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HABITAT CONSERVATION
PLANNING BRANCH

California Department of Fish and Wildlife
Northern Region
601 Locust Street
Redding, CA 96001

California Endangered Species Act
Incidental Take Permit No. 2081-2018-059-01

HUMBOLDT BAY MUNICIPAL WATER DISTRICT MAINTENANCE PROJECT

Authority: This California Endangered Species Act (CESA) incidental take permit (ITP) is issued by the California Department of Fish and Wildlife (CDFW) pursuant to Fish and Game Code section 2081, subdivisions (b) and (c), and California Code of Regulations, Title 14, § 783.0 et seq. CESA prohibits the take¹ of any species of wildlife designated by the California Fish and Game Commission as an endangered, threatened, or candidate species.² CDFW may authorize the take of any such species by permit if the conditions set forth in Fish and Game Code section 2081, subdivisions (b) and (c) are met (see Cal. Code Regs. Tit. 14, § 783.4).

Permittee:	Humboldt Bay Municipal Water District
Contact Person:	John Friedenbach
Mailing Address:	828 Seventh Street, PO Box 95, Eureka, CA

Effective Date and Expiration Date of this ITP:

This ITP shall be executed in duplicate original form and shall become effective once a duplicate original is acknowledged by signature of the Permittee on the last page of this ITP and returned to CDFW's Habitat Conservation Planning Branch at the address listed in the Notices section of this ITP. Unless renewed by CDFW, this ITP's authorization to take the Covered Species shall expire on **December 31, 2024**.

Notwithstanding the expiration date on the take authorization provided by this ITP, Permittee's obligations pursuant to this ITP do not end until CDFW accepts as complete the Permittee's Final Mitigation Report required by Condition of Approval 6.6 of this ITP.

¹Pursuant to Fish and Game Code section 86, "'take' means hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." (See also *Environmental Protection Information Center v. California Department of Forestry and Fire Protection* [2008] 44 Cal.4th 459, 507 [for purposes of incidental take permitting under Fish and Game Code § 2081, subdivision (b), "'take'...means to catch, capture or kill"]).

²The definition of an endangered, threatened, and candidate species for purposes of CESA are found in Fish and Game Code sections 2062, 2067, and 2068, respectively.

Project Location:

The project is located along the Mad River near Arcata, California in Humboldt County, and below the Matthews Dam in Trinity County, California. See Figures 1-2.

Project Description:

The District provides water for municipal and industrial uses. The District operates Matthews Dam within Trinity County, California where it stores and releases water for power generation and for re-diversion downstream in accordance with established water rights. The District operates 6 points of diversion including Ranney Collectors (Pump Stations No. 1-5) and surface flow intake (Pump Station No. 6) near Blue Lake (Essex Reach) within Humboldt County, California. The District installs and maintains instream berms and other structures for bank stabilization, to ensure flows are properly directed below Matthews Dam and at those points of diversion within the Essex Reach and for other purposes. The District manages vegetation and maintains some roads at its operational sites.

Specific project components include:

- Diversion to storage of Mad River stream flows at Matthews Dam and downstream release from the dam of water to keep fish in good condition to meet Fish and Game Code (FGC) §5937.
- Diverting water in the Essex Reach by sub-surface means using Ranney collectors and from surface flow using a direct diversion facility.
- Bypass Mad River stream flows below the diversion facilities at the Essex Reach to provide for fish protective flows to meet FGC §5901.
- Clearing vegetation and debris and cleaning channel in order to maintain adequate capacity in the tailrace and spillway pools below Matthews Dam.
- Dredging of the forebay and removing aggraded material from intake area at the direct diversion facility (Pump Station No. 6).
- Maintaining adequate flow to Pump Station No. 6 during low-flow conditions by constructing a channel. Maintaining adequate water surface elevation to the direct diversion Pump Station No. 6 during low-flow months by construction of a gravel berm.
- Gaining access to and maintaining Ranney collectors, which may involve building temporary gravel structures in the bed of the Mad River to access the collectors.
- Protecting the stream banks and structures by maintaining or repairing existing rock structures or revetments or installing such structures in the Essex Reach to protect pump stations in the Essex Reach, and in the tailrace outlet and plunge pool downstream of Matthews Dam.

Covered Species Subject to Take Authorization Provided by this ITP:

This ITP covers the following species:

Name	CESA Status
1. Foothill yellow-legged frog (<i>Rana boylei</i>)	Candidate ³

This species and only this species is the "Covered Species" for the purposes of this ITP.

Impacts of the Taking on Covered Species:

The following Project activities are expected to result in the incidental take of Covered Species.

- Clearing vegetation and debris and cleaning channel in order to maintain adequate capacity in the tailrace and spillway pools below Matthews Dam.
- Dredging of the forebay and removing aggraded material from intake area at the direct diversion facility (Pump Station No. 6).
- Maintaining adequate flow to Pump Station No. 6 during low-flow conditions by constructing a channel. Maintaining adequate water surface elevation to the direct diversion Pump Station No. 6 during low-flow months by construction of a gravel berm.
- Gaining access to and maintaining Ranney collectors, which may involve building temporary gravel structures in the bed of the Mad River to access the collectors.
- Protecting the stream banks and structures by maintaining or repairing existing rock structures or revetments or installing such structures in the Essex Reach to protect pump stations in the Essex Reach, and in the tailrace outlet and plunge pool downstream of Matthews Dam.

Incidental take of Covered Species in the form of mortality (kill) may occur during channel maintenance activities described above when Covered Species remaining in the substrate in the work area may be entrapped and crushed by heavy equipment. The areas where authorized take of the Covered Species is expected to occur include those described under "Project Location" (see also Figures 1-2): These areas are collectively known as the Project Area.

The Project is expected to cause the temporary loss of 0.25 acres of habitat for the Covered

³The species status may change following the decision of the Fish and Game Commission to designate the species as threatened or endangered but if there is such a designation, the species will remain a Covered Species.

Species. Impacts of the authorized taking also include adverse impacts to the Covered Species related to temporal habitat losses, increased habitat fragmentation and edge effects, and the Project's incremental contribution to cumulative impacts (indirect impacts). These impacts include: stress resulting from noise and vibrations from heavy equipment work and capture and relocation, and long-term effects due to displacement from preferred habitat, increased competition for food and space, and increased vulnerability to predation.

Incidental Take Authorization of Covered Species:

This ITP authorizes incidental take of the Covered Species and only the Covered Species. With respect to incidental take of the Covered Species, CDFW authorizes the Permittee, its employees, contractors, and agents to take Covered Species incidentally in carrying out the Covered Activities, subject to the limitations described in this section and the Conditions of Approval identified below. This ITP does not authorize take of Covered Species from activities outside the scope of the Covered Activities, take of Covered Species outside of the Project Area, take of Covered Species resulting from violation of this ITP, or intentional take of Covered Species except for capture and relocation of Covered Species as authorized by this ITP.

Conditions of Approval:

Unless specified otherwise, the following measures apply to all Covered Activities within the Project Area, including areas used for vehicular ingress and egress, staging and parking, and noise and vibration generating activities that may/will cause take. CDFW's issuance of this ITP and Permittee's authorization to take the Covered Species are subject to Permittee's compliance with and implementation of the following Conditions of Approval:

1. **Legal Compliance:** Permittee shall comply with all applicable federal, state, and local laws in existence on the effective date of this ITP or adopted thereafter.
2. **CEQA Compliance:** The Humboldt Bay Municipal Water District Project (Lead Agency) adopted a Negative Declaration for the Project on May 13, 2009 (SCH No. 2003072036).
3. **LSA Agreement Compliance:** Permittee shall implement and adhere to the mitigation measures and conditions related to the Covered Species in long-term Lake and Streambed Alteration Agreement 1600-2010-0093-0000-R1 for the Project executed by CDFW pursuant to FGC section 1600 et seq.
4. **ITP Time Frame Compliance:** Permittee shall fully implement and adhere to the conditions of this ITP within the time frames set forth below and as set forth in the Mitigation Monitoring and Reporting Program (MMRP), which is included as Attachment 1 to this ITP.

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HUMBOLDT BAY MUNICIPAL WATER DISTRICT

5. General Provisions:

- 5.1. Designated Representative. Before starting Covered Activities, Permittee shall designate a representative (Designated Representative) responsible for communications with CDFW and overseeing compliance with this ITP. Before starting Covered Activities, Permittee shall notify CDFW in writing (email preferred) of the Designated Representative's name, business address, and contact information, and shall notify CDFW in writing if a substitute Designated Representative is selected or identified at any time during the term of this ITP.
- 5.2. Designated Biologist. Permittee shall submit to CDFW in writing (email preferred) the name, qualifications, business address, and contact information of a Designated Biologist (DB) at least 30 days before starting Covered Activities, unless CDFW agrees to approve a DB in less time. Permittee shall ensure that the DB is knowledgeable and experienced in the biology, natural history, survey techniques, and collecting and handling of the Covered Species. The DB shall be responsible for monitoring Covered Activities to help minimize, fully mitigate and/or avoid the incidental take of the Covered Species, and to minimize disturbance of Covered Species habitat. Permittee shall obtain CDFW approval of the DB in writing before starting Covered Activities and shall also obtain approval in advance in writing if the DB must be changed.
- 5.3. DB Authority. To ensure compliance with the Conditions of Approval of this ITP, the DB shall have authority to immediately stop any activity that does not comply with this ITP, and/or to order any reasonable measure to avoid the unauthorized take of the Covered Species.
- 5.4. Education Program. Permittee shall conduct an education program for all persons employed or otherwise working in the Project Area before performing any work. The program shall consist of a presentation from the DB that includes a discussion of the biology and general behavior of the Covered Species, information about the distribution and habitat needs of the Covered Species, sensitivity of the Covered Species to disturbance, its status pursuant to CESA including legal protection, recovery efforts, penalties for violations and Project-specific protective measures described in this ITP. Permittee shall provide interpretation for non-English speaking workers, and the same instruction shall be provided to any new workers before they are authorized to perform work in the Project Area. Permittee shall prepare and distribute wallet-sized cards or a fact sheet handout containing this information for workers to carry in the Project Area. Upon completion of the program, employees shall sign a form stating they attended the program and understand all protection measures. This training shall be repeated at least once annually for long-term and/or permanent employees that will be conducting work in the Project Area.

- 5.5. Construction Monitoring Notebook. The DB shall maintain a construction-monitoring notebook on-site throughout the construction period, which shall include a copy of this ITP with attachments and a list of signatures of all personnel who have successfully completed the education program. Permittee shall ensure a copy of the construction-monitoring notebook is available for review at the Project site upon request by CDFW.
- 5.6. Erosion Control Materials. Permittee shall prohibit use of erosion control materials potentially harmful to Covered Species and other species, such as monofilament netting (erosion control matting) or similar material, in potential Covered Species habitat. All erosion control materials shall be 100 percent biodegradable and shall not entrap or harm wildlife. Photodegradable synthetic products are not considered biodegradable.
- 5.7. Avoiding Covered Species Habitat. Permittee shall ensure that vehicles, personnel, and Project activities are minimized within 25 feet of the wetted edge of streams, riparian habitat, or other Covered Species habitat as determined by the DB. With the exceptions of Covered Activities that require in or near stream work, these habitats should be avoided to the greatest extent feasible. When Project activities occur within 25 feet of Covered Species habitat, stakes, flags, rope, cord, and/or fencing may be used if deemed necessary by the DB to minimize disturbance of Covered Species habitat.
- 5.8. Project Access. Project-related personnel shall access the Project Area using existing routes, or routes identified in the Project Description and shall not cross Covered Species habitat outside of these routes. Permittee shall restrict Project-related vehicle traffic to established roads, staging, and parking areas. Permittee shall ensure that vehicle speeds within 20 feet of surface water (the wetted edge of a river or stream, or a wetland area) do not exceed 5 miles per hour.
- 5.9. Staging Areas. Permittee shall confine all Project-related parking, storage areas, laydown sites, equipment storage, and any other surface-disturbing activities to previously disturbed areas to the extent feasible. Additionally, Permittee shall not use or cross Covered Species habitat outside of the Project Area except as described in this ITP.
- 5.10. Hazardous Waste. Permittee shall immediately stop and, pursuant to pertinent State and federal statutes and regulations, arrange for repair and clean up by qualified individuals of any fuel or hazardous waste leaks or spills at the time of occurrence, or as soon as it is safe to do so. Permittee shall exclude the storage and handling of hazardous materials from the Project Area and shall properly contain and dispose of any unused or leftover hazardous products off-site.

- 5.11. CDFW Access. Permittee shall provide CDFW staff with access to the Project site and mitigation areas, and shall otherwise fully cooperate with CDFW efforts to verify compliance with or effectiveness of mitigation measures set forth in this ITP.
- 5.12. Refuse Removal. Upon completion of Covered Activities, Permittee shall remove from the Project Area and properly dispose of all refuse including, but not limited to, broken equipment parts, vehicles or parts of vehicles, tires, wrapping material, cords, cables, wire, rope, strapping, twine, buckets, metal or plastic containers, and boxes.

6. Monitoring, Notification, and Reporting Provisions:

- 6.1. Notification Before Commencement. The Designated Representative shall notify CDFW at least 7 calendar days before starting Covered Activities and shall document compliance with all pre-Project Conditions of Approval before starting Covered Activities.
- 6.2. Notification of Non-compliance. The Designated Representative shall immediately notify CDFW in writing if it determines that the Permittee is not in compliance with any Condition of Approval of this ITP including, but not limited to, any actual or anticipated failure to implement measures within the time periods indicated in this ITP and/or the MMRP. The Designated Representative shall report any noncompliance with this ITP to CDFW within 24 hours.
- 6.3. Compliance Monitoring. The DB shall be on-site daily when Covered Activities occur that may result in take of Covered Species. The DB shall conduct compliance inspections to: (1) minimize incidental take of the Covered Species; (2) prevent unlawful take of Covered Species; (3) check for compliance with all measures of this ITP; (4) check all exclusion zones; and (5) ensure that any signs, stakes, and fencing are intact, and that Covered Activities are only occurring in the Project Area. The Designated Representative or DB shall prepare daily written observation and inspection records summarizing: oversight activities and compliance inspections, observations of Covered Species and their sign, survey results, and monitoring activities required by this ITP.
- 6.4. Annual Compliance Report. The Designated Representative or DB shall compile the observation and inspection records identified in Condition of Approval 6.3 into an Annual Compliance Report (ACR) and submit it to CDFW no later than December 31 of every year beginning with issuance of this ITP and continuing until CDFW accepts the Final Mitigation Report identified in measure 6.6 below, along with a copy of the MMRP table with notes showing the current implementation status of each mitigation measure. Additionally, the ACR shall include: 1) an assessment of

the effectiveness of each completed or partially completed mitigation measure in avoiding, minimizing and mitigating Project impacts; 2) all available information about Project-related incidental take of the Covered Species; 3) an accounting of the number of acres subject to both temporary and permanent disturbance, both for the prior calendar year, and a total since ITP issuance; and 4) information about other Project impacts on the Covered Species. The ACR shall be submitted to the CDFW offices listed in the Notices section of this ITP and via email to CDFW's Regional Representative and Headquarters CESA Program. At the time of this ITP's approval, the CDFW Regional Representative is Jennifer Olson (jennifer.olson@wildlife.ca.gov), and Headquarters CESA Program email is CESA@wildlife.ca.gov. CDFW may at any time increase the timing and number of compliance inspections and reports required under this provision depending upon the results of previous compliance inspections. If CDFW determines the reporting schedule must be changed, CDFW will notify Permittee in writing of the new reporting schedule.

- 6.5. CNDDDB Observations. The DB or DR shall submit all observations of Covered Species to CDFW's California Natural Diversity Database (CNDDDB) within 60 calendar days of the observation and the DB or DR shall include copies of the submitted forms with the next ACR.
- 6.6. Final Mitigation Report. No later than 45 days after completion of all mitigation measures, Permittee shall provide CDFW with a Final Mitigation Report. The DB shall prepare the Final Mitigation Report which shall include at a minimum: (1) a summary of all ACRs; (2) a copy of the table in the MMRP with notes showing when each of the mitigation measures was implemented; (3) all available information about Project-related incidental take of the Covered Species; (4) information about other Project impacts on the Covered Species; (5) beginning and ending dates of Covered Activities; (6) an assessment of the effectiveness of this ITP's Conditions of Approval in minimizing and fully mitigating Project impacts of the taking on Covered Species; (7) recommendations on how mitigation measures might be changed to more effectively minimize take and mitigate the impacts of future Projects on the Covered Species; and (8) any other pertinent information.

7. Take Minimization Measures:

The following requirements are intended to ensure the minimization of incidental take of Covered Species in the Project Area during Covered Activities. Permittee shall implement and adhere to the following conditions to minimize take of Covered Species:

- 7.1. Visual Encounter Egg-mass Surveys. The DB shall conduct Visual Encounter Surveys (VES) for the egg masses of the Covered Species in any potential Covered Species breeding habitat (margins of streams) within 300 feet (150 feet

up-and downstream) of where Covered Activities may occur within that year. VES shall commence with the onset of the breeding season. The onset of the breeding season is generally during the receding spring hydrograph, and typically begins during the month of May in the Project area. Unusually wet or dry years may require earlier or later initiation of survey efforts, and the DB should coordinate with the CDFW Regional Representative to ensure surveys are timed appropriately. It is critical to identify the onset of breeding because egg masses mature and hatch quickly (approximately 2-3 weeks). During a VES, observer(s) shall walk and/or wade along the margins of the stream visually inspecting all suitable habitat, and recording locations of egg masses of the Covered Species with a GPS unit. A corresponding developmental stage shall be recorded for each egg mass based on Gosner stage (Figure 2). The VES shall be conducted within the boundaries of the Project Area plus a 150-foot buffer zone upstream and downstream of the Project area. The DB shall conduct a VES for egg masses within the Project area every 7-10 days until July 1, or until no fresh egg masses have been observed for 14 days, whichever comes first.

- 7.2. Egg Mass Relocation Plan. If egg masses are observed within 100 feet upstream or downstream of locations where they may be disturbed by Project activities, the DB shall notify CDFW within seven business days by submitting a Relocation Plan via email to the Regional Representative as designated in this ITP. The Relocation Plan shall contain approximate numbers and locations of egg masses to be relocated, and shall quantify the amount, location, and quality of suitable receiving habitat a minimum of 150 feet from the disturbance location, and describe methods for marking and monitoring each relocated egg mass to determine success rates of egg mass relocation. CDFW shall have at least three business days to comment on the Relocation Plan. If CDFW approves the Plan or has no comments, the DB shall proceed in relocating egg masses to the proposed receiving habitat by gently placing the egg mass and its attachment substrate into a 5-gallon bucket with fresh stream water, and immediately transporting the eggs below the disturbance location to the previously identified receiving habitat. Upstream receiving habitat should only be considered if insufficient habitat exists downstream. Two or three egg masses, depending on rock size, will fit in one bucket. Egg masses must be submerged at all times. Aeration is not required, assuming bucket retention time is brief. Within the receiving habitat, the DB will gently place the egg mass and its rock in appropriate depth and velocity edge water. Other egg masses will already be present in the receiving habitat, so it is important to note their location and avoid disturbing them during relocation procedures. If any egg masses become detached from their cobble, they shall be enclosed with cobble in the sheltered low-flow receiving habitat. Relocated egg masses shall be marked with an inconspicuous marker (e.g. small wooden stake, pin flag, colored rock, etc.) that is numbered for future monitoring, and a GPS location shall be taken. Relocated egg masses shall be monitored weekly and approximate Gosner stage recorded until they are

completely hatched, after which the marker shall be removed. All egg mass relocation data shall be submitted in monitoring reports, including egg masses that do not continue to develop after relocation, or do not survive for some other reason (washed away, desiccated, or otherwise destroyed).

- 7.3. Seasonal Work Restriction. Permittee shall ensure that Covered Activities involving construction and heavy equipment use (such as excavation, grading, and contouring) that are conducted in streams, ponds, and riparian areas are limited to the period from June 15 to October 15 of each year (Dry Season) until the expiration of this ITP, unless the Permittee receives prior approval for work outside this window from CDFW.
- 7.4. Pre-disturbance Relocation Plan. In addition to the pre-construction surveys and egg mass relocation as described in measures 7.1 and 7.2, the DB shall survey the disturbance footprint within 14 days preceding Covered Activities to determine whether tadpoles and/or juvenile or adults of the Covered Species are present within the footprint or a 25-foot buffer area. If Covered Species of any life stage are present, the DB shall develop and submit a Relocation Plan to CDFW at least seven days prior to proposed installation. CDFW shall have at least three business days to comment on the Relocation Plan. The Relocation Plan shall include what life stage(s) will be relocated (e.g., adults, tadpoles, or egg masses) and specific protocols for each life stage. The Relocation Plan shall quantify the amount, location, and quality of suitable receiving habitat. The Relocation Plan shall include capture and handling methods specific to each life stage. Covered Species shall be handled using methodology described in the Restraint and Handling of Live Amphibians (Attachment 2), and in accordance with the Fieldwork Code of Practice (Attachment 3).
- 7.5. Covered Species Observation. During all phases of Project construction operation and maintenance, all workers shall inform the DB if they encounter Covered Species within or near the Project site. All Covered Activities with potential to take the Covered Species shall cease until the animal is relocated, if the DB determines that relocation is necessary.
- 7.6. No Night Work or Lighting. Permittee shall not use night lighting in the Project Area. All Project activity shall terminate 30 minutes before sunset and shall not resume until 30 minutes after sunrise. The Permittee shall use sunrise and sunset times established by the U.S. Naval Observatory Astronomical Applications Department for the geographic area where the Project is located (http://aa.usno.navy.mil/data/docs/RS_OneDay.php).
- 7.7. Decontamination. Permittee shall ensure all Project personnel adhere to the current version of the California Department of Fish and Wildlife Aquatic Invasive Species Decontamination Protocol (Attachment 5) for all field gear and equipment that will be

in contact with water or Covered Species. Heavy equipment and other motorized or mechanized equipment that comes in contact with water should generally follow watercraft decontamination protocols found in the Decontamination Protocol.

8. Habitat Restoration:

CDFW has determined that creation and management of compensatory habitat is required pursuant to CESA to fully mitigate Project-related take of Covered Species. This determination is based on factors including an assessment of the importance of the habitat in the Project Area, the extent to which the Covered Activities will impact the habitat, and CDFW's estimate of the acreage required to provide for adequate compensation.

To meet this requirement, the Permittee shall create or restore on-site at least 0.5 acres of impacted Covered Species habitat pursuant to Condition of Approval 8.1 below. This habitat restoration must be initiated within one year of the effective date of the permit according to an approved plan pursuant to measure 8.1 below and shall be completed by the expiration date of this ITP.

8.1. Habitat Restoration. In order to fully mitigate Project-related impacts of the taking on the Covered Species, Permittee shall create or restore 0.5 acres of riparian habitat. Permittee shall prepare a Riparian Restoration Plan and shall ensure that the Plan is successfully implemented during the term of this ITP. The plan shall be submitted to CDFW for approval within 90 days of the effective date of this ITP, and shall include, at a minimum:

8.1.1. Location of the restoration site(s): This section shall include a regional map, general map illustrating planting locations (polygons), location or any other existing or proposed restoration actions in the general vicinity, ownership information, and directions to the site.

8.1.2. Site Preparation and installation methods: The section shall provide a description of the methods that will be used to install the plants with a detailed discussion for each plant species and type of planting stock (container, stem cutting, pole cutting, bare-root stock, etc.), time of the year during which the planting will occur, and any other pertinent information regarding implementation of the project, any necessary site prep work (i.e. heavy equipment work, stabilization, soil work, etc.) shall be described in this section of the plan.

8.1.3. Materials: This section shall provide the list of plant species to be utilized, size of specimens to be used for each species, number of plants, the source of plant materials to be used, and irrigation materials, if necessary. Information

regarding the need for plant protection and the materials necessary to accomplish protection shall be included.

- 8.1.4. Schematic: This section shall include a detailed planting design that depicts exactly where the plants will go in the restoration area, including the number of plants and which species to be planted in each location, spacing between plants, and total acreage planned for revegetation.
- 8.1.5. Maintenance of plants: This section shall include a description of methods that will be used to maintain plants in good condition, to control non-native vegetation, and prevention of herbivory to the plantings, including a discussion of how maintenance actions will be triggered by changes in plant health over time. If the planting will be irrigated, this section shall include an irrigation plan that describes the type of irrigation system that will be used and the watering regime that will be used to successfully establish the plantings. The irrigation plan should be designed to discourage the growth of invasive plants while encouraging deep rooting of planted materials to ensure maximum survival following the plant establishment period.
- 8.1.6. Success Criteria: This section shall include the performance criteria that will be used to evaluate project success. Performance criteria should be developed for species diversity, structural diversity, overall vegetative cover by species (if important) and how cover will be measured (absolute vs. relative); density (by species); plant vigor; and survivorship. In addition, intermediate thresholds (incremental progress toward performance criteria) should be developed in conjunction with an adaptive management plan that triggers remedial activities that would be implemented if intermediate thresholds are not being met. This will allow the revegetation specialist to increase the likelihood that performance criteria are met by the end of the monitoring period.
- 8.1.7. Monitoring methods: This section shall include a detailed description of how the project will be monitored to evaluate whether performance criteria are being met. This section should include a detailed description of the methods used for data collection, sample size, data entry and storage, statistical analyses to be performed, photo point locations, and a description of the monitoring report format.
- 8.1.8. Adaptive management and contingency measures: This section shall describe the projects adaptive management strategies and what actions shall be implemented if the monitoring data indicates that the performance criteria may not be met. This section shall identify the party responsible for implementing remedial measures and the source(s) of funding to complete actions.

9. Performance Security

The Permittee may proceed with Covered Activities only after the Permittee has ensured funding (Security) to complete any activity required by Condition of Approval 8 that has not been completed before Covered Activities begin. Permittee shall provide Security as follows:

- 9.1. Security Amount. The Security shall be in the amount of **\$6,000**. This amount is based on the cost estimates for riparian planting of 0.5 acres using a combination of container stock and on-site materials at \$6,000/acre, and costs of preparing a restoration plan.
- 9.2. Security Form. The Security shall be in the form of an irrevocable letter of credit (see Attachment 4), Surety Bond, or another form of Security approved in advance in writing by CDFW's Office of the General Counsel.
- 9.3. Security Timeline. The Security shall be provided to CDFW before Covered Activities begin or within 30 days after the effective date of this ITP, whichever occurs first.
- 9.4. Security Holder. The Security shall be held by CDFW or in a manner approved in advance in writing by CDFW.
- 9.5. Security Transmittal. If CDFW holds the Security, Permittee shall transmit it to CDFW with a completed Mitigation Payment Transmittal Form or by way of an approved instrument such as escrow, irrevocable letter of credit, or other.
- 9.6. Security Drawing. The Security shall allow CDFW to draw on the principal sum if CDFW, in its sole discretion, determines that the Permittee has failed to comply with the Conditions of Approval of this ITP.
- 9.7. Security Release. The Security (or any portion of the Security then remaining) shall be released to the Permittee after CDFW has conducted an on-site inspection and received confirmation that all secured requirements have been satisfied.

Amendment:

This ITP may be amended as provided by California Code of Regulations, Title 14, § 783.6, subdivision (c), and other applicable law. This ITP may be amended without the concurrence of the Permittee as required by law, including if CDFW determines that continued implementation of the Project as authorized under this ITP would jeopardize the continued

existence of the Covered Species or where Project changes or changed biological conditions necessitate an ITP amendment to ensure that all Project-related impacts of the taking to the Covered Species are minimized and fully mitigated.

Stop-Work Order:

CDFW may issue Permittee a written stop-work order requiring Permittee to suspend any Covered Activity for an initial period of up to 25 days to prevent or remedy a violation of this ITP including, but not limited to, the failure to comply with reporting or monitoring obligations, or to prevent the unauthorized take of any CESA endangered, threatened, or candidate species. Permittee shall stop work immediately as directed by CDFW upon receipt of any such stop-work order. Upon written notice to Permittee, CDFW may extend any stop-work order issued to Permittee for a period not to exceed 25 additional days. Suspension and revocation of this ITP shall be governed by California Code of Regulations, Title 14, § 783.7, and any other applicable law. Neither the DB nor CDFW shall be liable for any costs incurred in complying with stop-work orders.

Compliance with Other Laws:

This ITP sets forth CDFW's requirements for the Permittee to implement the Project pursuant to CESA. This ITP does not necessarily create an entitlement to proceed with the Project. Permittee is responsible for complying with all other applicable federal, state, and local law.

Notices:

The Permittee shall deliver a fully executed duplicate original ITP by registered first class mail or overnight delivery to the following address:

Habitat Conservation Planning Branch
California Department of Fish and Wildlife
Attention: CESA Permitting Program
Post Office Box 944209
Sacramento, CA 94244-2090

Written notices, reports and other communications relating to this ITP shall be delivered to CDFW by registered first class mail at the following address, or at addresses CDFW may subsequently provide the Permittee. Notices, reports, and other communications shall reference the Project name, Permittee, and ITP Number (2081-2018-059-01) in a cover letter and on any other associated documents.

Original cover with attachment(s) to:

Tina Bartlett, Regional Manager

Incidental Take Permit
No. 2081-2018-059-01
HUMBOLDT BAY MUNICIPAL WATER DISTRICT

California Department of Fish and Wildlife
601 Locust Street
Redding, CA 96001
(530) 225-2300

and a copy to:

Habitat Conservation Planning Branch
California Department of Fish and Wildlife
Attention: CESA Permitting Program
Post Office Box 944209
Sacramento, CA 94244-2090

Unless Permittee is notified otherwise, CDFW's Regional Representative for purposes of addressing issues that arise during implementation of this ITP is:

Jennifer Olson, Environmental Scientist
619 Second Street
Eureka, CA 95501
(707) 445-5387
jennifer.olson@wildlife.ca.gov

Compliance with CEQA:

CDFW's issuance of this ITP is subject to CEQA. CDFW is a responsible agency pursuant to CEQA with respect to this ITP because of prior environmental review of the Project by the Lead Agency (See generally Pub. Resources Code, §§ 21067, 21069.) The Lead Agency's prior environmental review of the Project is set forth in the CEQA document described in Condition of Approval 2, 'CEQA Compliance'. At the time the Lead Agency adopted the MND, it also adopted various mitigation measures for the Covered Species as conditions of Project approval.

This ITP, along with CDFW's related CEQA findings, which are available as a separate document, provide evidence of CDFW's consideration of the lead agency's EIRs for the Project and the environmental effects related to issuance of this ITP (CEQA Guidelines, § 15096, subd. (f)). CDFW finds that issuance of this ITP will not result in any previously undisclosed potentially significant effects on the environment or a substantial increase in the severity of any potentially significant environmental effects previously disclosed by the lead agency. Furthermore, to the extent the potential for such effects exists, CDFW finds adherence to and implementation of the Conditions of Project Approval adopted by the lead agencies, and that adherence to and implementation of the Conditions of Approval imposed by CDFW through the issuance of this ITP, will avoid or reduce to below a level of

Incidental Take Permit
No. 2081-2018-059-01
HUMBOLDT BAY MUNICIPAL WATER DISTRICT

significance any such potential effects. CDFW consequently finds that issuance of this ITP will not result in any significant, adverse impacts on the environment.

Findings Pursuant to CESA:

These findings are intended to document CDFW's compliance with the specific findings requirements set forth in CESA and related regulations. (Fish & G. Code § 2081, subs. (b)-(c); Cal. Code Regs., tit. 14, §§ 783.4, subds, (a)-(b), 783.5, subd. (c)(2).)

CDFW finds based on substantial evidence in the ITP application, MND, the result of the June 18 and 21 2018 field visits, and the administrative record of proceedings, that issuance of this ITP complies and is consistent with the criteria governing the issuance of ITPs pursuant to CESA:

- (1) Take of Covered Species as defined in this ITP will be incidental to the otherwise lawful activities covered under this ITP;
- (2) Impacts of the taking on Covered Species will be minimized and fully mitigated through the implementation of measures required by this ITP and as described in the MMRP. Measures include: (1) habitat creation and enhancement; (2) establishment of avoidance zones and relocation plans (3) worker education; and (4) Monthly Compliance Reports. CDFW evaluated factors including an assessment of the importance of the habitat in the Project Area, the extent to which the Covered Activities will impact the habitat, and CDFW's estimate of the acreage required to provide for adequate compensation. Based on this evaluation, CDFW determined that the enhancement of 0.5 acres of compensatory habitat that is contiguous with other protected Covered Species habitat, along with the minimization, monitoring, reporting, and funding requirements of this ITP minimizes and fully mitigates the impacts of the taking caused by the Project;
- (3) The take avoidance and mitigation measures required pursuant to the conditions of this ITP and its attachments are roughly proportional in extent to the impacts of the taking authorized by this ITP;
- (4) The measures required by this ITP maintain Permittee's objectives to the greatest extent possible;
- (5) All required measures are capable of successful implementation;
- (6) Permittee has ensured adequate funding to implement the measures required by this ITP as well as for monitoring compliance with, and the effectiveness of, those measures for the Project; and

(7) Issuance of this ITP will not jeopardize the continued existence of the Covered Species based on the best scientific and other information reasonably available, and this finding includes consideration of the species' capability to survive and reproduce, and any adverse impacts of the taking on those abilities in light of (1) known population trends; (2) known threats to the species; and (3) reasonably foreseeable impacts on the species from other related projects and activities. Moreover, CDFW's finding is based, in part, on CDFW's express authority to amend the terms and conditions of this ITP without concurrence of the Permittee as necessary to avoid jeopardy and as required by law.

Attachments:

FIGURE 1-2	Maps of Project Area
FIGURE 3	Gosner Stages
FIGURE 4	Sample Visual Encounter Surveys (VES) Datasheet
ATTACHMENT 1	Mitigation Monitoring and Reporting Program (MMRP)
ATTACHMENT 2	Restraint and Handling of Live Amphibians
ATTACHMENT 3	Fieldwork Code of Practice
ATTACHMENT 4	Letter of Credit Template
ATTACHMENT 5	Decontamination Protocol

ISSUED BY THE CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

on 9/18/19



Tina Bartlett, Regional Manager
NORTHERN REGION

ACKNOWLEDGMENT

The undersigned: (1) warrants that he or she is acting as a duly authorized representative of the Permittee, (2) acknowledges receipt of this ITP, and (3) agrees on behalf of the Permittee to comply with all terms and conditions

By: Humboldt Bay Municipal Water District
John Friedenbach Date: 9-20-19

Printed Name: John Friedenbach Title: General Manager

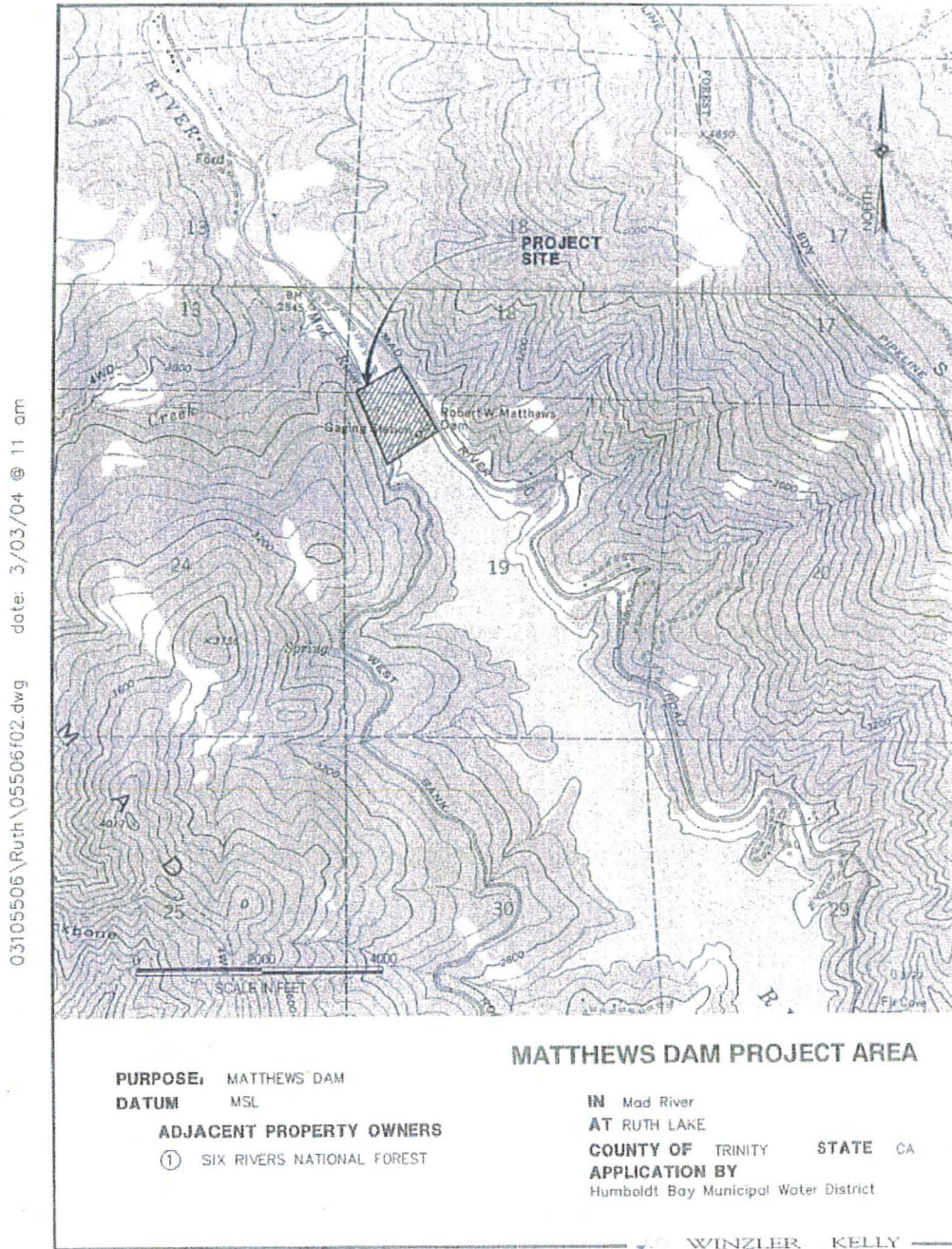
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Figure 1: Mad River near Essex Site Map



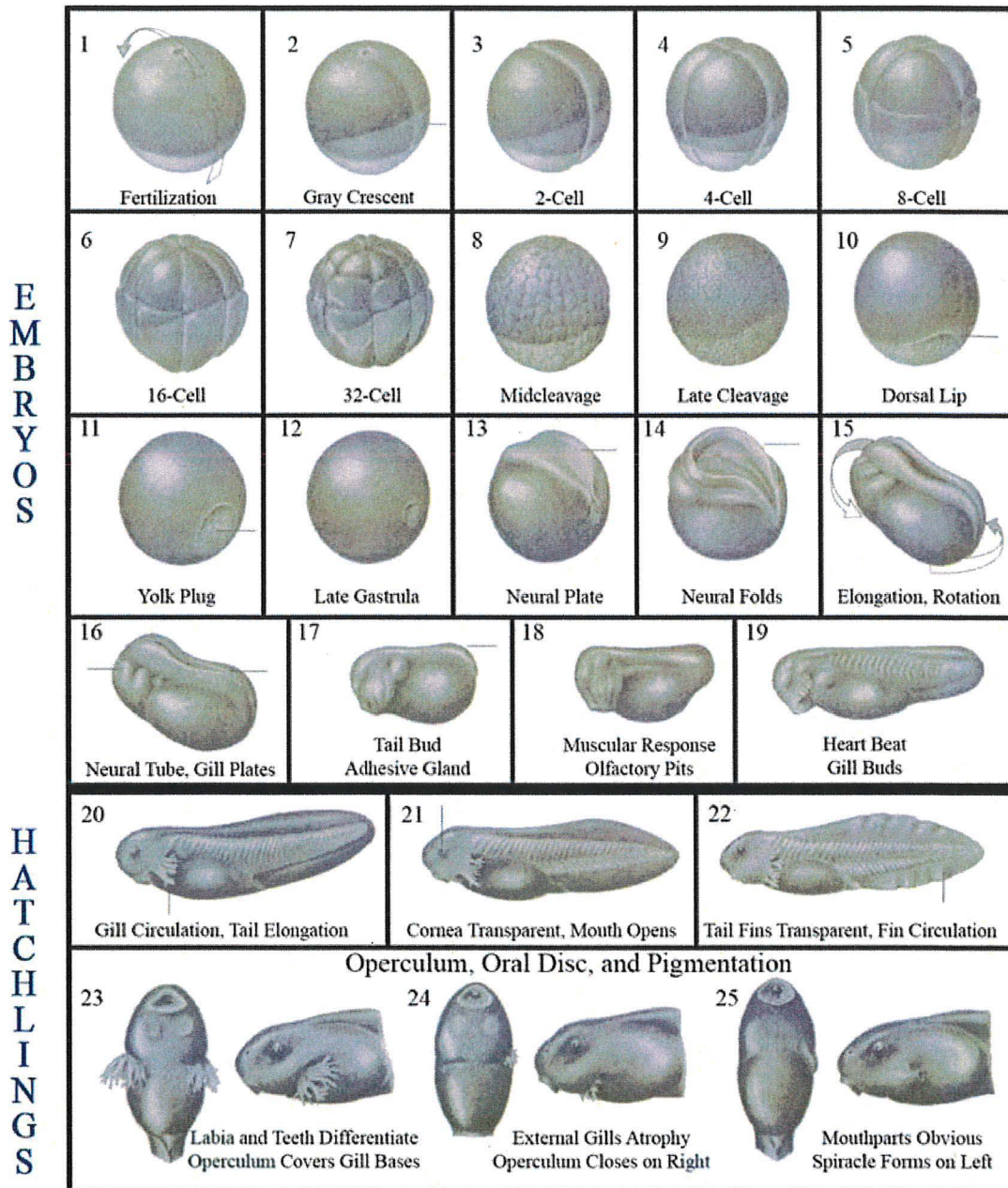
Figure 2: Matthews Dam Site Map

Attachment A



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Figure 3: Gosner Stages



From Gosner, K. (1960). A Simplified Table for Staging Anuran Embryos and Larvae with Notes on Identification. *Herpetologica*, 16(3), 183-190.

Stages 1 – 14: **ROUND**

Stages 15 – 19: **BEAN**

Stages 20 – 22: **TAIL**

An egg mass is considered “HATCHED” as soon as one tadpole has exited and is freely swimming.

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Figure 4: Sample VES Datasheet

Date:		2018 CDFW RABO Visual Encounter Egg Mass Survey						
Location:		Site Photos ID #		Sky:	Moisture:	Observers:		
Start Time:		GPS Unit Used:		Temp:	Wind:			
End Time:		GPS Accuracy:						
Egg Mass Waypoint #	Species Observations			Gosner (round, bean, tail, hatched)	Egg Mass Waypoint #	Species Observations		
1					21			
2					22			
3					23			
4					24			
5					25			
6					26			
7					27			
8					28			
9					29			
10					30			
11					31			
12					32			
13					33			
14					34			
15					35			
16					36			
17					37			
18					38			
19					39			
20					40			

Sky: Clear, Partly cloudy, Very cloudy. Moisture: Dry, Foggy, Int. rain, Light, Heavy. Temperature: Frigid, Cool, Warm, Hot. Wind: None, Light, Moderate, Strong
 Species Codes: RAAU=Northern Red-legged Frog; RABO=Foothills Yellow-legged Frog; HYRE= Pacific Tree Frog; BUBO=Western Toad; ACMA=Western Pond Turtle; LICA=Bullfrog

Notes:



FROG TALLY BOX

RAAU
Adult:

Juvenile:

RABO
Adult:

Juvenile:

LICA
Adult:

Juvenile:

HYRE
Adult:

Juvenile:

BUBO
Adult:

Juvenile:

String:

ACMA

Attachment 1

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE MITIGATION MONITORING AND REPORTING PROGRAM (MMRP) CALIFORNIA ENDANGERED SPECIES ACT

INCIDENTAL TAKE PERMIT NO. 2081-2018-059-01

PERMITTEE: Humboldt Bay Municipal Water District

**PROJECT: Humboldt Bay Municipal Water District
Maintenance Project**

PURPOSE OF THE MMRP

The purpose of the MMRP is to ensure that the impact minimization and mitigation measures required by the Department of Fish and Wildlife (CDFW) for the above-referenced Project are properly implemented, and thereby to ensure compliance with section 2081(b) of the Fish and Game Code and section 21081.6 of the Public Resources Code. A table summarizing the mitigation measures required by CDFW is attached. This table is a tool for use in monitoring and reporting on implementation of mitigation measures, but the descriptions in the table do not supersede the mitigation measures set forth in the California Incidental Take Permit (ITP) and in attachments to the ITP, and the omission of a permit requirement from the attached table does not relieve the Permittee of the obligation to ensure the requirement is performed.

OBLIGATIONS OF PERMITTEE

Mitigation measures must be implemented within the time periods indicated in the table that appears below. Permittee has the primary responsibility for monitoring compliance with all mitigation measures and for reporting to CDFW on the progress in implementing those measures. These monitoring and reporting requirements are set forth in the ITP itself and are summarized at the front of the attached table.

VERIFICATION OF COMPLIANCE, EFFECTIVENESS

CDFW may, at its sole discretion, verify compliance with any mitigation measure or independently assess the effectiveness of any mitigation measure.

TABLE OF MITIGATION MEASURES

The following items are identified for each mitigation measure: Mitigation Measure, Source, Implementation Schedule, Responsible Party, and Status/Date/Initials. The Mitigation Measure column summarizes the mitigation requirements of the ITP. The Source column identifies the ITP condition that sets forth the mitigation measure. The Implementation Schedule column shows the date or phase when each mitigation measure will be implemented. The Responsible Party column identifies the person or agency that is primarily responsible for implementing the mitigation measure. The Status/Date/Initials column shall be completed by the Permittee during preparation of each Status Report and the Final Mitigation Report, and must identify the implementation status of each mitigation measure, the date that status was determined, and the initials of the person determining the status.

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
BEFORE DISTURBING SOIL OR VEGETATION					
1	Before starting Covered Activities, Permittee shall designate a representative (Designated Representative) responsible for communications with CDFW and overseeing compliance with this ITP. Before starting Covered Activities, Permittee shall notify CDFW in writing (email preferred) of the Designated Representative's name, business address, and contact information, and shall notify CDFW in writing if a substitute Designated Representative is selected or identified at any time during the term of this ITP.	ITP Condition # 5.1	Before commencing ground- or vegetation-disturbing activities/duration of Project	Permittee	
2	Permittee shall submit to CDFW in writing (email preferred) the name, qualifications, business address, and contact information of a Designated Biologist (DB) at least 30 days before starting Covered Activities, unless CDFW agrees to approve a DB in less time. Permittee shall ensure that the DB is knowledgeable and experienced in the biology, natural history, survey techniques, and collecting and handling of the Covered Species. The DB shall be responsible for monitoring Covered Activities to help minimize, fully mitigate and/or avoid the incidental take of the Covered Species, and to minimize disturbance of Covered Species habitat. Permittee shall obtain CDFW approval of the DB in writing before starting Covered Activities and shall also obtain approval in advance in writing if the DB must be changed.	ITP Condition # 5.2	At least 30 days before commencing ground- or vegetation-disturbing activities/duration of Project	Permittee	
3	Permittee shall conduct an education program for all persons employed or otherwise working in the Project Area before performing any work. The program shall consist of a presentation from the DB that includes a discussion of the biology and general behavior of the Covered Species, information about the distribution and habitat needs of the Covered Species, sensitivity of the Covered Species to disturbance, its status pursuant to CESA including legal protection, recovery efforts, penalties for violations and Project-specific protective measures described in this ITP. Permittee shall provide interpretation for non-English speaking workers, and the same instruction shall be provided to any new workers before they are authorized to perform work in the Project Area. Permittee shall prepare and distribute wallet-sized cards or a fact sheet handout containing this information for workers to carry in the Project Area. Upon completion of the program, employees shall sign a form stating they attended the program and understand all protection measures. This training shall be repeated at least once annually for long-term and/or permanent employees that will be conducting work in the Project Area.	ITP Condition # 5.4	Before commencing ground- or vegetation-disturbing activities/duration of Project	Permittee	
4	The Designated Representative shall notify CDFW at least 7 calendar days before starting Covered Activities and shall document compliance with all pre-Project Conditions of Approval before starting Covered Activities.	ITP Condition # 6.1	Before commencing ground- or vegetation-disturbing activities/duration of Project	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
5	The DB shall conduct Visual Encounter Surveys (VES) for the egg masses of the Covered Species in any potential Covered Species breeding habitat (margins of streams) within 300 feet (150 feet up-and downstream) of where Covered Activities may occur within that year. VES shall commence with the onset of the breeding season. The onset of the breeding season is generally during the receding spring hydrograph, and typically begins during the month of May in the Project area. Unusually wet or dry years may require earlier or later initiation of survey efforts, and the DB should coordinate with the CDFW Regional Representative to ensure surveys are timed appropriately. It is critical to identify the onset of breeding because egg masses mature and hatch quickly (approximately 2-3 weeks). During a VES, observer(s) shall walk and/or wade along the margins of the stream visually inspecting all suitable habitat, and recording locations of egg masses of the Covered Species with a GPS unit. A corresponding developmental stage shall be recorded for each egg mass based on Gosner stage (Figure 2). The VES shall be conducted within the boundaries of the Project Area plus a 150-foot buffer zone upstream and downstream of the Project area. The DB shall conduct a VES for egg masses within the Project area every 7-10 days until July 1, or until no fresh egg masses have been observed for 14 days, whichever comes first.	ITP Condition # 7.1	May - June	Permittee	
6	If egg masses are observed within 100 feet upstream or downstream of locations where they may be disturbed by Project activities, the DB shall notify CDFW within seven business days by submitting a Relocation Plan via email to the Regional Representative as designated in this ITP. The Relocation Plan shall contain approximate numbers and locations of egg masses to be relocated, and shall quantify the amount, location, and quality of suitable receiving habitat a minimum of 150 feet from the disturbance location, and describe methods for marking and monitoring each relocated egg mass to determine success rates of egg mass relocation. CDFW shall have at least three business days to comment on the Relocation Plan. If CDFW approves the Plan or has no comments, the DB shall proceed in relocating egg masses to the proposed receiving habitat by gently placing the egg mass and its attachment substrate into a 5-gallon bucket with fresh stream water, and immediately transporting the eggs below the disturbance location to the previously identified receiving habitat. Upstream receiving habitat should only be considered if insufficient habitat exists downstream. Two or three egg masses, depending on rock size, will fit in one bucket. Egg masses must be submerged at all times. Aeration is not required, assuming bucket retention time is brief. Within the receiving habitat, the DB will gently place the egg mass and its rock in appropriate depth and velocity edge water. Other egg masses will already be present in the receiving habitat, so it is important to note their location and avoid disturbing them during relocation procedures. If any egg masses become detached from their cobble, they shall be enclosed with cobble in the sheltered low-flow receiving habitat. Relocated egg masses shall be marked with an inconspicuous marker (e.g. small wooden stake, pin flag, colored rock, etc.) that is numbered for future monitoring, and a GPS location shall be taken. Relocated egg masses shall be monitored weekly and approximate Gosner stage recorded until they are completely hatched, after which the marker shall be removed. All egg mass relocation data shall be submitted in monitoring reports, including egg masses that do not continue to develop after relocation, or do not survive for some other reason (washed away, desiccated, or otherwise destroyed).	ITP Condition # 7.2	Prior to seasonal instream activities	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
7	In addition to the pre-construction surveys and egg mass relocation as described in measures 7.1 and 7.2, the DB shall survey the disturbance footprint within 14 days preceding Covered Activities to determine whether tadpoles and/or juvenile or adults of the Covered Species are present within the footprint or a 25-foot buffer area. If Covered Species of any life stage are present, the DB shall develop and submit a Relocation Plan to CDFW at least seven days prior to proposed installation. CDFW shall have at least three business days to comment on the Relocation Plan. The Relocation Plan shall include what life stage(s) will be relocated (e.g., adults, tadpoles, or egg masses) and specific protocols for each life stage. The Relocation Plan shall quantify the amount, location, and quality of suitable receiving habitat. The Relocation Plan shall include capture and handling methods specific to each life stage. Covered Species shall be handled using methodology described in the Restraint and Handling of Live Amphibians (Attachment 2), and in accordance with the Fieldwork Code of Practice (Attachment 3).	ITP Condition # 7.4	Prior to instream activities	Permittee	
8	<p>The Permittee may proceed with Covered Activities only after the Permittee has ensured funding (Security) to complete any activity required by Condition of Approval 8 that has not been completed before Covered Activities begin. Permittee shall provide Security as follows:</p> <ol style="list-style-type: none"> 1. <u>Security Amount</u>. The Security shall be in the amount of \$6,000. This amount is based on the cost estimates for riparian planting of 0.5 acres using a combination of container stock and on-site materials at \$6,000/acre, and costs of preparing a restoration plan. 2. <u>Security Form</u>. The Security shall be in the form of an irrevocable letter of credit (see Attachment 4), Surety Bond, or another form of Security approved in advance in writing by CDFW's Office of the General Counsel. 3. <u>Security Timeline</u>. The Security shall be provided to CDFW before Covered Activities begin or within 30 days after the effective date of this ITP, whichever occurs first. 4. <u>Security Holder</u>. The Security shall be held by CDFW or in a manner approved in advance in writing by CDFW. 5. <u>Security Transmittal</u>. If CDFW holds the Security, Permittee shall transmit it to CDFW with a completed Mitigation Payment Transmittal Form or by way of an approved instrument such as escrow, irrevocable letter of credit, or other. 6. <u>Security Drawing</u>. The Security shall allow CDFW to draw on the principal sum if CDFW, in its sole discretion, determines that the Permittee has failed to comply with the Conditions of Approval of this ITP. 7. <u>Security Release</u>. The Security (or any portion of the Security then remaining) shall be released to the Permittee after CDFW has conducted an on-site inspection and received confirmation that all secured requirements have been satisfied. 	ITP Condition # 9	Before commencing Covered Activities	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
DURING CONSTRUCTION					
9	To ensure compliance with the Conditions of Approval of this ITP, the DB shall have authority to immediately stop any activity that does not comply with this ITP, and/or to order any reasonable measure to avoid the unauthorized take of the Covered Species.	ITP Condition # 5.3	Duration of Project	Permittee	
10	The DB shall maintain a construction-monitoring notebook on-site throughout the construction period, which shall include a copy of this ITP with attachments and a list of signatures of all personnel who have successfully completed the education program. Permittee shall ensure a copy of the construction-monitoring notebook is available for review at the Project site upon request by CDFW.	ITP Condition # 5.5	Duration of Project	Permittee	
11	Permittee shall prohibit use of erosion control materials potentially harmful to Covered Species and other species, such as monofilament netting (erosion control matting) or similar material, in potential Covered Species habitat. All erosion control materials shall be 100 percent biodegradable and shall not entrap or harm wildlife. Photodegradable synthetic products are not considered biodegradable.	ITP Condition # 5.6	Duration of Project	Permittee	
12	Permittee shall ensure that vehicles, personnel, and Project activities are minimized within 25 feet of the wetted edge of streams, riparian habitat, or other Covered Species habitat as determined by the DB. With the exceptions of Covered Activities that require in or near stream work, these habitats should be avoided to the greatest extent feasible. When Project activities occur within 25 feet of Covered Species habitat, stakes, flags, rope, cord, and/or fencing may be used if deemed necessary by the DB to minimize disturbance of Covered Species habitat.	ITP Condition # 5.7	Duration of Project	Permittee	
13	Project-related personnel shall access the Project Area using existing routes, or routes identified in the Project Description and shall not cross Covered Species habitat outside of these routes. Permittee shall restrict Project-related vehicle traffic to established roads, staging, and parking areas. Permittee shall ensure that vehicle speeds within 20 feet of surface water (the wetted edge of a river or stream, or a wetland area) do not exceed 5 miles per hour.	ITP Condition # 5.8	Duration of Project	Permittee	
14	Permittee shall confine all Project-related parking, storage areas, laydown sites, equipment storage, and any other surface-disturbing activities to previously disturbed areas to the extent feasible. Additionally, Permittee shall not use or cross Covered Species habitat outside of the Project Area except as described in this ITP.	ITP Condition # 5.9	Duration of Project	Permittee	
15	Permittee shall immediately stop and, pursuant to pertinent State and federal statutes and regulations, arrange for repair and clean up by qualified individuals of any fuel or hazardous waste leaks or spills at the time of occurrence, or as soon as it is safe to do so. Permittee shall exclude the storage and handling of hazardous materials from the Project Area and shall properly contain and dispose of any unused or leftover hazardous products off-site.	ITP Condition # 5.10	Duration of Project	Permittee	
16	Permittee shall provide CDFW staff with access to the Project site and mitigation areas, and shall otherwise fully cooperate with CDFW efforts to verify compliance with or effectiveness of mitigation measures set forth in this ITP.	ITP Condition # 5.11	Duration of Project	Permittee	
17	The Designated Representative shall immediately notify CDFW in writing if it determines that the Permittee is not in compliance with any Condition of Approval of this ITP including, but not limited to, any actual or anticipated failure to implement measures within the time periods indicated in this ITP and/or the MMRP. The Designated Representative shall report any noncompliance with this ITP to CDFW within 24 hours.	ITP Condition # 6.2	Duration of Project	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
18	The DB shall be on-site daily when Covered Activities occur that may result in take of Covered Species. The DB shall conduct compliance inspections to: (1) minimize incidental take of the Covered Species; (2) prevent unlawful take of Covered Species; (3) check for compliance with all measures of this ITP; (4) check all exclusion zones; and (5) ensure that any signs, stakes, and fencing are intact, and that Covered Activities are only occurring in the Project Area. The Designated Representative or DB shall prepare daily written observation and inspection records summarizing: oversight activities and compliance inspections, observations of Covered Species and their sign, survey results, and monitoring activities required by this ITP.	ITP Condition # 6.3	Duration of Project	Permittee	
19	The Designated Representative or DB shall compile the observation and inspection records identified in Condition of Approval 6.3 into an Annual Compliance Report (ACR) and submit it to CDFW no later than December 31 of every year beginning with issuance of this ITP and continuing until CDFW accepts the Final Mitigation Report identified in measure 6.6 below, along with a copy of the MMRP table with notes showing the current implementation status of each mitigation measure. Additionally, the ACR shall include: 1) an assessment of the effectiveness of each completed or partially completed mitigation measure in avoiding, minimizing and mitigating Project impacts; 2) all available information about Project-related incidental take of the Covered Species; 3) an accounting of the number of acres subject to both temporary and permanent disturbance, both for the prior calendar year, and a total since ITP issuance; and 4) information about other Project impacts on the Covered Species. The ACR shall be submitted to the CDFW offices listed in the Notices section of this ITP and via email to CDFW's Regional Representative and Headquarters CESA Program. At the time of this ITP's approval, the CDFW Regional Representative is Jennifer Olson (jennifer.olson@wildlife.ca.gov), and Headquarters CESA Program email is CESA@wildlife.ca.gov. CDFW may at any time increase the timing and number of compliance inspections and reports required under this provision depending upon the results of previous compliance inspections. If CDFW determines the reporting schedule must be changed, CDFW will notify Permittee in writing of the new reporting schedule.	ITP Condition # 6.4	Annually by January 15	Permittee	
20	The DB or DR shall submit all observations of Covered Species to CDFW's California Natural Diversity Database (CNDDB) within 60 calendar days of the observation and the DB or DR shall include copies of the submitted forms with the next ACR.	ITP Condition # 6.5	Duration of Project within 60 days of observation	Permittee	
21	Permittee shall ensure that Covered Activities involving construction and heavy equipment use (such as excavation, grading, and contouring) that are conducted in streams, ponds, and riparian areas are limited to the period from June 15 to October 15 of each year (Dry Season) until the expiration of this ITP, unless the Permittee receives prior approval for work outside this window from CDFW.	ITP Condition # 7.3	Duration of Project	Permittee	
22	During all phases of Project construction operation and maintenance, all workers shall inform the DB if they encounter Covered Species within or near the Project site. All Covered Activities with potential to take the Covered Species shall cease until the animal is relocated, if the DB determines that relocation is necessary.	ITP Condition # 7.5	Duration of Project	Permittee	
23	Permittee shall not use night lighting in the Project Area. All Project activity shall terminate 30 minutes before sunset and shall not resume until 30 minutes after sunrise. The Permittee shall use sunrise and sunset times established by the U.S. Naval Observatory Astronomical Applications Department for the geographic area where the Project is located (http://aa.usno.navy.mil/data/docs/RS_OneDay.php).	ITP Condition # 7.6	Duration of Project	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
24	Permittee shall ensure all Project personnel adhere to the current version of the California Department of Fish and Wildlife Aquatic Invasive Species Decontamination Protocol (Attachment 5) for all field gear and equipment that will be in contact with water or Covered Species. Heavy equipment and other motorized or mechanized equipment that comes in contact with water should generally follow watercraft decontamination protocols found in the Decontamination Protocol.	ITP Condition # 7.7	Duration of Project	Permittee	
POST-CONSTRUCTION					
25	Upon completion of Covered Activities, Permittee shall remove from the Project Area and properly dispose of all refuse including, but not limited to, broken equipment parts, vehicles or parts of vehicles, tires, wrapping material, cords, cables, wire, rope, strapping, twine, buckets, metal or plastic containers, and boxes.	ITP Condition # 5.12	Post-construction	Permittee	
26	<p>In order to fully mitigate Project-related impacts of the taking on the Covered Species, Permittee shall create or restore 0.5 acres of riparian habitat. Permittee shall prepare a Riparian Restoration Plan and shall ensure that the Plan is successfully implemented during the term of this ITP. The plan shall be submitted to CDFW for approval within 90 days of the effective date of this ITP, and shall include, at a minimum:</p> <ol style="list-style-type: none"> 1. Location of the restoration site(s): This section shall include a regional map, general map illustrating planting locations (polygons), location or any other existing or proposed restoration actions in the general vicinity, ownership information, and directions to the site. 2. Site Preparation and installation methods: The section shall provide a description of the methods that will be used to install the plants with a detailed discussion for each plant species and type of planting stock (container, stem cutting, pole cutting, bare-root stock, etc.), time of the year during which the planting will occur, and any other pertinent information regarding implementation of the project, any necessary site prep work (i.e. heavy equipment work, stabilization, soil work, etc.) shall be described in this section of the plan. 3. Materials: This section shall provide the list of plant species to be utilized, size of specimens to be used for each species, number of plants, the source of plant materials to be used, and irrigation materials, if necessary. Information regarding the need for plant protection and the materials necessary to accomplish protection shall be included. 4. Schematic: This section shall include a detailed planting design that depicts exactly where the plants will go in the restoration area, including the number of plants and which species to be planted in each location, spacing between plants, and total acreage planned for revegetation. 	ITP Condition # 8.1	By end of ITP term	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
26 cont.	<p>5. Maintenance of plants: This section shall include a description of methods that will be used to maintain plants in good condition, to control non-native vegetation, and prevention of herbivory to the plantings, including a discussion of how maintenance actions will be triggered by changes in plant health over time. If the planting will be irrigated, this section shall include an irrigation plan that describes the type of irrigation system that will be used and the watering regime that will be used to successfully establish the plantings. The irrigation plan should be designed to discourage the growth of invasive plants while encouraging deep rooting of planted materials to ensure maximum survival following the plant establishment period.</p> <p>6. Success Criteria: This section shall include the performance criteria that will be used to evaluate project success. Performance criteria should be developed for species diversity, structural diversity, overall vegetative cover by species (if important) and how cover will be measured (absolute vs. relative); density (by species); plant vigor; and survivorship. In addition, intermediate thresholds (incremental progress toward performance criteria) should be developed in conjunction with an adaptive management plan that triggers remedial activities that would be implemented if intermediate thresholds are not being met. This will allow the revegetation specialist to increase the likelihood that performance criteria are met by the end of the monitoring period.</p> <p>7. Monitoring methods: This section shall include a detailed description of how the project will be monitored to evaluate whether performance criteria are being met. This section should include a detailed description of the methods used for data collection, sample size, data entry and storage, statistical analyses to be performed, photo point locations, and a description of the monitoring report format.</p> <p>8. Adaptive management and contingency measures: This section shall describe the projects adaptive management strategies and what actions shall be implemented if the monitoring data indicates that the performance criteria may not be met. This section shall identify the party responsible for implementing remedial measures and the source(s) of funding to complete actions.</p>	ITP Condition # 8.1	By end of ITP term	Permittee	
27	No later than 45 days after completion of all mitigation measures, Permittee shall provide CDFW with a Final Mitigation Report. The DB shall prepare the Final Mitigation Report which shall include at a minimum: (1) a summary of all ACRs; (2) a copy of the table in the MMRP with notes showing when each of the mitigation measures was implemented; (3) all available information about Project-related incidental take of the Covered Species; (4) information about other Project impacts on the Covered Species; (5) beginning and ending dates of Covered Activities; (6) an assessment of the effectiveness of this ITP's Conditions of Approval in minimizing and fully mitigating Project impacts of the taking on Covered Species; (7) recommendations on how mitigation measures might be changed to more effectively minimize take and mitigate the impacts of future projects on the Covered Species; and (8) any other pertinent information.	ITP Condition # 6.6	Post-construction and after completion of mitigation	Permittee	

Attachment 2

Restraint and Handling of Live Amphibians

Citation:

Green, D. E. 2001. Restraint and handling of live amphibians. Amphibian Research and Monitoring Initiative Standard Operating Procedure, No. 100. National Wildlife Health Center. Available from http://www.nwhc.usgs.gov/publications/amphibian_research_procedures/handling_and_restraint.jsp (accessed June 2018).

STANDARD OPERATING PROCEDURE

ARMI SOP No. 100

Revised, 16 February 2001

- I. **PURPOSE:** Provide guidelines for humane handling of amphibians so that injury and distress to the amphibian are minimized.
- II. **SCOPE:** These guidelines apply to larvae and tadpoles, as well as adult frogs, toads, salamanders and neotenes. Because of their anatomically different and very delicate skin, tadpoles and larvae must be handled differently than post-metamorphic amphibians.
- III. **EQUIPMENT and SUPPLIES.**
 - A. Standard capture equipment (seine nets, dip nets, minnow traps)
 - B. Clear plastic bags (half liter or full liter size)
- IV. **BACKGROUND:** There are three main hazards associated with handling live amphibians: two to the amphibian and one to the handler. To amphibians, the main dangers of being handled are skin damage that could result in secondary skin infections, and bone and muscle injuries caused by struggling when being held. For the handler, the main danger comes from toxic skin secretions produced by some amphibians (in the USA, this is mostly newts and the introduced giant/marine toad).

Tadpoles and larvae have thin delicate skin that is very easily damaged by the slightest handling. The skin of larvae lacks keratin and has fewer cell layers than adult amphibian skin. Therefore, direct contact handling of tadpoles and larvae is to be avoided; instead, these amphibian stages are examined through clear flexible plastic bags containing water. Although the skin of adult (post-metamorphic) amphibians has keratin and is less delicate than larval skin, their skin is still much more delicate than the skin of reptiles, birds and mammals. Rough handling of adult amphibians can easily result in skin abrasions, small tears, punctures, erosions and ulcers; normally, minor skin wounds heal quickly, but if contaminants, sewage or high levels of microorganisms are present in the pond or other environment, then wound infections are possible.

Frogs and Toads. All amphibians can be expected to struggle following capture. For anurans, there is a danger that vigorous kicking with the hindlimbs can cause joint dislocations or a broken (fractured) back; broken backs are a well-

documented and major problem in another species that moves by hopping--- rabbits. Therefore, proper restraint of anurans, first and foremost involves inhibiting their ability to kick.

Salamanders. For salamanders, there are three major dangers associated with handling: 1) loss (automizing) of the tail, 2) damage to the very delicate external gills (in neotenes), and 3) back injury during whip-like thrashing movements.

V. METHODS OF PHYSICAL RESTRAINT:

- A. Anurans. Medium and large size frogs and toads (those about 5 grams and larger) should be grasped around the waist with the hindlimbs fully extended. The animal should not be allowed to bend (flex) its hip and knee joints, since this would allow it to kick.
- B. Caudates. Medium and large size salamanders (those about 5 grams and larger) should be grasped in the middle of the body between the forelimbs and hindlimbs. Larval and neotenic salamanders should never be grasped around the head or neck, because the gills can be easily damaged. Under no circumstances should salamanders be grasped by the tail or picked up by the tail.
- C. Larvae. All larvae (including tadpoles) should be handled with nets or scoops. For examinations, the larvae should be placed in a clear plastic bag with a mild amount of water. Alternatively, larvae may be sedated with an anesthetic and examined in a dish or bowl of water. As much as possible, larvae should be examined only while they are in water. Larvae should not be grasped with bare hands.

VI. MISHAPS.

- A. Skin wounds: If an amphibian suffers a skin wound during handling, it is recommended that the wound be sprayed with the over-the-counter product, Bactine® (See the SOP on Toe Clipping of Frogs and Toads, NWHC ACUC Protocol 2001-004). All other topical antiseptics and disinfectants (sprays and ointments) are CONTRAINDICATED in amphibians. If possible, the animal should then be released on land rather than into water, since the antiseptic spray would be quickly washed off in water.
- B. Broken back: If a frog or toads suffers a broken back during capture or handling, it should be promptly euthanized. It would be inhumane to release such a crippled animal. An animal with a broken back will have serious damage to the spinal cord and should show almost immediate paralysis of the hindlimbs and tail. Recommended methods of humane euthanasia include (see NWHC ACUC Protocol 1999-009, Methods of Euthanasia):
 - 1. Pithing

2. Overdosing in anesthetic solutions of MS222 or benzocaine
 3. Application of a benzocaine-based topical ointment (as used by humans to relieve tooth-aches) to the top of the head and dorsum of the body.
- C. Broken leg: If a major bone of a limb is broken during capture or handling, the animal should be euthanized or taken to a wildlife rehabilitation center or veterinarian for treatment. A broken leg bone typically is recognized as an abnormal bend in the leg where there is no joint; other signs of a broken leg bone are protrusion of a bone fragment through the skin, inability of the animal to move a limb or position a leg in its normal resting posture. After treatment, amphibians with broken bones might be given to a zoo or placed in a captive breeding program. Only if the injured amphibian is kept isolated from all other fish, amphibians and reptiles (eg, in a separate cage) during treatment, can it later be considered for release at the point of capture. Injuries to digits (toes and fingers) generally are not life-threatening; if the skin of the injured toe also is wounded, then treatment with Bactine® prior to immediate release is acceptable. If a toe bone is broken and protruding through the skin, the affected toe may be amputated just proximal to the site of the fracture, the stump should be sprayed with Bactine®, and the animal may be released.
- D. Automized tail: If a salamander automizes (detaches) its tail during capture or handling, the stump should be treated (sprayed) with Bactine®; the salamander can then be promptly released.
- E. Crushing injuries to head and body. Amphibians that have serious injuries to skin, muscles and bones should be promptly euthanized. Crushing injuries that are limited to a limb or tail will require treatment at a wildlife rehabilitation center or a veterinary clinic; alternatively, the animal may be euthanized, but it would be inhumane to release a seriously injured amphibian.
- F. Snout abrasions. Amphibians that are held in glass or clear plastic containers may jump head-first into the glass, or may rub their snout against the container in attempts to burrow out. If amphibians are held for more than an hour in a clear container (bottle, aquarium, etc), they should be examined for evidence of skin injury at the tip of the snout and elsewhere around the head prior to release. If abrasions are detected, they should be sprayed with Bactine® prior to release.
- G. Toxic skin secretions. All amphibians have glands in their skin that secrete a vast number of chemicals; some of which are merely noxious and repellant-like, while others may cause skin or eye irritation, and some may actually kill. The poison-dart frogs of Central America are an example of a frog with toxic secretions that can kill a human. Among the native

amphibians of the United States, the two amphibians of greatest concern are giant toads (also called cane toads, marine toads, aka toads; *Bufo marinus*) and western newts of the genus, *Taricha*.

Giant toads secrete a potent white mucoid substance from their parotid glands (large warts just behind the eyes) that affects the heart, but it is not absorbed through the intact human skin; however, the toxin is readily absorbed through the eyes and mouth. Hence, the best way to prevent poisoning is to carefully avoid rubbing the eyes or putting fingers in the mouth after handling a giant toad. If skin secretions of giant toads contact the eye or mouth, then flush promptly with generous amounts of clean fresh water or contact lens wetting solution, and then seek emergency care at a clinic or hospital if stinging or numbness of the eye or mouth develops.

Newts of the genus, *Taricha*, also secrete toxins from their skin; it is presumed that the entire body of these newts secretes toxins (newts and other salamanders do not have parotid glands). Their skin secretions are very irritating to the eyes and mouth. Temporary blindness (lasting about 24 hrs) has been reported by field biologists that handled newts and then rubbed their eyes. If sensations of blurred vision, or burning or stinging of the eyes occur after handling any genus or species of newt, wash the eyes with copious amounts of fresh clean water (or contact lens wetting solutions) and promptly seek medical care. Persons with newt skin secretions in their eyes are advised not to drive a vehicle or operate other dangerous or heavy equipment.

Finally, it is possible that other amphibian species in the USA besides giant toads and newts, could produce skin secretions that are irritants to the eyes. Furthermore, amphibians may carry some bacteria in their intestines and feces that are human pathogens, such as the bacteria, *Salmonella* and *Leptospira*. Hence, it is always best to practice good personal hygiene after handling any amphibian (namely, thoroughly wash your hands with soap and water).

VII. CITED LITERATURE:

1. MARTIN, D., and H. HONG. 1991. The use of Bactine® in the treatment of open wounds and other lesions in captive anurans. *Herpetol Rev* 22: 21.

Attachment 3

The Declining Amphibian Task Force Fieldwork Code of Practice

A code of practice, prepared by the Declining Amphibian Task Force (DAPTF) to provide guidelines for use by anyone conducting fieldwork at amphibian breeding sites or in other aquatic habitats. Observations of disease and parasite-infected amphibians are now being frequently reported from sites all over the world. This has given rise to concerns that releasing amphibians following a period of captivity, during which time they can pick up unapparent infections of novel disease agents, may cause an increased risk of mortality in wild populations. Amphibian pathogens and parasites can also be carried in a variety of ways between habitats on the hands, footwear, or equipment of fieldworkers, which can spread them to novel localities containing species, which have had little or no prior contact with such pathogens or parasites. Such occurrences may be implicated in some instances where amphibian populations have declined. Therefore, it is vitally important for those involved in amphibian research (and other wetland/pond studies including those on fish, invertebrates and plants) to take steps to minimize the spread of disease and parasites between study sites.

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. Boots, nets, traps, etc., should then be scrubbed with 70% ethanol solution (or sodium hypochlorite 3 to 6%) and rinsed clean with sterilized water between study sites. Avoid cleaning equipment in the immediate vicinity of a pond or wetland.
3. In remote locations, clean all equipment as described above upon return to the lab or "base camp." Elsewhere, when washing machine facilities are available, remove nets from poles and wash with bleach on a "delicates" cycle, contained in a protective mesh laundry bag.
4. When working at sites with known or suspected disease problems, or when sampling populations of rare or isolated species, wear disposable gloves and change them between handling each animal. Dedicate 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. When amphibians are collected, ensure the separation of animals from different sites and take great care to avoid direct contact between them (e.g., via handling, reuse of containers) or with other captive animals. Isolation from un-sterilized plants or soils which have been taken from other sites is also essential. Always use disinfected/disposable husbandry equipment.
6. Examine collected amphibians for the presence of diseases and parasites soon after capture. Prior to their release or the release of any progeny, amphibians should be quarantined for a period and thoroughly screened for the presence of any potential disease agents.
7. Used cleaning materials (liquids, etc.) should be disposed of safely and if necessary taken back to the lab for proper disposal. Used disposable gloves should be retained for safe disposal in sealed bags.

Attachment 4

IRREVOCABLE STANDBY LETTER OF CREDIT
NO. [*Number issued by financial institution*]

Issue Date: [*date*]

Beneficiary:

Department of Fish and Wildlife
Post Office Box 944209
Sacramento, CA 94244-2090
Attn: HCPB Mitigation Account Coordinator

Amount: U.S. \$[*dollar number*] [(*dollar amount*)]

Expiry: [*Date*] at our counters

To whom it may concern:

1. At the request and on the instruction of our customer, [*name of applicant*] ("Applicant"), we, [*Name of financial institution*] ("Issuer"), hereby establish in favor of the beneficiary, the California Department of Fish and Wildlife ("CDFW"), this irrevocable standby letter of credit ("Credit") in the principal sum of U.S. \$[*dollar number*] [(*dollar amount*)] ("Principal Sum").
2. We are informed this Credit is and has been established for the benefit of the CDFW pursuant to the terms of the incidental take permit for the **Humboldt Bay Municipal Water District Project** issued by the CDFW to the Applicant on **DATE** (No. **2081-2018-059-01**) ("Permit").
3. We are further informed that pursuant to the Permit, the Applicant has agreed to complete certain mitigation requirements, as set forth in **Condition 8** in the Permit ("Mitigation Requirements").
4. We are finally informed that this Credit is intended by the CDFW and the Applicant to serve as a security device for the performance by the Applicant of the Mitigation Requirements.
5. The CDFW shall be entitled to draw upon this Credit only by presentation of a duly executed Certificate for Drawing ("Certificate") in the same form as Attachment A, which is attached hereto, at our office located at [*name and address of financial institution*].

6. The Certificate shall be completed and signed by an "Authorized Representative" of the CDFW as defined in paragraph 12 below. Presentation by the CDFW of a completed Certificate may be made in person or by registered mail, return receipt requested, or by overnight courier.
7. Upon presentation of a duly executed Certificate as above provided, payment shall be made to the CDFW, or to the account of the CDFW, in immediately available funds, as the CDFW shall specify.
8. If a demand for payment does not conform to the terms and conditions of this Credit, we shall give the CDFW prompt notice that the demand for payment was not effected in accordance with the terms and conditions of this Credit, state the reasons therefore, and await further instruction.
9. Upon being notified that the demand for payment was not effected in conformity with the Credit, the CDFW may correct any such non-conforming demand for payment under the terms and conditions stated herein.
10. All drawings under this Credit shall be paid with our funds. Each drawing honored by us hereunder shall reduce, *pro tanto*, the Principal Sum. By paying to the CDFW an amount demanded in accordance herewith, we make no representations as to the correctness of the amount demanded.
11. This Credit will be cancelled upon receipt by us of Certificate of Cancellation, which: (i) shall be in the form of Attachment B, which is attached hereto, and (ii) shall be completed and signed by an Authorized Representative of the CDFW, as defined in paragraph 12 below.
12. An "Authorized Representative" shall mean either the Director of the Department of Fish and Wildlife, the General Counsel of the Department of Fish and Wildlife, or a Regional Manager of the Department of Fish and Wildlife.
13. This Credit shall be automatically extended without amendment for additional periods of one year from the present or any future expiration date hereof, unless at least sixty (60) days prior to any such date, we notify the CDFW in writing by registered mail, return receipt requested, or by overnight courier that we elect not to consider this Credit extended for any such period.
14. Communications with respect to this Credit shall be in writing and addressed to us at [**name and address of financial institution**], specifically referring upon such writing to this credit by number. The address for notices with respect to this Credit shall be: (i) for the CDFW: Department of Fish and Wildlife, Habitat Conservation Planning Branch, 1416 Ninth Street, 12th Floor, Sacramento, California 95814-2090 Attn: HCPB Mitigation Account Coordinator; and (ii) for the Applicant: [**name and address of applicant**].

15. This Credit may not be transferred.
16. This Credit is subject to the International Standby Practices 1998 ("ISP 98"). As to matters not covered by the ISP 98 and to the extent not inconsistent with the ISP 98, this credit shall be governed by and construed in accordance with the Uniform Commercial Code, Article 5 of the State of California.
17. This Credit shall, if not canceled, expire on **December 31, 2024**, or any extended expiration date.
18. We hereby agree with the CDFW that documents presented in compliance with the terms of this Credit will be duly honored upon presentation, as specified herein.
19. This Credit sets forth in full the terms of our undertaking. Such undertaking shall not in any way be modified, amended or amplified by reference to any document or instrument referred to herein or in which this Credit is referred to or to which this Credit relates and any such reference shall not be deemed to incorporate herein by reference any document or instrument.

[Name of financial institution]

By: _____
Name: _____
Title: _____

ATTACHMENT A

IRREVOCABLE STANDBY LETTER OF CREDIT NO. [*Number issued by financial institution*]
CERTIFICATE FOR DRAWING

To:

[Name and address of financial institution]

Re: Incidental Take Permit No. **2081-2018-059-01**

The undersigned, a duly Authorized Representative of the Department of Fish and Wildlife ("CDFW"), as defined in paragraph 12 in the above-referenced Irrevocable Standby Letter of Credit ("Credit"), hereby certifies to the Issuer that:

1. **[Insert one of the following statements:** "In the opinion of the CDFW, the Applicant has failed to complete the Mitigation Requirements referenced in paragraph 3 of the Credit." **or** "As set forth in paragraph 13, the Issuer has informed the CDFW that the Credit will not be extended and the Applicant has not provided the CDFW with an equivalent security approved by the CDFW to replace the Credit."]
2. The undersigned is authorized under the terms of the Credit to present this Certificate as the sole means of demanding payment on the Credit.
3. The CDFW is therefore making a drawing under the Credit in amount of U.S. \$_____.
4. The amount demanded does not exceed the Principal Sum of the Credit.

Therefore, the CDFW has executed and delivered this Certificate as of the ____ day of _____, _____.

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

BY: _____

[Insert one of the following: "DIRECTOR" or "GENERAL COUNSEL" or "REGIONAL MANAGER, [NAME OF REGIONAL OFFICE]"

ATTACHMENT B

IRREVOCABLE LETTER OF CREDIT NO. [***Number issued by financial institution***]
CERTIFICATE FOR CANCELLATION

To:

[***Name of financial institution and address***]

Re: Incidental Take Permit No. [***2081-2018-059-01***]

The undersigned, a duly Authorized Representative of the California Department of Fish and Wildlife ("CDFW"), as defined in the paragraph 12 in the above-referenced Irrevocable Standby Letter of Credit ("Credit"), hereby certifies to the Issuer that:

1. [***Insert one of the following statements:*** "The Applicant has presented documentary evidence of full compliance with the Mitigation Requirements referenced in paragraph 3 of the Credit." ***or*** "The natural expiration of this Credit has occurred."]
2. The CDFW therefore requests the cancellation of the Credit.

Therefore, the CDFW has executed and delivered this Certificate for Cancellation as of the ____ day of _____, _____.

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

BY: _____

[***Insert one of the following:*** "DIRECTOR" ***or*** "GENERAL COUNSEL" ***or*** "REGIONAL MANAGER, [***NAME OF REGIONAL OFFICE***"]



**California Department of Fish and Wildlife
Aquatic Invasive Species Cleaning/Decontamination Protocols
(Northern Region)**

The California Department of Fish and Wildlife (Department) is committed to protecting the State's diverse fish, wildlife, and plant resources, and the habitats upon which they depend. Preventing the spread of aquatic invasive species (AIS) in both the Department's activities as well as those activities the Department permits others to conduct is important to achieving this goal. The protocols outlined below are a mandatory condition of your Department authorization to work in aquatic habitats intended to prevent the spread of AIS.

Information about New Zealand mudsnails (NZMS), quagga and zebra mussels, chytrid fungus, and Sudden Oak Death Syndrome is summarized in Attachments A through D. For more complete information on the threats of AIS and aids to their identification, please visit the links provided in this document and the Department's Invasive Species Program webpage at: <https://www.wildlife.ca.gov/Conservation/Invasives>

Many AIS are difficult, if not impossible, to see in the environment and can be unknowingly transported to new locations on equipment. Therefore, decontamination is necessary to prevent the spread of AIS between different waterbody locations. To achieve this, equipment should be decontaminated following the protocols outlined in this document. All equipment that comes into contact with water during field activities and watercraft should be decontaminated using one or more of the protocols listed below.

General procedures to prevent the spread of AIS:

- If decontamination is **not** done onsite, transport contaminated equipment in sealed plastic bags and keep separate from clean gear.
- Gear may be dedicated for a specific field site but should be left onsite and be cleaned when moved offsite.
- Sets of field gear may be rotated in and out of field per cleaning cycle.
- When practical, begin work upstream and work downstream. This avoids transporting AIS to non-infested upstream areas.

Option 1: Standard Decontamination (Office method)

Freeze + Saltwater Immersion + Dry

- This option consists of three parts, as freezing alone may not kill some organisms (e.g. chytrid fungus, Sudden Oak Death Syndrome, etc.).
- Scrub gear before leaving field with a stiff-bristled brush to remove all debris. Thoroughly brush small crevices such as boot laces, seams, net corners, etc.

- Bag gear for transport from field to office.
- Place gear and bag in a freezer below 32°F for a minimum of eight hours.
- Thaw gear and bag.
- Immerse gear and bag in 5-10% saltwater solution for 10 minutes.
- Rinse gear.
- Hang gear to dry.

References

- Johnson M.L, L. Berger, L. Philips, R. Speare. Fungicidal effects of chemical disinfectants, UV light, desiccation and heat on the amphibian chytrid *Batrachachytrium dendrobatidis*. Diseases of Aquatic Organisms Vol. 57: 255-260, 2003.
- Richards, D.C., P. O'Connell, and D.C. Shinn. 2004. Simple control method to limit the spread of the New Zealand mudsnail, *Potamopyrgus antipodarum*. North American Journal of Fisheries Management 24(1):114-117.
- USFS Intermountain Region Technical Guidance For Resource Advisors. Preventing the Spread of Aquatic Invasive Organisms Common to the Intermountain Regions. 2014 Technical Guidelines for Fire Operations. Available:
https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5373422.pdf.

Option 2: Chemical Treatment (Field method)

In general, *chemical cleaning/decontamination/disinfection should only be used when Option 1 cannot be performed*. This would be the case when conducting activities at more than one watershed or between long distances before returning back to the base office where a freezer and drying rack are available.

- Always decontaminate/disinfect before leaving a watershed **if** you will be conducting activities within another watershed in the same day before returning back to the office and there is **not** clean or dedicated gear available for the next site.
- Prepare disinfection solution by diluting concentrate containing GS HD 256 (quat) in a well-ventilated space using gloves, eye protection, and a NIOSH-approved N95 filter mask. See Dilution Table on page 4 for dilution factors. Pour decontamination solution into a suitable holding container and submerge gear for at least 10 minutes. Gear may need to be weighed down and/or rotated for complete and sustained immersion.
- Check field gear immersed in disinfection solution and inspect it to make sure all surfaces have been wetted for the required time.
- After treatment, rinse field gear with *fresh water (not water from previous waterbody--to avoid further contamination)*. Dispose of *rinse water* at least 100 feet from any surface water.

- Make up fresh solution as needed and discard after it becomes heavily soiled with organic matter. Check with quat test strips: readings should be above 500 ppm for adequate disinfection.
- **Disinfection solution** should be saved to be disposed of in a **wastewater sewer facility** (not in a septic system), or it can be neutralized on site. Mix the quat working solution with bentonite clay proportions as directed in the Dilution Table, pg. 4. Mix bentonite/quat. decon. solution slurry a couple of times before pouring it out on the ground at least 100 feet away from surface water. It will be completely neutralized in 3-5 hours.

Dilution Table

Concentrate	to 1 gal. water	to 5 gal. water
NaCl ¹ (rock salt)	1.5 cups (9% salt)	7.5 cups (9% salt)
GS HD 256 ²	2.5 oz. (1.8% solution)	12.5 oz. (1.8% solution)
bentonite clay ^{3,4}	3 Tbs.	3.75 cups

References

California Department of Fish and Wildlife Northern Region tests (unpublished)

Johnson M.L, L. Berger, L. Philips, R. Speare. Fungicidal effects of chemical disinfectants, UV light, desiccation and heat on the amphibian chytrid *Batrachachytrium dendrobatitis*. *Diseases of Aquatic Organisms* Vol. 57: 255-260, 2003.

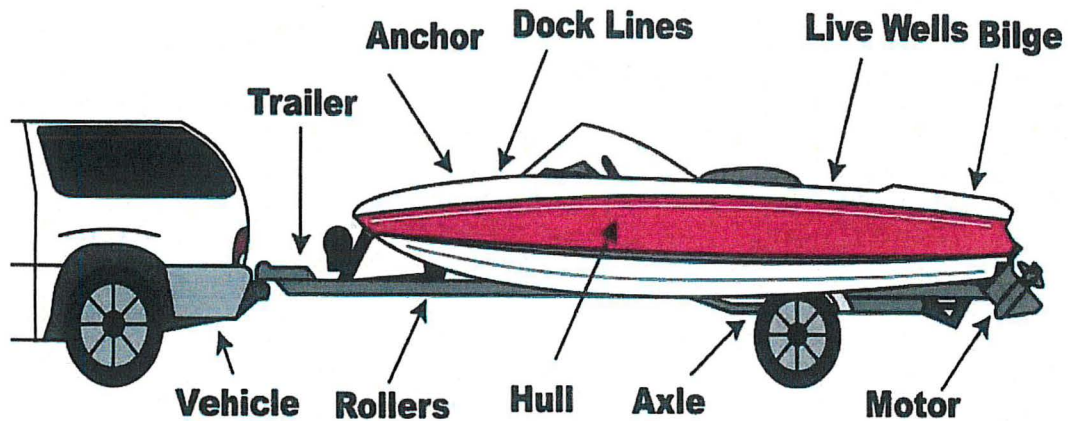
Petrille III, J.C. and Werner, M.W., Betz Laboratories, Inc., 1996. Methods of detoxifying quaternary ammonium compounds toward aquatic organisms. U.S. Patent 5,518,636.

USFS Intermountain Region Technical Guidance For Resource Advisors. Preventing the Spread of Aquatic Invasive Organisms Common to the Intermountain Regions. 2014 Technical Guidelines for Fire Operations. Available:
https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5373422.pdf

Safety Data Sheets

GS HD 256: http://www.spartanchemical.com/msds_sds/downloads/AGHS/EN/3508.pdf

Watercraft Decontamination



- Prior to leaving the launch area, remove all debris from your watercraft, trailer, and equipment. Dispose of all material in the trash, on site if possible.
- Prior to leaving the launch area, drain all water from your watercraft and dry all areas, including motor, motor cooling system, live wells, bilges, and lower-end unit. Before leaving water body area, run motor dry for 5-10 seconds to flush water from engine.
- After leaving a ***known or suspected invasive mussel infested water***, pressure wash the watercraft and trailer at base facilities, with 140°F water¹, including all of the boat equipment (i.e., ropes, anchors, etc.) that had come into contact with the water.
- Flush the engine, live wells, bilges, and all other areas that could contain water with hot water that is at least 140°F. Make sure that water is contained sufficiently so that it doesn't run into storm drains or surface waters.

¹To ensure 100% mortality the water needs to be 140°F or greater at the point of contact.

Attachment A

New Zealand Mudsail

- NZMS reproduce asexually, therefore, it only takes a single NZMS to colonize a new location.
- NZMS are prolific, and a single NZMS can give rise to 40 million snails in one year.
- Densities of over 750,000 NZMS per square meter have been documented.
- NZMS out-compete and replace native invertebrates that are the preferred foods of many fish species, and alter the food web of streams and lakes.

Identifying NZMS:

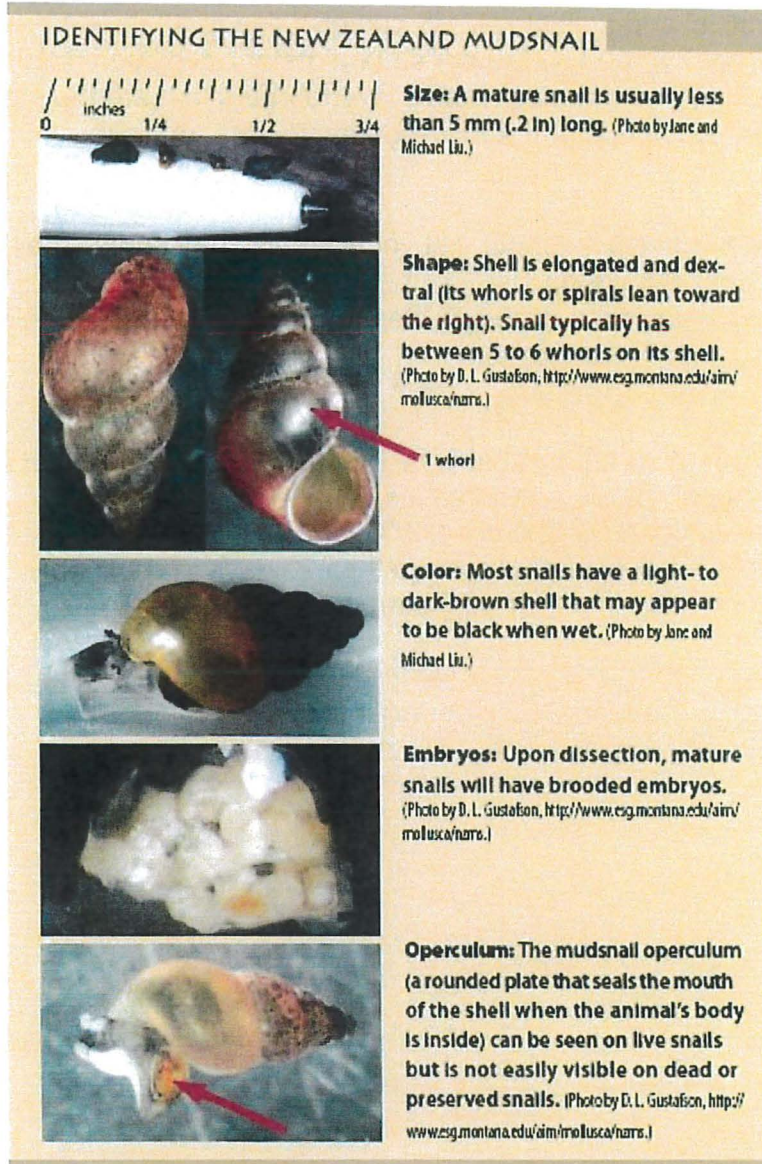
- NZMS average 1/8 inch in length, but young snails may be as small as a grain of sand. Adults bear live young.
- See the photos below for assistance identifying NZMS. Expert identification will be necessary to confirm identification.

NZMS Habitat:

- NZMS can live in most aquatic habitats, including silted river bottoms, clear mountain streams, reservoirs, lakes, and estuaries.
- NZMS have a temperature tolerance of 32-77°F.
- NZMS can survive out of water for more than 25 days in cool, moist environments, and have been found alive over 40 feet from water.

Known locations can be found and new records should be reported to the USGS at:
<http://nas.er.usgs.gov/taxgroup/mollusks/default.aspx>.

Descriptive features of the New Zealand Mudsnail



Attachment B

Quagga and Zebra Mussels

- Dreissenid mussels multiply quickly and out-compete other species for food and space.
- Their presence can alter food webs and alter environments, negatively affecting native and game fish species.
- Dreissenid mussels attach to hard and soft surfaces, and negatively impact water delivery systems, hydroelectric facilities, agriculture, recreational boating and fishing.
- Adults can survive up to 30 days out of water in cool, humid conditions.
- They produce microscopic larvae that can be unknowingly transported in water, including live-wells, bilges, and motors.

Identifying Dreissenid mussels:

- Typically the same size as a fingernail but can grow up to about 2 inches long.
- Variable, usually dark and light alternating stripes. May also be solid cream, brown, or black.

Dreissenid mussel habitat:

- Variable, including both hard and soft surfaces in freshwater.
- From surface depth to more than 400 feet in depth.



Current known locations of Dreissenid mussels in California can be found at:

<http://nas.er.usgs.gov/taxgroup/mollusks/zebramussel/>

Attachment 5

California Department of Fish and Wildlife

Aquatic Invasive Species Cleaning/Decontamination Protocols (Northern Region)

Revision February 2016

Attachment C

Chytrid Fungus

This disease has been linked to dramatic population declines and even extinctions of amphibians in several parts of the world including North America. Thirty percent of amphibian populations may have been affected by this disease, worldwide. Chytrid fungus or Bd (*Batrachochytrium dendrobatidis*) is invisible to the naked eye, but its effects can be seen in many amphibian populations that have been exposed to it. Certain animals/populations, however, seem to be immune and some may actually act as carriers of the disease. This fungus breaks down amphibians' keratinized tissue causing morbidity. This subsequently causes mortality.

For more information on chytrid fungus, see http://civr.ucr.edu/chytrid_fungus.html.



Effects of chytrid fungus.

Attachment 5

California Department of Fish and Wildlife

Aquatic Invasive Species Cleaning/Decontamination Protocols (Northern Region)

Revision February 2016

Attachment D

Sudden Oak Death Syndrome (SODS)

Since the mid-1990s, *Phytophthora ramorum* has killed millions of tanoak trees and several oak tree species (coast live oak, California black oak, Shreve oak, and canyon live oak), and caused twig and foliar diseases in numerous other plant species, including California bay laurel, Douglas-fir, and coast redwood. *P. ramorum* thrives in cool, wet climates. In California, coastal evergreen forests and tanoak/redwood forests within the fog belt are the primary habitat. For more information, visit www.suddenoakdeath.org.



Tanoak mortality in Humboldt County, circa 2006.

For questions on California Department of Fish and Wildlife Northern Region Aquatic Invasive Species procedures, contact:

L. Breck McAlexander, Region 1 Aquatic Invasive Species Coordinator

LMCALEXANDER@dfg.ca.gov ; office: (530) 225-2317; mobile: (530) 440-0208.

Attachment 5

California Department of Fish and Wildlife

Aquatic Invasive Species Cleaning/Decontamination Protocols (Northern Region)

Revision February 2016