

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

REGION 1 – NORTHERN REGION
619 Second Street
Eureka, CA 95501



STREAMBED ALTERATION AGREEMENT

NOTIFICATION NO. 1600-2018-0679-R1

Unnamed Tributary to the Van Duzen River, Tributary to the Eel River
and the Pacific Ocean

Morgan Oliver

Oliver Water Diversion, Impoundment and Stream Crossings Project
9 Encroachments

This Lake or Streambed Alteration Agreement (Agreement) is entered into between the California Department of Fish and Wildlife (CDFW) and Morgan Oliver (Permittee).

RECITALS

WHEREAS, pursuant to Fish and Game Code (FGC) section 1602, the Permittee initially notified CDFW on November 6, 2018 and revised on July 20, 2020, that the Permittee intends to complete the project described herein.

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

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

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

PROJECT LOCATION

The project is located within the Van Duzen River watershed, approximately 1.8 miles southwest of Dinsmore, County of Humboldt, State of California; Section 17, T1N, R5E Humboldt Base and Meridian, in the Larabee Valley U.S. Geological Survey 7.5-minute quadrangle; Assessor's Parcel Number 210-221-013; latitude, longitude: 40.4697, -123.6303 at the first point of diversion (POD-1).

PROJECT DESCRIPTION

This Agreement relies on the Notification materials and a desk review without a CDFW site inspection. The project is limited to nine encroachment(s) (Table 1). Two encroachments are for water diversion infrastructure use and removal from unnamed tributaries to the Van Duzen River. At POD-1, water is diverted for domestic use only.

Work for the water diversion will include use and maintenance of the water diversion infrastructure. At POD-2, the Permittee has elected to decommission diversion infrastructure and cease all water diversion for any purpose. Three encroachments are for onstream reservoirs utilized for domestic purposes only and shall be subject to CDFW site inspection and coordination with North Coast Waterboards and Division of Water Rights. The four other proposed encroachments are to upgrade undersized stream crossings. Work for these encroachments will include excavation, removal of the failing crossings, replacement with new properly sized crossings, backfilling and compaction of fill, and rock armoring as necessary to minimize erosion.

Table 1. Project Encroachments Covered by this Agreement with Description

ID	Latitude/Longitude	Description
POD-1	40.4697, -123.6303	Spring diversion for domestic use only.
POD-2	40.4706, -123.6267	Remove concrete instream diversion and cease all water diversion at this POD.
Onstream Reservoir-1	40.4707, -123.6279	Onstream reservoir, approximately 200,000 gallons, that is tributary to Van Duzen River. Permittee intends to file water rights for domestic use as aesthetic and wildlife only. No water diversion is authorized by this Agreement.
Onstream Reservoir-2	40.4706, -123.6274	Onstream reservoir, approximately 10,000 gallons, that is tributary to Van Duzen River. Permittee intends to file water rights for domestic use as aesthetic and wildlife only. No water diversion is authorized by this Agreement.
Onstream Reservoir-3	40.4700, -123.6293	Onstream reservoir, approximately 130,000 gallons, that is tributary to Van Duzen River. Permittee intends to file water rights for domestic use. Work includes: remove plastic liner from spillway, create rock armored channel and hydrologically disconnect French drain from cannabis cultivation area.
Crossing-1	40.4705, -123.6282	Replace undersized 12" diameter culvert with minimum 30" diameter culvert.
Crossing-2	40.4709, -123.6281	Replace undersized 24" diameter culvert with minimum 42" diameter culvert. Permittee may propose alternative crossing design to CDFW for review and approval, such as a vented ford in order to accommodate the reservoir spillway design.
Crossing-3	40.4725, -123.6282	Replace undersized 12" diameter culvert with minimum 30" diameter culvert.
Crossing-4	40.4721, -123.6300	Replace undersized 8" diameter flex-pipe culvert with minimum 24" diameter culvert. Permittee shall remove fencing from stream channel to allow for unobstructed flow.

Permittee disclosed:

- Rainwater catchment reservoir 4 (located at approximately 40.4697, -123.6293)
- Rainwater catchment reservoir 5 (located at approximately 40.4695, -123.6285)

The Notification states these reservoirs are not hydrologically connected to streams or wetlands, and do not require notification under FGC 1602. If it is determined that these reservoirs require notification under FGC 1602, that work must be covered by a major amendment or a separate Notification.

No other projects that may be subject to FGC section 1602 were disclosed. This Agreement does not retroactively permit any constructed reservoirs (including “ponds”), stream crossings, water diversions, modifications to riparian buffers, or other encroachments not described in Table 1.

PROJECT IMPACTS

Existing fish or wildlife resources the project could substantially adversely affect include **Chinook Salmon** (*Oncorhynchus tshawytscha*), **Coho Salmon** (*O. kisutch*), **Steelhead Trout** (*O. mykiss*), **Western Brook Lamprey** (*Lampetra richardsoni*), **Pacific Lamprey** (*Entosphenus tridentatus*), **Southern Torrent Salamander** (*Rhyacotriton variegatus*), **Pacific Giant Salamander** (*Dicamptodon tenebrosus*), **Foothill Yellow-legged Frog** (*Rana boylei*), **Coastal Tailed Frog** (*Ascaphus truei*), **Western Pond Turtle** (*Actinemys marmorata marmorata*), amphibians, reptiles, aquatic invertebrates, mammals, birds, and other aquatic and riparian species.

The adverse effects the project could have on the fish or wildlife resources identified above include:

Impacts to water quality:

increased water temperature;
increased turbidity;
increased sedimentation (chronic or episodic);

Impacts to bed, channel, or bank and direct effects on fish, wildlife, and their habitat:

loss or decline of riparian habitat;
loss or decline of instream channel habitat;
direct impacts on benthic organisms;
direct and/or incidental take of aquatic and/or terrestrial organisms;

Impacts to natural flow and effects on habitat structure and process:

reduced instream flow;
cumulative effect of diversions in the watershed;
impediment of up- or down-stream movement;
water quality degradation; and

damage to aquatic habitat and function.

MEASURES TO PROTECT FISH AND WILDLIFE RESOURCES

1. Administrative Measures

Permittee shall meet each administrative requirement described below.

- 1.1 Documentation at Project Site. Permittee shall make the Agreement, any extensions and amendments to the Agreement, and all related notification materials and California Environmental Quality Act (CEQA) documents, readily available at the project site at all times and shall be presented to CDFW personnel, or personnel from another state, federal, or local agency upon request.
- 1.2 Providing Agreement to Persons at Project Site. Permittee shall provide copies of the Agreement and any extensions and amendments to the Agreement to all persons who will be working on the project at the project site on behalf of Permittee, including but not limited to contractors, subcontractors, inspectors, and monitors.
- 1.3 Notification of Conflicting Provisions. Permittee shall notify CDFW if Permittee determines or learns that a provision in the Agreement might conflict with a provision imposed on the project by another local, state, or federal agency. In that event, CDFW shall contact Permittee to resolve any conflict.
- 1.4 Project Site Entry. Permittee agrees to allow CDFW employees access to the Project site for the purpose of inspecting and/or monitoring, provided CDFW: a) provides 24 hours advance notice; and b) allows Permittee or representatives to participate in the inspection and/or monitoring. This condition does not apply to CDFW law enforcement personnel.
- 1.5 Applicable Permits. Land development or alterations may be subject to additional federal, state and local laws, regulations, and permitting requirements, including but not limited to the following:
 - The Clean Water Act (CWA) as implemented through permits, enforcement orders, and self-implementing requirements. When needed per the requirements of the CWA, Permittee shall obtain a CWA section 404 (33 U.S.C. § 1344) permit from the United States Army Corps of Engineers (Army Corps) and a CWA section 401 (33 U.S.C. § 1341) water quality certification from the State Water Board or the Regional Water Board with jurisdiction.
 - The California Water Code as implemented through applicable water quality control plans (often referred to as Basin Plans), waste discharge requirements (WDRs) or waivers of WDRs, enforcement orders, and self-

implementing requirements issued by the State Water Resources Control Board (State Water Board) or Regional Water Quality Control Boards (Regional Water Boards).

- All applicable state, city, county, or local regulations, ordinances, or license requirements including, but not limited to those for grading, construction, and building.
- All applicable requirements of the California Department of Forestry and Fire Protection (CAL FIRE), including the Board of Forestry.

1.6 Cannabis Cultivation Policy. If commercial cannabis cultivation occurs on the project parcel, the State Water Resources Control Board (SWRCB) requires enrollment in the Cannabis Cultivation General Order and compliance with the Cannabis Cultivation Policy - Principles and Guidelines for Cannabis Cultivation, available at:
https://www.waterboards.ca.gov/water_issues/programs/cannabis/cannabis_policy.html

1.6.1 Site Management Plan and Related Technical Reports. Permittee shall submit to CDFW the initial preparation and subsequent updates to the project's Site Management Plan and related technical reports prepared in conformance with the SWRCB Cannabis Cultivation Policy.

1.6.2 Compliance Gauges. The authorized surface water diversion period for commercial cannabis cultivation is December 15 through March 31; under certain circumstances, diversion may begin between November 1 to December 14 (SWRCB Cannabis Cultivation Policy, Attachment A, Section 3, Requirement 5). Water diversion for cannabis cultivation may only occur if sufficient flow exists at the Permittee's assigned compliance gauge. The State Water Resources Control Board developed an online mapping tool to assist cannabis cultivators with finding their assigned compliance gauge used to determine whether diversion may occur:
https://www.waterboards.ca.gov/water_issues/programs/cannabis/online_mapping_tool.html. Permittee must check the compliance gauge daily prior to diverting to ensure sufficient water is available.

1.6.3 Onstream Reservoirs. Use of onstream reservoirs for cannabis cultivation requires a Small Irrigation Use Registration, in addition to a LSAA. Registrants must request a joint determination from the Deputy Director of the Division of Water Rights and CDFW. If additional work or reservoir decommissioning is deemed necessary, Permittee shall submit an amendment request or new Notification.

1.7 Water Rights. This Agreement does not constitute a valid water right. All water diversion facilities that Permittee owns, operates, or controls shall be operated and

maintained in accordance with current law and applicable water rights. Water rights are administered by the State Water Resources Control Board as described here: https://www.waterboards.ca.gov/waterrights/water_issues/programs/registrations/.

- 1.8 Change of Conditions and Need to Cease Operations. If conditions arise, or change, in such a manner as to be considered deleterious by CDFW to the stream or fish and wildlife, operations shall cease until corrective measures approved by CDFW are taken. This includes new information that indicates bypass flows, diversion rates or other measures provided in this Agreement are not providing adequate protection to keep aquatic life downstream in good condition or to avoid “take” or “incidental take” of federal or State listed species.
- 1.9 Notification Materials. Permittee’s Notification of Lake or Streambed Alteration, together with all maps, plans, photographs, drawings, and all other supporting documents submitted with the Notification and received on November 6, 2018 and revised on July 20, 2020, is hereby incorporated by reference into this Agreement. Permittee shall conduct project activities within the work areas, and using the protective measures, described in the Notification and supporting documents, unless such project activities, work areas or protective measures are modified by the provisions of this Agreement, in which case the activities shall be conducted as described in this Agreement.

2. Avoidance and Minimization Measures

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

Work Periods and Pre-Project Notice

- 2.1 Work Period. All work, not including authorized diversion of water, shall be confined to the period **June 15 through October 15** of each year. Work within the active channel of a stream shall be restricted to periods of **dry weather**. Permittee shall monitor precipitation forecasts and potential increases in stream flow when planning construction activities. Construction activities shall cease, and all necessary erosion control measures shall be implemented prior to the onset of precipitation. A notice of completed work, including dates of activities and photographs of each site, shall be submitted to CDFW within seven (7) days of project completion.
- 2.2 CDFW Notification of Work Initiation and Completion. Permittee shall contact CDFW in writing within the 7-day period preceding the beginning of work permitted by this Agreement. Information provided shall include Agreement number, and the anticipated start date. Subsequently, Permittee shall notify CDFW in writing no later than seven (7) days after the project is fully completed. **Notification of completion will include photographs of the completed work, erosion control**

measures, waste containment and disposal, and a summary of any CNDDB submissions as required below.

- 2.3 Work Period Extension Requests. If Permittee needs more time to complete the project, CDFW may grant a work period extension on a day-to-day basis. Extension requests shall be made in writing before **October 5** of each year and shall: 1) describe the extent of work already completed; 2) detail the uncompleted activities; 3) detail the time required to complete each remaining activity; and 4) provide photographs of the completed work site(s) and remaining work. Requests shall describe the effects of increased stream flows, rain delays, increased erosion control measures, access constraints caused by saturated soils, and anticipated effects of climatic conditions on growth of erosion control grasses. Work period extensions are issued at the discretion of CDFW. CDFW will review the written request and may require additional measures to protect fish and wildlife resources.

General Stream Protection Measures

- 2.4 Prohibition of Live Stream Work. No work is authorized in a live flowing stream. All work shall be conducted when the stream is dry. Permittee shall notify CDFW if it determines that work in a live flowing stream is required to complete a project and will submit a diversion plan.
- 2.5 Maintain Passing of Fish Up and Down Stream. It is unlawful to construct or maintain in any stream any device or contrivance that prevents, impedes, or tends to prevent or impede, the passing of fish (as defined in FGC Section 45 “fish” means a wild fish, mollusk, crustacean, invertebrate, amphibian, or part, spawn, or ovum of any of those animals) up and down stream pursuant to FGC section 5901.
- 2.6 Decontamination. Permittee shall ensure all project personnel adhere to the Northern Region California Department of Fish and Wildlife Aquatic Invasive Species Decontamination Protocol for all field gear and equipment that will be in contact with water. Heavy equipment and other motorized or mechanized equipment that contacts water shall adapt watercraft decontamination protocols found in the AIS Decontamination Protocol.
<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=92821&inline>
- 2.7 Staging and Storage. Staging and storage areas for equipment, materials, fuels, lubricants and solvents shall be located outside of the stream channel and banks, and away from riparian vegetation. Structures and associated materials not designed to withstand high seasonal flows shall be removed to areas above the ordinary high-water mark before such flows occur or at the end of the yearly work period, whichever occurs first.
- 2.8 Equipment and Vehicle Leaks. Equipment or vehicles operated in or near the stream shall be checked and maintained daily to prevent leaks. Stationary equipment (e.g. motors, pumps, generators, welders, etc.) in or near the stream

shall be positioned over drip pans. Stationary heavy equipment shall have sufficient containment to manage catastrophic spills or leaks.

- 2.9 Hazardous Substances. Debris, soil, silt, bark, slash, sawdust, rubbish, creosote-treated wood, raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any substance or material deleterious to fish, plant life, mammals, or bird life, or their habitat, shall be prevented from contaminating the soil and/or entering the waters of the State, pursuant to FGC Sections 5650 and 5652. Permittee shall ensure hazardous or toxic materials are stored in watertight containers and promptly removed from the worksite.
- 2.10 Spill Containment and Cleanup. All authorized activities performed in or near a stream shall have on-site cleanup equipment (e.g. boom, skimmers, etc.) and absorbent materials for spill containment and cleanup prior to the start of work and for the duration of the project. In the event of a spill, Permittee shall immediately notify the California Office of Emergency Services State Warning Center at 1-800-852-7550 and initiate clean-up. Permittee shall immediately notify CDFW of any spills and shall follow CDFW cleanup procedures and guidance.
- 2.11 Stockpiled Materials. Materials shall not be stockpiled where they may wash into the stream or cover aquatic or riparian vegetation. Permittee shall monitor the National Weather Service (NWS) 72-hour forecast for the project area and cover stockpiles if NWS predicts precipitation.
- 2.12 Erosion Control. Permittee shall implement erosion control measures throughout all phases of operation where sediment delivery could occur. Silt fences, straw bales, gravel or rock lined ditches, water check bars, broadcasted weed-free straw, or other approved erosion control measures shall be used wherever sediment has the potential to leave the work site and enter the stream.
- 2.13 Silt Laden Runoff. At no time shall silt laden runoff enter the stream or be directed to where it may enter the stream. Silt control structures shall be monitored for effectiveness and shall be repaired or replaced as needed.
- 2.14 Disposal and Removal of Material. Permittee shall remove from the work area, and relocate outside of the stream and riparian area, all spoils and construction debris prior to inundation. All removed material and debris shall be disposed of according to State and local laws and ordinances.
- 2.15 Waste Containment and Disposal. Permittee shall contain all refuse in enclosed, wildlife proof, storage containers, at all times, and relocate refuse to an authorized waste management facility, in compliance with State and local laws, on a regular and ongoing basis. All refuse shall be removed from the site and properly disposed of at the close of the cultivation season and/or when the parcel is no longer in use.

- 2.16 Wash Water. Water containing mud, silt, or other pollutants from equipment washing or other activities, shall not be allowed to enter a lake or flowing stream or placed in locations that may be subjected to high storm flows.
- 2.17 Allow Wildlife to Leave Unharmd. Permittee shall allow any wildlife encountered to leave the project area unharmed. This Agreement does not allow for the trapping, capture, or relocation of any state or federally listed species.
- 2.18 Escape Ramp in Trench. At the end of each work day, Permittee shall place an escape ramp at each end of any open trench deeper than six inches with walls greater than 30 degrees to allow entrapped animals to escape. The ramp may be constructed of either dirt fill, non-treated wood, or other suitable material placed at an angle no greater than 30 degrees.
- 2.19 Prohibition Against Use of Plastic Netting in Erosion Control Measures. Permittee shall not use erosion control devices containing plastic, including photo- or bio-degradable plastic netting. Erosion control mats, blankets, and straw or fiber wattles shall consist entirely of natural fiber.
- 2.20 Remove Temporary Flagging, Fencing, and Barriers. Permittee shall remove all temporary flagging, fencing, and/or barriers from the project site and vicinity of the stream upon completion of project activities.

Special Status Species Avoidance and Minimization

- 2.21 Prohibition on Take of Listed Species. This agreement does not authorize the take or incidental take of any State or Federal listed threatened or endangered listed species. State Listed or Fully Protected Species include any native plant species listed as rare under the Native Plant Protection Act (FGC, § 1900 et seq.; Cal. Code Regs., tit. 14, § 670.2), any species that is listed or is a candidate for listing under the California Endangered Species Act (FGC Code, § 2080 et seq.; Cal. Code Regs., tit. 14, §§ 670.2, 670.5), or any fully protected species (FGC, §§ 3511, 4700, 5050, 5515). Permittee shall consult with the appropriate agency prior to commencing the project.
- 2.22 Avoidance of Nesting Birds. Permittee shall avoid nests occurring within and near the project site pursuant to the Migratory Bird Treaty Act of 1918 and FGC section 3503. Vegetation maintenance/removal shall be confined to the period **September 1 to January 31** of any year in which this Agreement is valid, provided the work area is outside the stream. Vegetation maintenance/removal may continue during precipitation events provided stream flows have not risen into work areas and sediment delivery will not result.
- 2.23 Special-Status Plants. If Special-Status plants (State listed and taxa that meet the definition of Rare or Endangered under CEQA Guidelines 15380) may occur on the

project site, the Designated Biologist shall conduct seasonally-appropriate surveys of the area to document potential effects prior to the implementation of Project-related activities. If populations of any of these species are found:

2.23.1 Exclusion fencing shall be installed a minimum of 100 feet from the location of special-status plants, and no Project activity shall occur within the area occupied by special-status plants or the 100-foot buffer area around these plants.

2.23.2 If special-status plant populations are found on the Project site and it is not feasible to avoid them during Project-related activities, the Project applicant shall consult with CDFW to determine if the project may be covered under this Agreement. Separate notification pursuant to FGC section 1602 may be required in some instances.

Vegetation Management

2.24 Riparian Buffers. Riparian buffers shall be not be modified, unless authorized by CDFW in writing.

2.25 Minimum Vegetation Removal. No native riparian vegetation shall be removed, except where authorized by CDFW. Permittee shall limit the disturbance or removal of native vegetation to the minimum necessary to achieve design guidelines and standards for the authorized activity. Permittee shall take precautions to avoid damage to vegetation outside the work area.

2.26 Vegetation Maintenance. Permittee shall limit vegetation management (e.g., trimming, pruning, or limbing) and removal for the purpose of the authorized activity to the use of hand tools. Vegetation management shall not include treatment with herbicides.

2.27 Invasive Plant Species. Permittee shall not plant, seed or otherwise introduce invasive plant species within the Project area. Invasive plant species include those identified in the California Invasive Plant Council's inventory database, which is accessible at: <https://www.cal-ipc.org/plants/inventory/>.

Water Diversion

2.28 Maximum Diversion Rate. The maximum instantaneous diversion rate from the water intake shall not exceed **three (3) gallons per minute** at any time.

2.29 Bypass Flow. Permittee shall pass **80% of the flow** at all times to keep all aquatic species including fish and other aquatic life in good condition below the POD.

2.30 Seasonal Diversion Minimization. No more than **350 gallons** in any one day shall be diverted (intended for household domestic use only) during the low flow season

from **May 15 to October 31** of each year. Water shall be diverted only if Permittee can adhere to the maximum diversion rate and bypass flow conditions of this Agreement.

- 2.31 Measurement of Diverted Flow. Permittee shall install and maintain an adequate measuring device for measuring the instantaneous and cumulative rate of diversion. This measurement shall begin as soon as this Agreement is signed by Permittee. The device shall be installed within the flow of diverted water. Permittee shall maintain records of diversion, and provide information including, but not limited to the following:

2.31.1 A log including the date, time and quantity of water diverted from the POD.

2.31.2 The amount of water used per day for cannabis cultivation separated out from the amount of water used for other irrigation purposes and other uses of water (e.g., domestic use or fire protection).

2.31.3 Permittee shall make available for review at the request of CDFW the diversion records required by the SWRCB Cannabis Cultivation Policy.

Water Diversion Infrastructure

- 2.32 Intake Structure. No polluting materials (e.g., particle board, plastic sheeting, bentonite) shall be used to construct or screen, or cover the diversion intake structure.

- 2.33 Intake Structure Placement. Infrastructure installed in the streambed (e.g. spring box) shall not exceed 10% of the active-channel width and shall not be located in the deepest portion of the channel. The depth of the intake shall be no greater than 12 inches below the streambed.

- 2.34 Intake Screening Maintenance. Permittee shall regularly inspect, clean, and maintain screens in good condition.

- 2.35 Intake Screens on Fish Bearing Streams. All intakes shall be screened with at least 2.5 square feet of wetted, unobstructed screen, have at least 2.5 square feet of wetted, unobstructed screen. Screens shall be constructed of wire mesh, perforated plate, or pipe with at least 27 percent open area. Round openings in the screen shall not exceed 3/32 inch (2.38 millimeters) in diameter. Slotted openings shall not exceed 1/16 inch (1.75 mm) horizontally (providing a maximum diagonal opening of 3/32 inch).

- 2.36 Intake Screens on Non-Fish Bearing Streams. All intakes shall be screened and openings in the screen shall not exceed 1/8 inch diameter (horizontal for slotted or square openings) or 3/32 inch for round openings.

- 2.37 Intake Shall Not Impede Aquatic Species Passage. Water diversion structures shall be designed, constructed, and maintained such that they do not constitute a barrier to upstream or downstream movement of aquatic life.
- 2.38 Exclusionary Devices. Permittee shall keep diversion-related structures covered at all times to prevent the entrance and entrapment of amphibians and other wildlife.
- 2.39 Diversion Intake Removal. Permittee shall plug, cap, block (e.g., with a shut-off valve located near the source), or remove all intakes when no water diversion is planned for a period of one week or longer.
- 2.40 Heavy Equipment Use. No heavy equipment shall be used in the excavation or replacement of the existing water diversion structure. Permittee shall use hand tools or other low impact methods of removal/replacement. All project materials and debris shall be removed from the project site and properly disposed of off-site upon project completion.

Diversion to Storage

- 2.41 Water Storage. All water storage facilities (WSFs) (e.g., reservoirs, storage tanks, mix tanks, and bladders tanks), except those specifically authorized by CDFW and included as encroachments in a current Agreement, shall be located outside the active 100-year floodplain. Covers/lids shall be securely affixed to water tanks to prevent entry by wildlife. Permittee shall cease all water diversion at the POD when WSFs are full.
- 2.42 Water Storage Maintenance. WSFs shall have float valves to prevent overflowing. Water shall not leak, overflow, or overtop WSFs at any time. Permittee shall regularly inspect all WSFs and water diversion infrastructure, and immediately repair leaks.
- 2.43 Water Conservation. Permittee shall make best efforts to minimize water use, and to follow best practices for water conservation and management.
- 2.44 Limitations on Impoundment and Use of Diverted Water. Permittee shall impound and use water in accordance with a valid water right, including any limitations on when water may be impounded and used, the purpose for which it may be impounded and used, and the location(s) where water may be impounded and used.

Reservoirs

- 2.45 Off-stream Reservoirs. Off-stream Reservoirs shall be appropriately designed, sized, and managed to contain diverted water, plus precipitation and storm water runoff, without overtopping. Permittee shall install an overflow spillway designed to withstand a 100-year flood event, that discourages channelization, and promotes dispersal and infiltration of flows to prevent overflow from reaching Waters of the

State. The spillway shall be designed to allow for a minimum of two feet of freeboard.

- 2.46 On-stream Reservoirs. On-stream Reservoirs shall be appropriately designed, sized, and managed to contain impounded water, plus precipitation and storm water runoff, without causing erosion or delivery of non-native species. Permittee shall install an overflow spillway designed to withstand a 100-year flood event, that maintains hydrologic connection.
- 2.47 Diversion. Water shall be diverted to reservoirs only if Permittee can adhere to the diversion rate, bypass flow, season of diversion and all other relevant conditions of this Agreement.
- 2.48 No Stocking. Stocking of fish, wildlife, or plant of any kind, in any Waters of the State, including reservoirs, shall be prohibited without written permission from CDFW pursuant to FGC section 6400.
- 2.49 Invasive Species Management for Reservoirs. Permittee shall implement an invasive species management plan prepared by a Biologist for any existing or proposed reservoir. The plan shall include, at a minimum, an annual survey for invasive aquatic species, including the American bullfrog (*Lithobates catesbeianus* = *Rana catesbeiana*). The Biologist shall coordinate with CDFW to develop eradication measures if invasive aquatic species are identified.
- 2.49.1 Bullfrog Management Plan. If bullfrogs are observed, they shall be appropriately managed, potentially including annual draining and drying of reservoirs, following the guidelines in Exhibit A. Permittee shall submit a copy of the monitoring report to CDFW annually.
- 2.49.2 All Other Invasive Aquatic Species. If at any time additional invasive aquatic species are detected, Permittee shall submit an updated Invasive Species Management Plan for Reservoirs for CDFW review and approval.
- 2.50 Seasonal Diversion Minimization. For Onstream Reservoir-3, to minimize adverse impacts to native pond breeding amphibians the following diversion minimizations apply: From November 1 to March 31, Permittee shall divert water at a rate no greater than the rate of water flowing into the reservoir (i.e. water diversion shall not decrease the reservoir depth). From April 1 – September 1, when native larval amphibians are present, Permittee shall cease diverting water once the reservoir volume is one third of the maximum reservoir volume. To comply with this measure, Permittee shall establish a fixed visual marker(s) (e.g. stage plate) in the reservoir as a reference for water level thresholds. Cumulative diversion from the pond April 1 – October 31 shall not exceed the pond's storage capacity.
- 2.51 Wildlife Entrapment Prevention. If open reservoirs have plastic lining, slopes greater than 2:1, or potential for wildlife entrapment, Permittee shall install exit

ramps to prevent wildlife entrapment. Exit ramps shall be no greater than 2:1 slope and provide a feasible mechanism of escape.

- 2.52 Reservoir Lining. To comply with FGC Sections 5650 and 5652, Permittee shall not use polluting materials (e.g. plastic sheeting, bentonite) to construct or line on-stream reservoirs.
- 2.53 Water Quality and Habitat Maintenance of On-Stream Reservoirs. To minimize adverse impacts to native pond breeding amphibians and downstream fish and wildlife resources inflow shall equal outflow April 1 – December 1 of each year.
- 2.54 Inspection. Reservoirs shall be inspected by a licensed geologist or engineering geologist to determine if the embankment and spillway are stable, appropriately designed for 100-year flows and associated debris, and to evaluate potential risks to downstream resources. Additional work and amendments to the Agreement may be required.

Stream Crossings

- 2.55 Road Approaches. Permittee shall treat road approaches to new or re-constructed crossings to minimize erosion and sediment delivery to the stream. Permittee shall ensure road approaches are hydrologically disconnected to the maximum extent feasible to prevent sediment from entering the crossing site, including during the construction or reconstruction of a stream crossing. Road approaches shall be armored from the crossing for a minimum of 50 feet in both directions, or to the nearest effective water bar or point where road drainage does not drain to the crossing, with durable, clean, screened, angular rock.
- 2.56 Excavated Fill. Excavated fill material shall be placed in upland locations where it cannot deliver to a watercourse. To minimize the potential for material to enter the stream, all excavated and relocated fill material shall be tractor contoured (to drain water) and tractor compacted to effectively incorporate and stabilize loose material into existing road and/or landing features.
- 2.57 Runoff from Steep Areas. Permittee shall make preparations so that runoff from steep, erodible surfaces will be diverted into stable areas with little erosion potential, or contained behind erosion control structures. Erosion control structures such as straw bales and/or siltation control fencing shall be placed and maintained until the threat of erosion ceases. Frequent water checks shall be placed on dirt roads, cat tracks, or other work trails to control erosion.
- 2.58 No Equipment in Wetted Areas. No heavy equipment shall enter the wetted stream channel.
- 2.59 Fill Materials. No fill material, other than clean rock, shall be placed in the stream channel.

- 2.60 Material Sizing. Rock shall be sized to withstand washout from high stream flows and extend above the ordinary high-water level.
- 2.61 Crossing Maintenance. Permittee shall provide site maintenance for the life of the structures, including, but not limited to, re-applying erosion control to minimize surface erosion and ensuring drainage structures, streambeds and banks remain sufficiently armored and/or stable. Permanent culverts shall be maintained and kept open year-round. Permittee is responsible for such maintenance as long as the culvert remains in the stream.
- 2.62 Armoring. The placement of armoring shall be confined to the work period when the stream is dry or at its lowest flow.
- 2.63 Armor Placement. Rock armoring shall not constrict the natural stream channel width and shall be keyed into a footing trench with a depth sufficient to prevent instability.
- 2.64 Crossing Decommissioning. When stream crossings and fills are removed, all fill shall be excavated down to the original stream channel and outwards, horizontally, as wide as or wider than the natural channel to form a channel as close as feasible to the natural stream grade and alignment. The restored stream bank slopes shall be no steeper than a 2:1 slope (horizontal: vertical) or natural slope. Restored slopes shall be stabilized to prevent slumping and to minimize soil erosion that could lead to sediment deposition into Waters of the State.

Culvert Installation

- 2.65 Permanent Culvert Sizing. Permanent culverts shall be sized to accommodate the estimated 100-year flood flow [i.e. ≥ 1.0 times the width of the bankfull channel width or the 100-year flood size, whichever is greater], including debris, culvert embedding, and sediment loads (Cafferata et al. 2017, Designing Watercourse Crossings for Passage of 100-Year Flood Flows, Wood, and Sediment).
<http://timbertraining.resources.ca.gov/mod/resource/view.php?id=378>
- 2.66 Critical Dips. Where diversion potential exists, a critical dip shall be installed to direct flood flow over the crossing fill and back into the channel. Critical dips shall be constructed to accommodate the entire estimated 100-year flood flow and may be installed by lowering the existing fill over the crossing or by constructing a deep, broad rolling dip over the crossing surface to prevent flood flow from diverting down the road.
- 2.67 Culvert Materials in High Fire Zones. If the project is located in a high to very high Fire Hazard Severity Zone as designated by CAL FIRE, CDFW recommends culvert materials consist of corrugated metal pipe. Use of High-Density Polyethylene pipe is discouraged. <https://osfm.fire.ca.gov/divisions/wildfire->

[prevention-planning-engineering/wildland-hazards-building-codes/fire-hazard-severity-zones-maps/](#)

- 2.68 Fill Material. Existing fill material in the crossing shall be excavated down vertically to the approximate original channel and outwards horizontally to the approximate crossing hinge points (transition between naturally occurring soil and remnant temporary crossing fill material) to remove any potential unstable debris and voids in the older fill prism.
- 2.69 Culvert Grade. Culvert shall be installed to grade (not perched or suspended), aligned with the natural stream channel, and extend lengthwise completely beyond the toe of fill. If culvert cannot be set to grade, it shall be placed in the lower third of the fill face, and a downspout or energy dissipator (such as boulders, rip-rap, or rocks) shall be installed above or below the outfall as needed to effectively control stream bed, channel, or bank erosion (scouring, headcutting, or downcutting). Permittee shall ensure basins are not constructed and channels are not widened at culvert inlets.
- 2.70 Culvert Bed. Culvert bed shall be composed of either compacted rock-free soil or crushed gravel. Bedding beneath the culvert shall provide for even distribution of the load over the length of the pipe, and allow for natural settling and compaction to help the pipe settle into a straight profile. The crossing backfill materials shall be free of rocks, limbs, or other debris that could allow water to seep around the pipe, and shall be compacted. No geotextile fabric shall be placed in the culvert bed, streambed, bank or channel.
- 2.71 Culvert Armoring. Culvert inlet, outlet (including the outfall area), and fill faces shall be armored where stream flow, road runoff, or rainfall energy is likely to erode fill material and the outfall area.

3. Reporting Measures

Permittee shall meet each reporting requirement described below.

- 3.1 CDFW Notification of Work Initiation. Permittee shall contact CDFW within the seven-day period **preceding the beginning of work** permitted by this Agreement. Information to be disclosed shall include Agreement number, and the anticipated start date.
- 3.2 Work Completion. The proposed work shall be completed by no later than October 15, 2022. Notification of completion will include dates work occurred, photographs of work stages and the completed work, erosion control measures, waste containment and disposal, and a summary of any CNDDDB submissions and shall be submitted to CDFW LSA program at 619 Second Street, Eureka, CA 95501 within seven (7) days of project completion.

- 3.3 Project Inspection. The Project shall be inspected by a qualified, licensed professional to ensure that the stream crossings were installed and functioning as designed and in accordance with this Agreement, and the onstream reservoirs meet the terms of this Agreement and the diversion infrastructure complies with the terms of this Agreement. A copy of the inspection report, including photographs of each site, shall be submitted to CDFW within 90 days of completion of each separate project. Permittee shall submit the **Project Inspection Report** to CDFW LSA Program at 619 Second Street, Eureka, CA 95501.
- 3.4 Measurement of Diverted Flow. Copies of the **Water Diversion Records** shall be submitted to CDFW LSA Program at 619 Second Street, Eureka, CA 95501 no later than **March 31** of each year beginning in **2021**, to report the preceding year's diversion.
- 3.5 Site Management Plan and Related Technical Reports. Permittee shall submit to CDFW the project's current draft of the Site Management Plan and related technical reports if it was not included in the Notification. If the Site Management Plan and/or related technical reports are still in preparation, Permittee shall submit it and all subsequent revisions and updates within **30 days** of submittal to the SWRCB.
- 3.6 Invasive Species Management Plan for Reservoirs. Permittee shall submit an Invasive Species Management Plan for Reservoirs by **May 31, 2021** for CDFW approval; or adopt the Bullfrog Management Plan (Exhibit A) if no other invasive species are present. Permittee shall submit Monitoring and Implementation Report no later than **December 31** of each year. The Invasive Species documents shall be submitted to CDFW LSA Program at 619 Second Street, Eureka, CA 95501.
- 3.7 Biological Assessment for Onstream Reservoirs. The applicant shall conduct a Biological Assessment (BA) of the onstream reservoirs. The BA shall include information of fish, amphibian, and plant species occurrences in the reservoirs, including the relative abundance. The BA shall be submitted to CDFW LSA Program at 619 Second Street, Eureka, CA 95501 no later than **May 31, 2021**.
- 3.8 Reservoir Inspection. Permittee shall submit to CDFW an inspection report for reservoirs no later than **May 31, 2021**. The report shall be prepared by a qualified geologist or engineer licensed in the State of California and include recommendations regarding stability and erosion potential minimizations.
- 3.9 Notification to the California Natural Diversity Database. If any special status species are observed at any time during the project, the Designated Biologist shall submit California Natural Diversity Data Base (CNDDB) forms to the CNDDB within **five (5) working days** of the sightings. A summary of CNDDB submissions shall be included with the completion notification. Forms and instructions for

submissions to the CNDDDB may be found at:
<https://www.wildlife.ca.gov/Data/CNDDDB/Submitting-Data>.

CONTACT INFORMATION

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

To Permittee:

Morgan Oliver
3090 Patricks Point Drive
Trinidad, California 95570
(707) 677-2007

To CDFW:

Department of Fish and Wildlife
Northern Region
619 Second Street
Eureka, California 95501
Attn: Lake and Streambed Alteration Program – Andrew Orahoske
Notification #1600-2018-0679-R1

LIABILITY

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

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

SUSPENSION AND REVOCATION

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

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

ENFORCEMENT

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

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

OTHER LEGAL OBLIGATIONS

This Agreement does not relieve Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, from complying with, or obtaining any other permits or authorizations that might be required under, other federal, state, or local laws or regulations before beginning the project or an activity related to it. For example, if the project causes take of a species listed as threatened or endangered under the Endangered Species Act (ESA), such take will be unlawful under the ESA absent a permit or other form of authorization from the U.S. Fish and Wildlife Service or National Marine Fisheries Service.

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

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

AMENDMENT

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

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

TRANSFER AND ASSIGNMENT

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

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

EXTENSIONS

In accordance with FGC section 1605, subdivision (b), Permittee may request one extension of the Agreement, provided the request is made prior to the expiration of the Agreement's term. To request an extension, Permittee shall submit to CDFW a completed CDFW "Request to Extend Lake or Streambed Alteration" form and include with the completed form payment of the extension fee identified in CDFW's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5). CDFW shall process the extension request in accordance with FGC section 1605, subdivisions (b) through (e).

If Permittee fails to submit a request to extend the Agreement prior to its expiration, Permittee must submit a new notification and notification fee before beginning or continuing the project the Agreement covers (Fish & G. Code § 1605, subd. (f)).

EFFECTIVE DATE

The Agreement becomes effective on the date of CDFW's signature, which shall be: 1) after the Permittee signature; 2) after CDFW complies with all applicable requirements under CEQA; and 3) after payment of the applicable FGC section 711.4 filing fee listed at <https://www.wildlife.ca.gov/Conservation/CEQA/Fees>.

TERM

This Agreement shall **expire five (5) years** from date of execution, unless it is terminated or extended before then. All provisions in the Agreement shall remain in force throughout its term. The Permittee shall remain responsible for implementing any provisions specified herein to protect fish and wildlife resources after the Agreement expires or is terminated, as FGC section 1605, subdivision (a)(2) requires.

EXHIBITS

The documents listed below are included as exhibits to the Agreement and incorporated herein by reference.

A. Exhibit A. Bullfrog Monitoring and Management Plan

AUTHORITY

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

AUTHORIZATION

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

CONCURRENCE

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

FOR MORGAN OLIVER



Morgan Oliver

12.28.20

Date

FOR DEPARTMENT OF FISH AND WILDLIFE

Cheri Sanville

Senior Environmental Scientist Supervisor

Date

EXHIBIT A.

BULLFROG MONITORING AND MANAGEMENT PLAN FOR 1600-2018-0679-R1

GENERAL BULLFROG INFORMATION

The American bullfrog (*Lithobates catesbeianus* = *Rana catesbeiana*); hereafter bullfrog, is an invasive non-native species in California and poses a significant threat to California's native fish and wildlife resources. Bullfrogs were introduced in California over 100 years ago from eastern parts of the United States as a food supply but have since caused substantial ecological consequences. Bullfrogs are considered highly invasive and are well documented to prey upon a variety of fish and wildlife species, including some that are rare, threatened, and endangered. Human modifications to the environment provide favorable conditions to bullfrogs such as artificially created agricultural ponds, canals, and ditches where warm, still water occurs. As a result, bullfrogs have spread throughout California.

Efforts to control bullfrogs have been met with varying degrees of success because: 1) bullfrogs can be difficult to detect, and go dormant from fall through winter, 2) bullfrogs often take cover in difficult areas to manage (e.g. dense vegetation), 3) they can travel long distances to colonize and re-colonize areas, 4) they have high reproductive output, 5) they are wary and readily flee perceived threats, and 6) they can survive physical trauma remarkably well. CDFW scientific staff recognizes there is an urgent and immediate need to develop improved bullfrog management strategies to protect California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public. Public support and implementation of bullfrog control in California is an important conservation strategy that will help protect natural resources for future generations.

MONITORING

The Project reservoir(s) shall be monitored for bullfrog presence on an annual basis with a minimum of five total surveys, no less than two weeks apart, throughout the months of May-July

- All pond survey effort must be made by a person knowledgeable in bullfrog identification (see Appendix A for reference photos);
- Survey efforts shall include listening for bullfrog calls and slowly walking the complete perimeter of the pond at night* (dusk or later) while shining a flashlight to detect movement and eye-shine

If bullfrogs are not detected upon completion of five total surveys, or at any other time of the year incidentally, removal efforts are not required that year.

*Day time monitoring can also be conducted to aid detection but is not required under this plan.

SUCCESS CRITERIA

The level of effort needed to successfully manage bullfrog populations varies with infestation levels. This plan shall be considered successfully implemented if sufficient effort is provided to prevent adult bullfrogs from reproducing in the reservoir(s) each year, and no bullfrog life-stages can be detected. Bullfrogs are capable of traveling long distances over-land, and on-going

efforts will be required to ensure dispersing bullfrogs do not colonize the reservoir(s) at a future time.

OPTIONS FOR MANAGEMENT

Two management methods may be employed for controlling bullfrogs under this plan and include:

- Manual direct removal
- Reservoir de-watering (Hydro-modification)

Implementing both reservoir de-watering and manual direct removal is currently believed to be the most effective method of managing bullfrog infestations. For reservoirs that are heavily infested with juvenile bullfrogs and/or tadpoles, reservoir dewatering may be necessary to break the bullfrog's life cycle and prevent on-going reproduction. Prior to conducting reservoir dewatering activities, please coordinate with CDFW Scientist Andrew Orahoske, andrew.orahoske@wildlife.ca.gov.

Direct Removal

All direct removal efforts must be made by a person knowledgeable in bullfrog identification.

- Removal efforts must occur during, but are not limited to the active/breeding season, occurring May – July;
- A minimum of **five** efforts throughout the season are considered necessary;
- Direct removal efforts are typically most effective when conducted at night with use of lights but can also be conducted during the day;
- Direct removal must include working the entire perimeter of the reservoir;
- A rubber raft or small boat may be necessary to successfully remove some individuals;
- A team of two individuals or more is often helpful, one person for shining lights and/or operating a boat and the other person to perform removal efforts;
- Bullfrog tadpoles must be removed and dispatched and must not be relocated or kept as pets.

Management Authorization

Take of bullfrogs is specifically allowed in the California Code of Regulations (CCR), Title 14 (T-14) section 5.05(a)(28), under the authority of a sport fishing license. There is no daily bag limit, possession limit or hour restriction, but bullfrogs can only be taken by hand, hand-held dip net, hook and line, lights, spears, gigs, grabs, paddles, bow and arrow or fish tackle.

Alternatively, FGC Section 5501 allows CDFW, as limited by the commission, to issue a permit to destroy fish that are harmful to other wildlife. The regulations have addressed this under Section CCR T-14 226.5 Issuance of Permits to Destroy Harmful Species of Fish in Private Waters for Management Purposes. This allows CDFW to issue free permits to destroy harmful aquatic species by seining and draining.

Pond Dewatering

Pond dewatering may be appropriate if the reservoir can be successfully dewatered without adversely affecting stream resources. Careful planning and coordination with CDFW, is necessary to ensure potential impacts to stream resources can be addressed, prior to commencing pond draining. Discharge of polluted water to waters of the state may require permitting from other agencies with permitting authority, such as the Regional Water Quality Control Board.

In general, bullfrog tadpoles require two years to develop into frogs, whereas native amphibians only require one year. Therefore, draining a reservoir every year is intended to interrupt bullfrog tadpole development, dramatically decrease bullfrog populations and allow for reduced efforts as a measure of adaptive management. Typically, in Northern California, reservoir draining should occur in September through October to avoid impacts to sensitive native amphibian and fishery resources. While draining occurs, direct removal efforts should be employed as described above if possible.

REPORTING

A written log shall be kept of monitoring and management efforts and shall be provided to CDFW **each year** by December 31. The written log shall include: 1) date and time of each monitoring and management effort, 2) approximate number of each bullfrog life stage detected and/or removed per effort, and 3) amount of time spent for each monitoring and management effort.

APPENDIX A. BULLFROG REFERENCE PHOTOS



This is a photo of a Bullfrog tadpole. (Photo taken by Mike van Hattem).



The photos shown in this Appendix demonstrate a medium sized adult bullfrog that was removed from Ten Mile Creek, Mendocino County. Note the bullfrog has a large tympanum, (circular ear drum shown with an arrow) and **does not** have distinct ridges along its back (dorsolateral folds). Photo taken by Wes Stokes.



The bullfrog has somewhat distinct mottling and the underside of the bullfrog's hind legs are not shaded pink or red.