus*), Ventura marsh milk-vetch (*Astragalus pycnostachyus* var. *lanosissimus*), marsh sandwort (*Arenaria paludicola*), Gambel's watercress (*Nasturtium* [*Rorippa*] *gambellii*), and the federally threatened California red-legged frog and its critical habitat, coastal California gnatcatcher (*Polioptila californica*) and its critical habitat, and the western snowy plover (*Charadrius nivosus nivosus*) and its critical habitat. On October 19, 2015, we issued a reinitiated programmatic biological and conference opinion (2015-F-0055, Service 2015) to the Corps for the District's O&M Program and its effects on the tidewater goby and its critical habitat, least Bell's vireo, southwestern willow flycatcher and its critical habitat, California red-legged frog and its critical habitat, and the yellow-billed cuckoo (*Coccyzus americanus*). We received your February 5, 2018, request for reinitiation of formal consultation on March 5, 2018. Following the reinitiation request we received additional information regarding impacts to critical habitat from you on June 7, 2019 (District 2019). We reinitiated consultation the same day.

Updates to the regulations governing interagency consultation (50 CFR part 402) were effective on October 28, 2019 [84 FR 44976]. This consultation was pending at that time, and we are applying the updated regulations to the consultation. As the preamble to the final rule adopting the regulations noted, "[t]his final rule does not lower or raise the bar on section 7 consultations, and it does not alter what is required or analyzed during a consultation. Instead, it improves clarity and consistency, streamlines consultations, and codifies existing practice." We have reviewed the information and analyses relied upon to complete this biological opinion in light of the updated regulations and conclude the opinion is fully consistent with the updated regulations.

To accommodate the dynamic nature of the O&M Program, this consultation document is structured to provide a program-level assessment of effects to listed species and critical habitats, and is amended by the submittal of work plans outlining specific tasks as they are proposed to the Corps for authorization. To achieve this flexibility this document includes two components: 1) a program-wide concurrence for species and critical habitats that the Corps determined are not likely to be adversely affected by any aspect of the O&M Program; this concurrence concludes Section 7 consultation for this subset of species and critical habitat; and 2) a programmatic consultation for species or critical habitats that may be affected by one or more of the specific projects within the O&M Program; for this set of species a determination will be made by the Corps whether each project "may affect, and is likely to adversely affect" or "may affect, and is not likely to adversely affect" one or more of the covered species. A summary of how all of the species described above are covered by this document is shown in Table 1.

Table 1. Summary table of species and critical habitats that are covered through the program-wide concurrence or are subject to the programmatic consultation.

Species	Corps Determination	Service Response
California red-legged frog	May affect, likely to adversely affect *or* not likely to adversely affect	**Programmatic Consultation**
California red-legged frog designated critical habitat	May affect, likely to adversely affect *or* not likely to adversely affect	
Least Bell's vireo	May affect, likely to adversely affect *or* not likely to adversely affect	
Southwestern willow flycatcher	May affect, likely to adversely affect *or* not likely to adversely affect	
Southwestern willow flycatcher proposed critical habtiat[1]	May affect, likely to adversely affect *or* not likely to adversely affect	
Tidewater goby	May affect, likely to adversely affect *or* not likely to adversely affect	
Tidewater goby designated critical habtiat	May affect, likely to adversely affect *or* not likely to adversely affect	
Coastal California gnatcatcher	May affect, not likely to adversely affect	**Program-wide Concurrence**
Coastal California gnatcatcher designated critical habitat	May affect, not likely to adversely affect	
Gambel's watercress	May affect, not likely to adversely affect	
Marsh sandwort	May affect, not likely to adversely affect	
California least tern	May affect, not likely to adversely affect	
Western snowy plover	May affect, not likely to adversely affect	
Western snowy plover critical habtiat	May affect, not likely to adversely affect	
Yellow-billed cuckoo	May affect, not likely to adversely affect	
Arroyo toad [2]	No effect	**No Response**
Ventura marsh milk-vetch[2]	No effect	

[1] The programmatic conference opinion converted to a biological opinion upon final designation of critical habitat for the southwestern willow flycatcher on January 3, 2013.

[2] The Corps and Service are not required to consult on "no effect" determinations.

PROGRAM-WIDE CONCURRENCE

The program-wide concurrence for coastal California gnatcatcher and its critical habitat, Gambel's watercress, marsh sandwort, California least tern, western snowy plover and its critical habitat, and yellow-billed cuckoo are described in the original consultation (2012-F-0531) and the reinitiated consultation (2015-F-0055) remains unchanged and is hereby incorporated by reference.

ADMINISTRATION OF THE PROGRAMMATIC BIOLOGICAL OPINION

The administration of the programmatic biological opinion will also remain unchanged. As with all other actions subject to this programmatic consultation, the Corps will notify the Service of proposed restoration actions and provide project-specific details including:

- Location of the restoration project;
- Size of the restoration project;
- Restoration methods (including any herbicide use);
- Description of any proposed modifications to the Best Management Practices (BMPs) or minimization measures that appear in the original consultation (2012-F-0531);
- Species and critical habitats affected; and
- Determination of effects to listed species and critical habitats;

We will review the Corps' notification and respond in writing, or via electronic mail, to acknowledge that activities are being conducted under the programmatic biological opinion, and to notify the Corps of any concerns or questions regarding the proposed action, or if we feel that there would be effects that would necessitate a separate consultation. The tracking sheet attached in Appendix A of the original biological opinion (2012-F-0531) can be used to facilitate this notification. The Service will strive to respond within 30 days, but will request an extension if additional processing time is necessary.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The description of the proposed action remains largely unchanged from the descriptions in our previous biological opinions for the project (2012-F-0531 and 2015-F-0055), and are hereby incorporated by reference. In brief, the District proposes to conduct activities such as vegetation management, sediment removal from channels and basins, and maintenance and repair of flood control facilities. However, the Corps proposes to re-authorize the program under a programmatic individual permit rather than a regional general permit (RGP) which is how the program was previously authorized. The new permit would authorize the program for 10 years rather than 5 years as the RGP did. Furthermore, the District has updated the list of facilities with potential impacts to California red-legged frog, tidewater goby, least Bell's vireo, and southwestern willow flycatcher critical or suitable habitat in the Ventura River, Santa Clara River, and Calleguas Creek Watersheds. Changes to the O&M Program include addition and subtraction of facilities, adjustments in facility boundaries, clarification of facility locations and maintenance area specifications. Since 2012, the District has both incorporated new facilities into the O&M program, and has relinquished maintenance of other facilities. In 2013, the District conducted a geographic information system update to map and catalog data associated with named reaches and facilities, which clarified lengths and facility characteristics. No other aspects of the O&M Program have been altered and the minimization and avoidance measures remain the same. We provide below a list of the estimated differences in project impact area on habitat

with the potential to support each listed species resulting from these changes in facility status (District 2019).

Tidewater Goby

Tidewater gobies occur in the coastal portions of the three main watersheds (Ventura River, Santa Clara River, and Callelugas Creek) with the O&M program area. The District estimates that the proposed changes would reduce the estimated area of impact on habitat with the potential to support the tidewater goby from 350.94 acres to 350.64 acres, a difference of 0.3 acre (0.08 percent; District 2019). The District attributes this difference to a correction in the estimated length of the Ventura River with potential to support the species.

Least Bell's Vireo

Least Bell's vireos occur in riparian habitat in all three watersheds within the O&M program area. The District estimates that the proposed changes would increase the estimated area of impact on habitat with the potential to support the least Bell's vireo from 721.02 acres to 972.01 acres, a difference of 250.99 acres (34.8 percent; District 2019). This increase in estimated area of impact is largely driven by an increase in the amount of the Callelugas Creek watershed now occupied by the species, thereby exposing the species to a greater amount of impacts from project activities.

Southwestern Willow Flycatcher

Southwestern willow flycatchers occur in riparian habitat with dense thickets and perennial water in all three watersheds within the O&M program area. The District estimates that the proposed changes would increase the estimated area of impact on habitat with the potential to support the southwestern willow flycatcher from 408.45 acres to 413.65 acres, a difference of 5.2 acres (1.3 percent District 2019). This increase in estimated area of impact is largely driven by the District's inclusion of additional facilities within the Ventura River as habitat with the potential to support the species.

California Red-legged Frog

Within the O&M program area the California red-legged frog occurs only in the Ventura River watershed. Following the previous reinitiation of this biological opinion, the species range has expanded to the lower reaches of the Ventura River. The District estimates that the proposed changes would increase the estimated area of impact on habitat with the potential to support the California red-legged frog from 6.51 acres to 13.73 acres, a difference of 7.22 acres (111 percent; District 2019). This increase in estimated area of impact is driven by the expansion of the species into the lower reaches of the Ventura River and the District's inclusion of an additional levee system within its facilities.

Critical Habitat of the Tidewater Goby

Within the O&M program area critical habitat of the tidewater goby is present within the Ventura River, the Santa Clara River, and Ormond Lagoon. Following the Service's 2015 reinitiated biological opinion (2015-F-0055), the District has provided new estimates of the amount of critical habitat that project activities may impact (District 2019). In the VEN-1 critical habitat unit, the District has revised its estimate of the maximum annual impacts of project activities from 40 acres (80 percent of the unit) to 29 acres (58 percent of the unit). In the VEN-2 critical habitat unit, the District has clarified that they own no facilities in this critical habitat unit and thus the District has revised its estimate of the maximum annual impacts of project activities from 106 acres (32.9 percent of the unit) to zero acres. In the VEN-3 critical habitat unit, the District has revised its estimate of the maximum annual impacts of project activities from 24 acres (19.8 percent of the unit) to 13.8 acres (11 percent of the unit). In total, the District estimates that the proposed changes would reduce the maximum annual impacts of project activities on critical habitat by 126.3 acres.

Critical Habitat of the Southwestern Willow Flycatcher

Within the O&M program area critical habitat of the southwestern willow flycatcher is present within the Santa Clara and Ventura Rivers. Following the Service's 2015 reinitiated biological opinion (2015-F-0055), the District has provided new estimates of the amount of critical habitat that project activities may impact (District 2019). In the Santa Clara River subunit of critical habitat, the District has revised its estimate of annual maximum impacts to critical habitat from 300 acres (3.8 percent of the unit) to 720 acres (9.1 percent of the unit). In the Ventura River subunit of critical habitat, the District has revised its estimate of annual maximum impacts to critical habitat from 300 acres (20.7 percent of the unit) to 306 acres (21.2 percent of the unit). In total the District estimates that the proposed changes would increase the maximum annual impacts of project activities on critical habitat by 426 acres. The District attributes this increase to its inclusion of the Live Oak Acres Bank Protection area in the Ventura River and drain outlets to the Santa Clara River within its facilities.

Critical Habitat of the California red-legged frog

Within the O&M program area critical habitat of the California red-legged frog is present near the Ventura River. Following the Service's 2015 reinitiated biological opinion (2015-F-0055), the District has provided new estimates of the amount of critical habitat within and adjacent to the project area (District 2019). In the STB-7 unit of critical habitat, the District has revised its estimate of annual maximum impacts to critical habitat from 1.9 acres (0.012 percent of the unit) to 77.25 acres (0.5 percent of the unit). In the VEN-1 unit of critical habitat, the District has revised its estimate of annual maximum impacts to critical habitat from 0.4 acre (0.013 percent of the unit) to 42.19 acres (1.4 percent of the unit). In total the District estimates that the proposed changes would increase the maximum annual impacts of project activities on critical habitat by 117.14 acres. The District attributes this increase in estimated impacts to the inclusion of additional facilities within critical habitat.

ANALYTICAL FRAMEWORK FOR THE JEOPARDY AND ADVERSE MODIFICATION DETERMINATIONS

Jeopardy Determination

Section 7(a)(2) of the Endangered Species Act requires that Federal agencies ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of listed species. "Jeopardize the continued existence of" means "to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species" (50 CFR 402.02).

The jeopardy analysis in this biological opinion relies on four components: (1) the Status of the Species, which describes the range-wide condition of the tidewater goby, least Bell's vireo, southwestern willow flycatcher, and California red-legged frog, the factors responsible for that condition, and its survival and recovery needs; (2) the Environmental Baseline, which analyzes the condition of the tidewater goby, least Bell's vireo, southwestern willow flycatcher, and California red-legged frog, in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of the tidewater goby, least Bell's vireo, southwestern willow flycatcher, and California red-legged frog, (3) the Effects of the Action, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated or interdependent activities on the tidewater goby, least Bell's vireo, southwestern willow flycatcher, and California red-legged frog, and (4) the Cumulative Effects, which evaluates the effects of future, non-Federal activities, that are reasonably certain to occur in the action area, on the tidewater goby, least Bell's vireo, southwestern willow flycatcher, and California red-legged frog.

In accordance with policy and regulation, the jeopardy determination is made by evaluating the effects of the proposed Federal action in the context of the current status of the tidewater goby, least Bell's vireo, southwestern willow flycatcher, and California red-legged frog, taking into account any cumulative effects, to determine if implementation of the proposed action is likely to reduce appreciably the likelihood of both the survival and recovery of the tidewater goby, least Bell's vireo, southwestern willow flycatcher, and California red-legged frog, in the wild by reducing the reproduction, numbers, and distribution of that species.

Adverse Modification Determination

Section 7(a)(2) of the Act requires that Federal agencies insure that any action they authorize, fund, or carry out is not likely to destroy or to adversely modify designated critical habitat. A final rule revising the regulatory definition of "destruction or adverse modification" was

published on February 11, 2016 (81 FR 7214). The final rule became effective on March 14, 2016. The revised definition states:

> "Destruction or adverse modification means a direct or indirect alteration that appreciably diminishes the value of critical habitat for the conservation of a listed species. Such alterations may include, but are not limited to, those that alter the physical or biological features essential to the conservation of a species or that preclude or significantly delay development of such features."

The "destruction or adverse modification" analysis in this biological opinion relies on four components: (1) the Status of Critical Habitat, which describes the range-wide condition of the critical habitat in terms of the key components (i.e., essential habitat features, primary constituent elements, or physical and biological features) that provide for the conservation of the listed species, the factors responsible for that condition, and the intended value of the critical habitat overall for the conservation/recovery of the listed species; (2) the Environmental Baseline, which analyzes the condition of the critical habitat in the action area, the factors responsible for that condition, and the value of the critical habitat in the action area for the conservation/recovery of the listed species; (3) the Effects of the Action, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated and interdependent activities on the key components of critical habitat that provide for the conservation of the listed species, and how those impacts are likely to influence the conservation value of the affected critical habitat; and (4) Cumulative Effects, which evaluate the effects of future non-Federal activities that are reasonably certain to occur in the action area on the key components of critical habitat that provide for the conservation of the listed species and how those impacts are likely to influence the conservation value of the affected critical habitat.

For purposes of making the "destruction or adverse modification" determination, the Service evaluates if the effects of the proposed Federal action, taken together with cumulative effects, are likely to impair or preclude the capacity of critical habitat in the action area to serve its intended conservation function to an extent that appreciably diminishes the rangewide value of critical habitat for the conservation of the listed species. The key to making that finding is understanding the value (i.e., the role) of the critical habitat in the action area for the conservation/recovery of the listed species based on the Environmental Baseline analysis.

STATUS OF THE SPECIES AND THEIR CRITICAL HABITATS

The statuses of the tidewater goby and its critical habitat, least Bell's vireo, southwestern willow flycatcher, and California red-legged frog and its critical habitat remain unchanged from the descriptions in our previous consultations (2012-F-0531 and 2015-F-0055), and are hereby incorporated by reference.

ENVIRONMENTAL BASELINE

Action Area

The action area is unchanged from the previous consultations (2012-F-0531 and 2015-F-0055) and we hereby incorporate those discussions by reference.

Habitat Characteristics and Existing Conditions of the Action Area

The habitat characteristics and existing conditions in the action area are unchanged from the previous consultations (2012-F-0531 and 2015-F-0055) and we hereby incorporate those discussions by reference.

Previous Consultations in the Action Area

Following issuance of the reinitiated biological opinion (2015-F-0055), the Service has consulted numerous times on the effects of projects (primarily small transportation projects) in the action area on tidewater goby and its critical habitat, least Bell's vireo, southwestern willow flycatcher and its critical habitat, and California red-legged frog and its critical habitat. None of these consultations have concluded that project activities would jeopardize the tidewater goby, least Bell's vireo, southwestern willow flycatcher, or California red-legged frog. Additionally, none of these consultations have concluded that project activities would destroy or adversely modify critical habitat of the tidewater goby, southwestern willow flycatcher, and California red-legged frog.

Condition (Status) of the Species in the Action Area

Tidewater goby

The status of the species in the action area is unchanged from the previous biological opinion (2015-F-0055) and we hereby incorporate that discussion by reference.

Least Bell's vireo

The status of the species in the action area is unchanged from the previous biological opinion (2015-F-0055) with the exception of an increase in observed abundance of least Bell's vireo in lower Calleguas Creek within the action area.

Southwestern willow flycatcher

The status of the species in the action area is unchanged from the previous biological opinion (2015-F-0055) and we hereby incorporate that discussion by reference.

California red-legged frog

The status of the species in the action area is unchanged from the previous biological opinion (2015-F-0055) with the exception that California red-legged frogs have expanded their range in the lower Ventura River within the action area.

Recovery

Tidewater goby

The status of the recovery of the tidewater goby in the action area is unchanged from the previous biological opinion (2015-F-0055) and we hereby incorporate that discussion by reference.

Least Bell's vireo

The status of the recovery of the least Bell's vireo in the action area is unchanged from the previous biological opinion (2015-F-0055) and we hereby incorporate that discussion by reference.

Southwestern willow flycatcher

The status of the recovery of the southwestern willow flycatcher in the action area is unchanged from the previous biological opinion (2015-F-0055) and we hereby incorporate that discussion by reference.

California red-legged frog

The status of the recovery of the California red-legged frog in the action area is unchanged from the previous biological opinion (2015-F-0055) and we hereby incorporate that discussion by reference.

Condition (Status) of Critical Habitat in the Action Area

Tidewater goby

The status of the critical habitat of the tidewater goby in the action area is unchanged from the previous biological opinion (2015-F-0055) and we hereby incorporate that discussion by reference.

Southwestern willow flycatcher

The status of the critical habitat of the southwestern willow flycatcher in the action area is unchanged from the previous biological opinion (2015-F-0055) and we hereby incorporate that discussion by reference.

California red-legged frog

The status of the critical habitat of the California red-legged frog in the action area is unchanged from the previous biological opinion (2015-F-0055) and we hereby incorporate that discussion by reference.

EFFECTS OF THE ACTION

Following the 2015 reinitiation of the programmatic biological opinion (2015-F-0055) the District has added and removed O&M facilities, adjusted O&M facility boundaries, clarified facility locations and maintenance area specifications. Additionally, the areas in which tidewater goby, least Bell's vireo, southwestern willow flycatcher, and California red-legged frog are known or have the potential to occur has changed.

Specifically, for tidewater goby the area affected by O&M activities decreases by approximately 0.3 acre (0.085 percent), a negligible difference. For least Bell's vireo the area affected by O&M activities increases by approximately 250.99 acres, an increase of 26 percent, because the range of the species has increased in the action area. For southwestern willow flycatcher the area affected by O&M activities increases by approximately 5.2 acres (1.5 percent), a negligible difference. For California red-legged frog the area affected by O&M activities increases by approximately 34.33 acres, a 53 percent increase, because the range of the species has increased in the action area. The area affected by O&M activities within tidewater goby critical habitat decreases by 126.3 acres, a 74 percent decrease, primarily because of the clarification that the District does not own or operate facilities in VEN-2 (Santa Clara River) critical habitat unit. The area affected by O&M activities within southwestern willow flycatcher critical habitat increases by 426 acres, a 42 percent increase, primarily because the District is now including additional areas of critical habitat within its scope of effects. The area affected by O&M activities within California red-legged frog critical habitat increases by 117.14 acres, a 98 percent increase, though almost all of this increase is because the District now includes suitable critical habitat adjacent to its facilities within its estimates. Furthermore, the Corps is proposing to issue a 10-year individual permit in contrast to the 5-year permit term consulted upon in the 2015 reinitiated biological opinion (2015-F-0055).

Tidewater goby

Compared to the 2015 reinitiated programmatic biological opinion (2015-F-0055), the geographic scale of effects on suitable habitat of the tidewater goby proposed by the current reinitiation request has decreased by a total of 0.3 acre, a negligible decrease of 0.085 percent.

The types and intensity of project activities have not changed. However, relative to the 2015 reinitiated programmatic biological opinion, the duration of effects has doubled from five to ten years.

Least Bell's vireo

The original biological opinion (2012-F-0531) and 2015 reinitiated biological opinion (2015-F-0055) discussed potential effects of the proposed activities on the least Bell's vireo and its recovery. The applicant would continue to avoid and minimize effects on the least Bell's vireo by implementing the measures discussed in the original biological opinion (2012-F-0531) and 2015 reinitiated biological opinion (2015-F-0055). However, the extent of project activities with the potential to affect least Bell's vireo has increased from approximately 721 total acres to approximately 972 total acres, a 26 percent increase. Accordingly, we expect a proportionate increase of the effects of project activities on the least Bell's vireo as well. Additionally, relative to the 2015 reinitiated programmatic biological opinion, the duration of effects has doubled from five to ten years. Nevertheless, project activities will continue to occur primarily in already developed areas, consist of low-intensity activities of limited duration and scale, and the District would implement suitable avoidance and minimization measures.

Southwestern willow flycatcher

The original biological opinion (2012-F-0531) and 2015 reinitiated biological opinion (2015-F-0055) discussed potential effects of the proposed activities on the southwestern willow flycatcher and its recovery. The applicant would continue to avoid and minimize effects on the southwestern willow flycatcher by implementing the measures discussed in the original biological opinion (2012-F-0531) and 2015 reinitiated biological opinion (2015-F-0055). However, the extent of project activities with the potential to affect southwestern willow flycatcher has increased from approximately 408 total acres to approximately 414 total acres, a 1.5 percent increase. Accordingly, we expect a proportionate increase of the effects of project activities on the southwestern willow flycatcher as well. Additionally, relative to the 2015 reinitiated programmatic biological opinion, the duration of effects has doubled from five to ten years. Nevertheless, project activities will continue to occur primarily in already developed areas, consist of low-intensity activities of limited duration and scale, and the District would implement suitable avoidance and minimization measures.

California red-legged frog

The original biological opinion (2012-F-0531) and 2015 reinitiated biological opinion (2015-F-0055) discussed potential effects of the proposed activities on the California red-legged frog and its recovery. The applicant would continue to avoid and minimize effects on the California red-legged frog by implementing the measures discussed in the original biological opinion (2012-F-0531) and 2015 reinitiated biological opinion (2015-F-0055). However, the extent of project activities with the potential to affect the California red-legged frog has increased from approximately 29 total acres to approximately 59 total acres, a 51 percent increase. Accordingly,

we expect a proportionate increase of the effects of project activities on the California red-legged frog as well. Additionally, relative to the 2015 reinitiated programmatic biological opinion, the duration of effects has doubled from five to ten years. Nevertheless, project activities will continue to occur primarily in already developed areas, consist of low-intensity activities of limited duration and scale, and the District would implement suitable avoidance and minimization measures.

Tidewater goby critical habitat

Compared to the 2015 reinitiated programmatic biological opinion (2015-F-0055), the geographic scale of effects on critical habitat of the tidewater goby proposed by the current reinitiation request has decreased by a total of 126.3 acres, a 74 percent decrease. The types and intensity of project activities have not changed. However, relative to the 2015 reinitiated programmatic biological opinion, the duration of effects has doubled from five to ten years.

Southwestern willow flycatcher critical habitat

The original biological opinion (2012-F-0531) and 2015 reinitiated biological opinion (2015-F-0055) discussed potential effects of the proposed activities on critical habitat of the southwestern willow flycatcher. The applicant would continue to avoid and minimize effects on the on critical habitat of the southwestern willow flycatcher by implementing the measures discussed in the original biological opinion (2012-F-0531) and 2015 reinitiated biological opinion (2015-F-0055). However, the extent of project activities with the potential to affect critical habitat of the southwestern willow flycatcher vireo has increased from approximately 600 total acres to approximately 1026 total acres, a 42 percent increase. Accordingly, we expect a proportionate increase of the effects of project activities on critical habitat of the southwestern willow flycatcher as well. Additionally, relative to the 2015 reinitiated programmatic biological opinion, the duration of effects has doubled from five to ten years. Nevertheless, project activities will continue to occur primarily in already developed areas that do not contain the PBFs (Physical or Biological Features) of critical habitat of the species, consist of low-intensity activities of limited duration and scale, and the District would implement suitable avoidance and minimization measures.

California red-legged frog critical habitat

The original biological opinion (2012-F-0531) and 2015 reinitiated biological opinion (2015-F-0055) discussed potential effects of the proposed activities on critical habitat of the California red-legged frog. The applicant would continue to avoid and minimize effects on critical habitat of the California red-legged frog by implementing the measures discussed in the original biological opinion (2012-F-0531) and 2015 reinitiated biological opinion (2015-F-0055). However, the extent of project activities with the potential to directly affect critical habitat of the California red-legged frog has increased from approximately 2.3 total acres to approximately 119.44 total acres, a 98 percent increase (Ventura County Watershed Protection District 2019). As discussed above, this increase is primarily derived from the District's inclusion of suitable

upland and dispersal habitat nearby District facilities within its effects analysis. Relative to the 2015 reinitiated programmatic biological opinion, the duration of effects has doubled from five to ten years. Nevertheless, project activities will continue to occur primarily in already developed areas that do not contain PBFs of critical habitat of the species, consist of low-intensity activities of limited duration and scale, and the District would implement suitable avoidance and minimization measures.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. We do not consider future Federal actions that are unrelated to the proposed action in this section because they require separate consultation pursuant to section 7 of the Act.

We are unaware of any non-federal actions that are reasonably certain to occur and are likely to adversely affect the tidewater goby and its critical habitat, least Bell's vireo, southwestern willow flycatcher and its critical habitat, and California red-legged frog and its critical habitat.

CONCLUSION

Tidewater goby

As discussed above, the status of the species in the action area and effects of the action on the tidewater goby are relatively unchanged from the 2015 reinitiated biological opinion (2015-F-0055). However, the duration of project activities would double in duration from five to ten years relative to the 2015 reinitiated biological opinion. Nevertheless, because (1) project activities would continue to occur primarily on already developed land, (2) consist of low-intensity impacts of limited scale, and (3) the District would implement suitable avoidance and minimization measures we conclude that the authorization, as proposed, would not jeopardize the continued survival or recovery of the tidewater goby.

Least bell's vireo

As discussed above, the species has become more abundant and widespread in the action area and the geographic scale of project activities within occupied least Bell's vireo habitat has increased substantially relative to the scope analyzed by the 2015 reinitiated biological opinion (2015-F-0055). Additionally, the duration of project activities would double in duration from five to ten years relative to the 2015 reinitiated biological opinion (2015-F-0055). Nevertheless, because (1) project activities would continue to occur primarily on already developed land, (2) consist of low-intensity impacts of limited scale, and (3) the District would implement suitable avoidance and minimization measures we conclude that the authorization, as proposed, would not jeopardize the continued survival or recovery of the least Bell's vireo.

Southwestern willow flycatcher

As discussed above, the status of the species in the action area and effects of the action on the southwestern willow flycatcher are relatively unchanged from the 2015 reinitiated biological opinion (2015-F-0055). However, the duration of project activities would double in duration from five to ten years relative to the 2015 reinitiated biological opinion (2015-F-0055). Nevertheless, because (1) project activities would continue to occur primarily on already developed land, (2) consist of low-intensity impacts of limited scale, and (3) the District would implement suitable avoidance and minimization measures we conclude that the authorization, as proposed, would not jeopardize the continued survival or recovery of the southwestern willow flycatcher.

California red-legged frog

As discussed above, the species has become more widespread in the action area and the geographic scale of project activities within occupied California red-legged frog habitat has increased substantially following the 2015 reinitiated biological opinion (2015-F-0055). Additionally, the duration of project activities would double in duration from five to ten years relative to the 2015 reinitiated biological opinion (2015-F-0055). Nevertheless, because (1) project activities would continue to occur primarily on already developed land, (2) consist of low-intensity impacts of limited scale, and (3) the District would implement suitable avoidance and minimization measures we conclude that the authorization, as proposed, would not jeopardize the continued survival or recovery of the California red-legged frog.

Critical habitat of the tidewater goby

As discussed above, the status of the critical habitat of the tidewater goby in the action area has not changed substantially from the 2015 reinitiated biological opinion (2015-F-0055). The district has clarified the scale of effects and reduced the scale of effects on critical habitat. Additionally, project effects would double in duration from five to ten years. Nevertheless because (1) project activities would continue to occur primarily on already developed land, (2) consist of low-intensity impacts of limited scale, and (3) the District would implement suitable avoidance and minimization measures we conclude that the authorization, as proposed, would not destroy or adversely modify designated critical habitat of the tidewater goby.

Critical habitat of the southwestern willow flycatcher

As discussed above, the status of the critical habitat of the southwestern willow flycatcher in the action area has not changed substantially from the 2015 reinitiated biological opinion (2015-F-0055). However, the district has increased its estimate of the geographic scale of effects on designated critical habitat because it is now including additional activity areas relative to 2015 reinitiated biological opinion (2015-F-0055). Additionally, the duration of project effects would double in duration from five to ten years. Nevertheless, because (1) project activities would continue to occur primarily on already developed land, (2) consist of low-intensity impacts of

limited scale, and (3) the District would implement suitable avoidance and minimization measures we conclude that the authorization, as proposed, would not destroy or adversely modify critical habitat of the southwestern willow flycatcher.

Critical habitat of the California red-legged frog

As discussed above, the status of the critical habitat of the California red-legged frog in the action area has not changed substantially from the 2015 reinitiated biological opinion (2015-F-0055). However, the district has greatly increased its estimate of the geographic scale of effects on designated critical habitat because it is now including areas of critical habitat adjacent to its facilities. Additionally, the duration of project effects would double in duration from five to ten years. Nevertheless, because (1) project activities would continue to occur primarily on already developed land, (2) consist of low-intensity impacts of limited scale, and (3) the District would implement suitable avoidance and minimization measures we conclude that the authorization, as proposed, would not destroy or adversely modify critical habitat of the California red-legged frog.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened wildlife species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not the purpose of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this incidental take statement.

In June 2015, the Service finalized new regulations implementing the incidental take provisions of section 7(a)(2) of the Act. The new regulations also clarify the standard regarding when the Service formulates an Incidental Take Statement [50 CFR 402.14(g)(7)], from "…if such take may occur" to "…if such take is reasonably certain to occur." This is not a new standard, but merely a clarification and codification of the applicable standard that the Service has been using and is consistent with case law. The standard does not require a guarantee that take will result; only that the Service establishes a rational basis for a finding of take. The Service continues to rely on the best available scientific and commercial data, as well as professional judgment, in reaching these determinations and resolving uncertainties or information gaps.

AMOUNT OR EXTENT OF TAKE

We anticipate that some tidewater gobies, least Bell's vireos, southwestern willow flycatchers, and California red-legged frogs could be taken as a result of the proposed action. We expect the incidental take to be in the form of capture, injury, and kill. We cannot quantify the precise number of tidewater gobies, least Bell's vireos, southwestern willow flycatchers, and California red-legged frogs that may be taken as a result of the actions that the Corps has proposed because tidewater gobies, least Bell's vireo, southwestern willow flycatchers, and California red-legged frogs move over time; for example, animals may have entered or departed the action area since the time of pre-construction surveys. Other individuals may not be detected due to their cryptic nature, small size, and low mobility. The protective measures proposed by the Corps are likely to prevent mortality or injury of most individuals. In addition, finding a dead or injured tidewater goby, least Bell's vireo, southwestern willow flycatcher, or California red-legged frog is unlikely.

Consequently, we are unable to reasonably anticipate the actual number of tidewater gobies, least Bell's vireos, southwestern willow flycatchers, and California red-legged frogs that would be taken by the proposed project; however, we must provide a level at which formal consultation would have to be reinitiated. The Environmental Baseline and Effects Analysis sections of this biological opinion indicate that adverse effects to tidewater gobies, least Bell's vireos, southwestern willow flycatchers, and California red-legged frogs would likely be low given the nature of the proposed activities, and we, therefore, anticipate that take of tidewater gobies, least Bell's vireos, southwestern willow flycatchers, and California red-legged frogs would also be high/low. We also recognize that for every tidewater goby, least Bell's vireo, southwestern willow flycatcher, or California red-legged frog found dead or injured, other individuals may be killed or injured that are not detected, so when we determine an appropriate take level we are anticipating that the actual take would be higher and we set the number below that level.

Similarly, for estimating the number of tidewater gobies and California red-legged frogs that would be taken by capture, we cannot predict how many may be encountered for reasons stated earlier. While the benefits of relocation (i.e., minimizing mortality) outweigh the risk of capture, we must provide a limit for take by capture at which consultation would be reinitiated because high rates of capture may indicate that some important information about the species' in the action area was not apparent (e.g., it is much more abundant than thought). Conversely, because capture and relocation can be highly variable, depending upon the species and the timing of the activity, we do not anticipate a number so low that reinitiation would be triggered before the effects of the activity were greater than what we determined in the Effects Analysis.

The Incidental Take Statement contained within the 2015 reinitiated biological opinion (2015-F-0055) contained a thorough analysis of estimated incidental take as a result of project actions. As discussed above, we expect project effects to increase or decrease on tidewater gobies, least Bell's vireos, southwestern willow flycatchers, and California red-legged frogs proportionate to decreases or increases in the geographic scale of effects on these species. The geographic scale of effects has decreased by 0.085 percent on tidewater gobies, increased by 26 percent on least

Bell's vireos, increased by 1.5 percent on southwestern willow flycatcher, and increased by 51 percent on California red-legged frogs. Accordingly, we expect the number of tidewater gobies, least Bell's vireos, southwestern willow flycatchers, and California red-legged frogs that will be incidentally taken by project activities proposed by the current reinitiation to decrease or increase proportionately as well relative to the incidental take estimated by the 2015 reinitiated biological opinion (2015-F-0055).

Tidewater goby

The geographic scale of proposed project activities with potential to incidentally take tidewater gobies would remain relatively unchanged (a 0.085 percent decrease) for the relative to the scale analyzed within the 2015 reinitiated biological opinion (2015-F-0055). However, the duration of project effects has doubled relative to the scale of effects analyzed by the 2015 biological opinion (2015-F-0055). Therefore, we expect incidental take of tidewater gobies as a result of project activities to double the estimate contained within the 2015 reinitiated biological opinion (2015-F-0055) as well.

Therefore, if 20 adult, subadult, or juvenile tidewater gobies are found dead or wounded, the Corps must contact our office immediately to reinitiate formal consultation. Project activities that are likely to cause additional take should cease as the exemption provided pursuant to section 7(o)(2) may lapse and any further take could be a violation of section 4(d) or 9.

Least Bell's vireo

The geographic scale of proposed project activities with potential to incidentally take least Bell's vireo would increase by 26 percent relative to the scale analyzed within the 2015 reinitiated biological opinion (2015-F-0055). Additionally, the duration of project activities has doubled relative to the scale of effects analyzed by the 2015 biological opinion (2015-F-0055). Therefore, we expect incidental take of last Bell's vireos as a result of the proposed project activities to increase proportionately from the estimate contained within the 2015 reinitiated biological opinion (2015-F-0055) as well.

Therefore, if 3 (three) adult, subadult, or juvenile least Bell's vireos are found dead or wounded, the Corps must contact our office immediately to reinitiate formal consultation. Project activities that are likely to cause additional take should cease as the exemption provided pursuant to section 7(o)(2) may lapse and any further take could be a violation of section 4(d) or 9.

Southwestern willow flycatcher

The geographic scale of proposed project activities with potential to incidentally take southwestern willow flycatchers would remain relatively unchanged (a 1.5 percent increase) relative to the scale analyzed within the 2015 reinitiated biological opinion (2015-F-0055). However, the duration of project effects has doubled relative to the scale of effects analyzed by the 2015 biological opinion (2015-F-0055). Therefore, we expect incidental take of southwestern

willow flycatchers as a result of project activities to double the estimate contained within the 2015 reinitiated biological opinion (2015-F-0055) as well.

Therefore, if 2 (two) adult, subadult, or juvenile southwestern willow flycatchers are found dead or wounded, the Corps must contact our office immediately to reinitiate formal consultation. Project activities that are likely to cause additional take should cease as the exemption provided pursuant to section 7(o)(2) may lapse and any further take could be a violation of section 4(d) or 9.

California red-legged frog

The geographic scale of proposed project activities with potential to incidentally take California red-legged frogs would increase by 51 percent relative to the scale analyzed within the 2015 reinitiated biological opinion (2015-F-0055). Additionally, the duration of project activities has doubled relative to the scale of effects analyzed by the 2015 biological opinion (2015-F-0055). Therefore, we expect incidental take of California red-legged frogs as a result of the proposed project activities to increase from the estimate contained within the 2015 reinitiated biological opinion (2015-F-0055) proportionately as well.

Therefore, if any California red-legged frog egg mass is destroyed; if 6 (six) adult or metamorphosed California red-legged frogs are found dead or wounded; or if 90 California red-legged frogs of any age class are captured the Corps must contact our office immediately to reinitiate formal consultation. Project activities that are likely to cause additional take should cease as the exemption provided pursuant to section 7(o)(2) may lapse and any further take could be a violation of section 4(d) or 9.

EFFECT OF THE TAKE

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the species.

REASONABLE AND PRUDENT MEASURES

The measures described below are non-discretionary, and must be undertaken by the Corps or made binding conditions of any grant or permit issued to the (applicant), as appropriate, for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps (1) fails to assume and implement the terms and conditions or (2) fails to require the District to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, the Corps or the District must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR 402.14(i)(3)].

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize the impacts of the incidental take of least Bell's vireos, southwestern willow flycatchers, and California red-legged frogs:

1. The taking of least Bell's vireos and southwestern willow flycatchers must be minimized by using qualified biologists to conduct surveys or other activities related to the protection of these species; and

2. The take of California red-legged frogs from capture, relocation, and construction activities must be minimized by employing qualified biologists who are able to handle California red-legged frogs safely and without transmitting diseases or pathogens.

TERMS AND CONDITIONS

To be exempt from the prohibitions of section 9 of the Act, the Corps must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline reporting and monitoring requirements. These terms and conditions are non-discretionary.

The following terms and conditions implement reasonable and prudent measure 1:

a. Only qualified personnel authorized under the auspices of this reinitiated biological opinion (inclusive of personnel authorized under the original biological opinion (2012-F-0531) and reinitiated biological opinion (2015-F-0055)) can survey for, designate suitable buffers, and monitor for least Bell's vireos and southwestern willow flycatchers. The Corps, or the District on behalf of the Corps, must request our approval of any additional biologists they wish to employ to conduct these activities in association with the O&M Program. The request must be received at least 30 days prior to any such activities being conducted.

b. Due to the rarity of southwestern willow flycatchers in Ventura County, restoration within areas where southwestern willow flycatchers are known to occur should be designed to minimize the chance that birds returning to the area the following year would find the habitat unsuitable for nesting. This may involve leaving a certain percentage of giant reed (*Arundo donax*) in place to provide the vegetation structure these birds require. Additionally, any treatments required during the breeding season in areas known to support southwestern willow flycatcher nesting should be done with an abundance of caution, including robust pre-treatment surveys, large buffer areas, and other measures to minimize potential impacts to nesting birds. These recommendations should be developed by the qualified biologist.

The following terms and conditions implement reasonable and prudent measure 2:

a. Only qualified personnel authorized under the auspices of this reinitiated biological opinion (inclusive of personnel authorized under the original biological opinion (2012-F-0531) and reinitiated biological opinion (2015-F-0055)) can survey for, capture, and relocation California red-legged frogs. The Corps and the District must request our approval of any additional biologists at least 30 days prior to any such activities being conducted.

b. Latex or nitrile gloves must not be used when handling California red-legged frogs. Clean hands, free of lotions, sun screens, and fragrances are recommended. If gloves are necessary, well-rinsed vinyl gloves may be used.

c. To ensure that diseases are not conveyed between work sites by Service-approved biologists, the fieldwork code of practice developed by the Declining Amphibian Population Task Force must be followed at all times. A copy of the code of practice is enclosed as Appendix A of this document. The Service-approved biologist may substitute a bleach solution. Care must be taken so that all traces of the disinfectant are removed before entering the next aquatic habitat.

REPORTING REQUIREMENTS

Pursuant to 50 CFR 402.14(i)(3), the Corps must report the progress of the action and its impact on the species to the Service as specified in this incidental take statement. The Corps or the District must also provide an annual report by March 1st of the following year that includes the following:

- The programmatic consultation tracking sheet (Appendix A) populated with individual projects that were initiated under the auspices of the programmatic consultation (inclusive of the original biological opinion (2012-F-0531) and reinitiated biological opinion (2015-F-0055)) in that year;
- Documentation of the number of tidewater gobies, least Bell's vireos, southwestern willow flycatchers, and California red-legged frogs that were detected during surveys and project monitoring along with the location where they were found;
- Documentation of the number of tidewater gobies, least Bell's vireos, southwestern willow flycatchers, and California red-legged frogs that were taken during project activities, and the nature of the taking (e.g., capture, injury, etc.); and
- A brief discussion of any problems encountered in implementing minimization measures.

DISPOSITION OF DEAD OR INJURED SPECIMENS

As part of this incidental take statement and pursuant to 50 CFR 402.14(i)(1)(v), upon locating a dead or injured tidewater goby, least Bell's vireo, southwestern willow flycatcher, or California

red-legged frog, initial notification within 3 working days of its finding must be made by telephone and in writing to the Ventura Fish and Wildlife Office (805-644-1766). The report must include the date, time, location of the carcass, a photograph, cause of death or injury, if known, and any other pertinent information.

The Corps or the District must take care in handling injured animals to ensure effective treatment and care, and in handling dead specimens to preserve biological material in the best possible state. The Corps or the District must transport injured animals to a qualified veterinarian. Should any treated tidewater goby, least Bell's vireo, southwestern willow flycatcher, or California red-legged frog survive, the Corps or the District must contact the Service regarding the final disposition of the animal(s).

The remains of tidewater gobies, least Bell's vireos, southwestern willow flycatchers, or California red-legged frogs must be placed with educational or research institutions holding the appropriate State and Federal permits, such as the Santa Barbara Natural History Museum (Contact: Paul Collins, Santa Barbara Natural History Museum, Vertebrate Zoology Department, 2559 Puesta Del Sol, Santa Barbara, California 93105, telephone 805/682-4711 ext. 321).

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

> Long term maintenance of large scale restoration sites will be imperative to maintain the biological integrity of the habitat and ensure invasive plant species do not reinvade the area. We recommend that the Corps and the District work with the Service and other Partners to develop a strategy for ensuring that large scale restoration sites are maintained after the initial maintenance period has expired.

The Service requests notification of the implementation of any conservation recommendations so we may be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats.

REINITIATION NOTICE

This concludes formal consultation on the action outlined in the reinitiation request. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that

causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, the exemption issued pursuant to section 7(o)(2) may have lapsed and any further take could be a violation of section 4(d) or 9. Consequently, we recommend that any operations causing such take cease pending reinitiation.

If you have any questions about this biological opinion, please contact Dou-Shuan Yang of my staff at 805-677-3302, or by electronic mail at Dou-Shuan_Yang@fws.gov.

Sincerely,

Stephen P. Henry
Field Supervisor

LITERATURE CITED

[District] Ventura County Watershed Protection District. 2019. Ventura County Watershed Protection District Routine Operations and Maintenance Program USFWS Biological Opinion –Critical Habitat Analysis. Prepared by the Ventura County Watershed Protection District, Ventura, California.

[Service] U.S. Fish and Wildlife Service. 2012. Final Programmatic Biological and Conference opinion for Ventura County Watershed Protection District's Routine Operation and Maintenance Program, Ventura County, California (8-8-11-F/C-12; 2012-F-0531).

[Service] U.S. Fish and Wildlife Service. 2015. Reinitiated Biological Opinion for Ventura County Watershed Protection District's Routine Operation and Maintenance Program, Ventura County, California (8-8-18-F-7R, 2015-F-0055).

Best Management Practices to be followed during the Ventura River Watershed Giant Reed Removal Project

Herbicide Application

- All herbicide usage will occur only as directed by the written label, California Department of Pesticide Regulation (DPR), or the County Agricultural Commissioner.
- Only herbicides registered for use in California by the U.S. Environmental Protection Agency (EPA) and the DPR will be used.
- Only herbicides approved for aquatic use may be used in any area where herbicide has the potential to contact open water.
- Only herbicides approved for aquatic use may be used within the banks of rivers and tributaries.
- All adjuvants will be registered by the EPA and approved for use by the relevant environmental regulatory agencies.
- Only adjuvants approved for aquatic use may be used within the banks of rivers and tributaries.
- Herbicide application will be conducted and/or supervised by an individual with a current California DPR Qualified Applicator License (QAL) or Qualified Applicator Certificate (QAC).
- Herbicide usage will be limited to the minimum amount required to be effective.
- Herbicides will be applied according to the manufacturer's label specifications.
- Herbicides will be colored with a biodegradable dye to facilitate visual control of application.
- Avoidance measures such as pulling back or temporarily tarping desired vegetation will be used to the extent feasible to prevent unintended herbicide impacts.
- Herbicides will be secured or removed from staging areas at night.
- Herbicide storage during application, and the fueling and lubrication of mechanical equipment will be confined to staging areas.
- Herbicide will not be left unattended unless it is locked in a secure container, vehicle, or structure.
- All containers containing herbicide formulations will be clearly labeled with the herbicide type and concentration of active ingredient.
- Herbicide will not be applied during rain events or when rain is forecast in the next 24 hours, or within 24 hours following a rain event of 0.25 inches or more.
- Foliar application of herbicide will not be applied when winds are greater than ten miles per hour.
- Herbicide will not be applied if air temperature exceeds vitalization limits of herbicide, unless adjacent native species are protected (e.g., tarped).

~END~