COUNTY OF HUMBOLDT
PLANNING AND BUILDING DEPARTMENT

3015 H Street, Eureka CA 95501
Phone: (707)445-7541 Fax: (707) 268-3792

Hearing Date: January 6, 2022

To: Humboldt County Planning Commission

From: John H. Ford, Director of Planning and Building Department

Subject: **Salmonid Restoration Federation Marshall Ranch Streamflow Enhancement Project Special Permit**
Application Number 15661
Case Number PLN-2019-15661 SP
Assessor's Parcel Number (APN) 220-061-011
195 Somervillle Road, Briceland area

The attached staff report has been prepared for your consideration of the **Salmonid Restoration Federation Marshall Ranch Streamflow Enhancement Project** application at the public hearing on January 6, 2022.

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Please contact Joshua Dorris, Planner, at 707-268-3779 or by email at jdorris@co.humboldt.ca.us, if you have any questions about the scheduled public hearing item.

AGENDA ITEM TRANSMITTAL

Hearing Date	Subject	Contact
January 6, 2022	Special Permit	Joshua Dorris

Project Description: A Special Permit (SP) for the construction of 10-million-gallons of off-stream water storage on the Marshal Ranch designed to deliver 30 gallons per minute of flow augmentation to Redwood Creek during the 5-month dry season to improve instream aquatic habitat. Water storage is proposed in two (2) ponds (~3.6 million gallons and ~5.7 million gallons) and five (5) tanks (100,000 gallons each) designed to fill with rainwater (~3.5 million gallons) and water diverted from two Redwood Creek tributaries during the wet season (~6.5 million gallons). The proposed project also includes an instream habitat and bank stabilization structure, erosion control, cooling gallery, a solar energy generation system to support operations, upgrading access roads, fencing, and associated infrastructure. A SP is required for work within streamside managements areas.

Project Location: The project is located in Humboldt County, in the Briceland area, on both sides of Old Somerville Creek Road, approximately 1,700 feet south from the intersection of Old Briceland Road and Old Somerville Creek Road, on the property known as 195 Old Somerville Creek Road.

Present Plan Designations: Residential Agriculture: 40 acres (RA40), Residential Agriculture: 5 to 20 acres (RA5-20); 2017 General Plan

Density: 5 to 40 acres per dwelling unit

Slope Stability: Moderate instability

Present Zoning: Unclassified (U)

Case Number: PLN-2019-15661

Assessor's Parcel Number: 220-061-011

Applicant	Owner	Agent
Salmonid Restoration Federation 425 Snug Alley, Unit D Eureka, CA 95501	Wesley, Kenneth and John Marshall 5720 Old Briceland Road Garberville, CA 95542	Stillwater Sciences Attn.: Joe Monschke 850 G Street, Suite K Arcata, CA 95521

Environmental Review: Project requires environmental review. A Mitigated Negative Declaration (MND) (SCH #2019109088) for the project was circulated for a 30-day review period, from 10/22/2021-11/22/2021 pursuant to the State CEQA Guidelines.

Major Issues: Water diversion, geologic stability

State Appeal Status: Project is not appealable to the California Coastal Commission

Salmonid Restoration Federation Marshall Ranch Streamflow Enhancement Project
Record Number: PLN-2019-15661
Assessor's Parcel Number: 220-061-011

Recommended Planning Commission Action
1. Describe the application as a public hearing.
2. Open the Public Hearing.
2. Request that staff present the project.
3. Take public testimony and close the public hearing.
4. Take the following action:

Adopt the Resolution to 1) Adopt the Mitigated Negative Declaration and the Mitigation Monitoring and Reporting Program, 2) make all of the required findings for approval of the Special Permit, and approve the Salmonid Restoration Federation project subject to the recommended conditions.

Executive Summary: A Special Permit to construct 10 million-gallons of off-stream water storage on the Marshall Ranch, adjacent to Redwood Creek, a tributary to the South Fork Eel River. Water storage is proposed in two (2) ponds (~3.6 million gallons and ~5.7 million gallons) and five (5) tanks (100,000 gallons each) designed to fill with rainwater (~3.5 million gallons) and water diverted from two Redwood Creek tributaries during the wet season (~6.5 million gallons). This Project seeks to improve habitat for coho salmon (*Oncorhynchus kisutch*) and steelhead (*Oncorhynchus mykiss*) in Redwood Creek, an important salmon-bearing tributary, by addressing the limiting factor of low summer streamflows. The storage facilities have been sited and designed to fill during the winter wet season and release their stored water directly to Redwood Creek during the five-month dry season providing increased flows of approximately 30 gallons per minute along the 5.5-mile mainstem of Redwood Creek downstream to South Fork Eel River. This flow augmentation will provide significant, measurable benefits in terms of dry season flow enhancement for coho salmon, steelhead, and other aquatic species. Ancillary project components include installation of one large wood habitat enhancement and bank stabilization structure in Redwood Creek to improve instream aquatic habitat along 80 feet of the Redwood Creek stream channel; stabilization of two seasonal tributaries with approximately 10 rock-armor grade control structures, regrading, and riparian planting; construction of a passive on-demand "cooling and filtration gallery" in an existing gully to provide treatment of the flow releases, as needed, to improve water quality and reduce temperature; construction of an off-grid power system including a 1 KW solar array, battery bank, inverter, internet connection, and small control center building to support operations and monitoring capabilities; upgrading access roads within the project area including three road/stream crossing upgrades, and gravel surfacing to provide year-round access; riparian exclusion fencing for cattle; installation of plumbing infrastructure including two fire hydrants to allow for a portion of the water stored in the tanks to be utilized for domestic, ranch, and fire suppression needs. These project design features are described in detail in the Basis of Design Report and 90% Design Plans included as Attachment A of the attached MND.

This project is proposed on the Marshall Ranch ownership and integrated alongside a conservation easement encompassing the entire ranch that is managed by the California Rangeland Trust. This conservation easement guarantees that the ranch will not be subdivided and will be maintained for ranching activities and wildlife conservation.

The project is consistent with the goals and policies of the Humboldt County General Plan through its effort to assist in the sufficient recovery of threatened and endangered species to support delisting; protect fish and wildlife habitats on a sustainable basis to generate long-term public, economic and environmental benefits; assist in recovery of river and stream habitat supporting the recovery and continued viability of wild, native salmonid; and maintaining and improving watershed conditions that contribute to improved water quality and supply

Need for Project

The South Fork Eel River is one of five priority watersheds selected for flow enhancement projects in California by the State Water Resources Control Board (SWRCB) and California Department of Fish and Wildlife (CDFW) as part of the California Water Action Plan effort (SWRCB 2019). Redwood Creek is a critical tributary to the South Fork Eel River (NMFS, 2014) that historically supported coho (*Oncorhynchus kisutch*) and chinook salmon (*Oncorhynchus tshawytscha*) and steelhead (*Oncorhynchus mykiss*).

An integral component of the project is the proposed diversion of water from Redwood Creek tributaries during the wet season that will be used to fill the off-stream storage ponds and tanks. The project team has applied for an Appropriative Water Right with the State Water Board Division of Water Rights (Application A033073) for a total yearly diversion of 20 acre-feet (~6.5 million gallons) with gravity diversions from two seasonal tributaries. A Draft Water Availability Analyses (WAA) was prepared by Stillwater Sciences and submitted to the Sta Water Board Division of Water Rights for review with the Appropriative Water Rights Application. Of the total requested diversion amount, 19.25 acre-feet (6.25 million gallons) would be dedicated to flow enhancement for the benefit of fish and wildlife and 0.75 acre-feet (250,000 gallons) would be dedicated to domestic, stock watering and fire suppression uses which would allow the landowner to forbear diversion during the dry season.

Salmonid Restoration Federation has been conducting low flow monitoring in Redwood Creek during the past nine dry seasons. Flow monitoring results paint a dire picture of dry season flows with flows in Redwood Creek mainstem typically measuring between 0 and 5 gallons per minute during the driest part of the year in late summer and early fall. Over the last several years, the dry conditions have lasted into November due to the late onset of rainfall.

Project design is based on the best available science and is informed by the California Salmonid Stream Habitat Restoration Manual (Flosi et al. 2010) and Ponds – Planning, Design, Construction (USDA 1997). Additionally, the Project is informed by scientific studies and streamflow enhancement techniques that have been used in the Mattole and Russian River watersheds.

Project History

The following table provides a summary of the Project's timeline. Following the table is a discussion of the Project's history.

Date	Action
9/2019	Initial project design submitted
11/1/2019-12/17/2019	MND circulated for 30-day comment period
9/2020	Second project iteration submitted
9/9/2020	Applicant hosted project tour on Zoom
10/9/2020	Applicant hosted meeting with neighbors
10/29/2020-11/30/2020	MND recirculated for 30-day comment period
2/25/2021	Applicant hosted community outreach meeting. Three Project alternatives discussed.
8/2021	Third project iteration submitted (current Project)
10/22/2021-11/22/2021	MND recirculated for 30-day comment period

The Project design and associated Mitigated Negative Declaration (MND) have been revised twice since the initial design. The initial design was submitted in September 2019 and the MND was circulated for public comment, from November 1, 2019 to December 17, 2019. The initial Project entailed construction of a 16-million-gallon pond designed to be filled with rainwater and a diversion from Redwood Creek during the wet winter season and deliver 50-gallons per minute of the stored water directly to Redwood Creek during the five-month dry season. The project also included cooling gallery, associated pipelines and diversion pump station (requiring Appropriative Water Rights), ancillary water storage and supply for domestic use and fire suppression, erosion control structures within intermittent streams, instream habitat enhancement structures along the Redwood Creek mainstem, and a solar

energy generation system to provide revenue to cover the long-term operations and maintenance of the Project.

A second design iteration was submitted in September 2020 and the MND was circulated for public comment, from October 29, 2020 to November 30, 2020 based on comments received from California Department of Fish and Wildlife, State Water Resources Control Board Division of Water Rights, and neighboring landowners. During the 2019 comment period concerns were raised by downslope landowners that the proposed pond and associated grading and infrastructure may not meet the desired level of long-term safety, especially during the rare case of a large rainfall event coupled with a large magnitude earthquake. Based on these concerns, additional analyses were conducted including further assessment of potential pond failure mechanisms, seismic slope stability analyses under worst-case current and proposed conditions, dam breach analysis, as well as an assessment of long-term operations, maintenance and monitoring costs. Based on these analyses, numerous significant modifications were made to the 2020 Project design to ensure long term stability of the project: 1) lowering the pond berm elevation by eight feet which resulted in a grading approach with significantly more excavation into the terrace – note that this design change reduced pond capacity from 16.3 million gallons to the current volume of 15.3 million gallons, 2) relocation of the pond spillway, 3) installation of a pond liner, French drain, and subsurface restrictive barrier, 4) grade control structures in central gully and, 5) construction of a 7.5 KW solar array, micro-hydro turbine, backup battery bank, inverter, grid intertie system and control center building to offset the Project's energy use and provide backup power during outages to maintain operations and monitoring capabilities. It was anticipated that the pond would be nearly drained at the end of each dry season for bull frog management.

Salmonid Restoration Federation (Applicant) scheduled a tour of the Project site on September 9, 2020, with the focus to provide information on the proposed Project and the associated restoration benefits, followed by a question and answer period. Due to wildfires and hazardous air quality, a Zoom presentation occurred instead.

The Applicant hosted a meeting with adjoining neighbors of the Project on October 9, 2020. The discussion focused on concerns about the Project's seismic safety and stability and additional analyses were requested. As a result from this community engagement process, the Applicant offered to have a third-party review of the design plans relating to additional seismic studies and evaluations. SHN then performed a Supplemental Geotechnical Investigation of its Geotechnical Investigation conducted in 2018. This included drilling two additional boreholes not included in the 2018 analysis. The Supplemental found the Project to be feasible from a geohazard and geotechnical standpoint. The full Supplemental is included in Appendix B of the Basis of Design Report (BOD) of Attachment A of the MND.

Faculty from UC Berkeley conducted Slope Stability Analyses and Shear Wave Velocity Analyses in October 2020 with the intent to characterize subsurface conditions where boreholes from the SHN studies did not exist. The reports concluded that development of the ponds and berms are not expected to have a significant effect on the seismic stability of the slopes. The complete report is included in Appendix B of the BOD of Attachment A of the MND.

The Applicant hosted a public outreach meeting on February 25, 202 and provided a brief overview of Redwood Creek flow conditions, status report on the Project, discussed the scientific studies that informed the Project design, summary of additional Geotechnical Investigations and the Seismic Slope Stability Analyses conducted for the Project and, discussed the three project alternatives that achieve the original target flow of 50 gallons per minute (gpm). The preferred Project alternative was then presented six months later which addressed the three primary substantive community concerns raised during the CEQA public comment period for the 2020 project design:

1) the risk of catastrophic pond failure has been drastically reduced by dividing storage into two ponds by reducing the original pond volume from 15.3 million gallons to 3.8 million gallons, with the second pond at 5.7 million gallons;

2) the current design approach allows for a separate but related flow enhancement project (i.e., future Lost Coast Forestlands (LCF) project) that benefits upstream reaches of Redwood Creek with significant aquatic habitat value; and
3) the current design allows for filling of the pond and cooling of the outflow via passive gravity systems and does not rely on significant long-term energy use.

The current Project design iteration was completed in August 2021 and the MND was circulated for public comment, from October 22, 2021 to November 22, 2021. The Project proposes to construct 10-million gallons of off-stream water storage in two ponds (3.8 million gallons and 5.6 million gallons) and five tanks (100,000 gallons each) designed to fill with rainwater (~3.5 million gallons) and water diverted from two Redwood Creek tributaries during the wet season (~6.5 million gallons). The storage facilities have been sited and designed to fill during the winter wet season and release their stored water directly to Redwood Creek during the five-month dry season providing increased flows of approximately 30 gallons per minute along the 5.5-mile mainstem of Redwood Creek downstream to South Eel River. The Project also includes cooling gallery, associated infrastructure, erosion control, instream habitat enhancement structures, and a small solar energy generation system to provide backup power to the Project.

MND Recirculation
Pursuant to Section 15073.5 of the State CEQA Guidelines, recirculation of an Mitigated Negative Declaration (MND) is required when the document must be substantially revised after public notice of its availability has previously been given pursuant to Section 15072, but prior to its adoption.

The initial Project design was completed in September 2019 and the MND was circulated for public comment, from November 1, 2019 to December 2, 2019 and based on request the comment period was extended for an additional 15-days, to December 17, 2019.

A second design iteration was completed in September 2020 and the MND was circulated for public comment, from October 29, 2020 to November 30, 2020, based on comments received from CDFW, SWRCB, Division of Water Rights, and neighboring landowners.

A third design iteration was completed in August 2021 (the current Project) and the MND was circulated for a public comment period, from October 22, 2021 to November 22, 2021. The project refinements that have been made are described in Project History, above.

No new impacts were identified, nor was the severity of an identified impact increased as a result of the refined project and the additional technical information. Changes proposed to mitigation measures only increase the effectiveness of the measure. No new alternatives have been identified. The supplemental technical information received has been used to make project refinements, but only re-enforces the MND impact conclusions. No impact conclusions are recommended to change from the MND.

RECOMMENDATION: Based on a review of Planning Division reference sources and comments from all involved referral agencies, Planning staff believes that the applicant has submitted evidence in support of making all of the required findings for approval of the Special Permit.

ALTERNATIVES: The Planning Commission could elect not to approve the project, or to require the applicant to submit further evidence, or modify the project. These alternatives could be implemented if your Commission is unable to make all of the required findings. Planning Division staff has stated that the required findings in support of the proposal have been made. Consequently, Planning staff does not recommend further consideration of either alternative.

RESOLUTION OF THE PLANNING COMMISSION
OF THE COUNTY OF HUMBOLDT
Resolution Number 21-
Record Number: PLN-2019-15661
Assessor's Parcel Number: 220-061-011

Resolution by the Planning Commission of the County of Humboldt certifying compliance with the California Environmental Quality Act and conditionally approving the Salmonid Restoration Federation Special Permit, PLN-19-15661.

WHEREAS, Salmonid Restoration Federation, submitted an application and evidence in support of approving a Special Permit for the construction of 10 million-gallons of off-stream water storage and appurtenant improvements on the Marshall Ranch to improve aquatic and riparian habitat; and

WHEREAS, the County Planning Division has reviewed the submitted application and evidence and has referred the application and evidence to involved reviewing agencies for site inspections, comments and recommendations; and

WHEREAS, the project is subject to environmental review pursuant to the California Environmental Quality Act (CEQA); and

WHEREAS, the Humboldt County Planning Division, as Lead Agency under CEQA, prepared and circulated a Mitigated Negative Declaration (SCH #2019109088) for public comment from October 22, 2021 to November 22, 2021; and

WHEREAS, a public hearing was held on the matter before the Humboldt County Planning Commission on January 6, 2022.

Now, THEREFORE BE IT RESOLVED, that the Planning Commission makes all the following findings:

1. FINDING: **Project Description:** A Special Permit to allow construction of 10-million-gallons of off-stream water storage and appurtenant improvements.

EVIDENCE: a) Project File: PLN-2019-15661

2. FINDING: **CEQA.** The requirements of the California Environmental Quality Act have been complied with. The Humboldt County Planning Commission has considered the Mitigated Negative Declaration (MND) prepared for the project and all public and agency comments and finds that none of the comments change the conclusion of the Mitigated Negative Declaration. Based on the whole of the record there is no substantial evidence that the project will have a significant impact on the environment and the mitigated negative declaration reflects the county's independent judgement and analysis.

EVIDENCE: a) MND prepared for the proposed Project (SCH #2019109088) and circulated for a 30-day public comment period, from 10/22/21-11/22/21.

FINDINGS FOR SPECIAL PERMIT

3. FINDING The proposed development is in conformance with the County General Plan.

EVIDENCE

a) The proposed aquatic and riparian habitat enhancement may be considered Fish and Wildlife Management, an allowable use type in the Residential Agriculture (RA) land use designation. The proposed habitat enhancement is within land planned for agricultural purposes, consistent with the use of Open Space land for managed production of resources. The use of an agricultural parcel for fish habitat enhancement are consistent with the Open Space Plan and Open Space Action Program. Therefore, the project is consistent with and complimentary to the Open Space Plan and its Open Space Action Program.

b) The Project implements the following Goals, Policies and Standards of the Water Resources Element (Chapter 11) of the General Plan including recovery of river and stream habitat supporting the recovery and continued viability of wild, native salmonid; restored water quality and watersheds; watershed and community based efforts of local watershed groups; state and federal watershed initiatives; and, coordinate and support watershed efforts to implement programs for maintaining and improving watershed conditions that contribute to improved water quality and supply.

c) The Project implements the following Goals, Policies and Standards of the Biological Resources Chapter (Chapter 10) of the Conservation and Open Space Element of the General Plan including sufficient recovery of threatened and endangered species to support delisting; protect fish and wildlife habitats on a sustainable basis to generate long-term public, economic and environmental benefits; coordinate with appropriate agencies to support critical habitat enhancement; and, development of restoration projects within the streamside management areas and stream channels.

4. FINDING The proposed development is located on a parcel zoned Unclassified. The proposed development is consistent with the purposes of the existing U zone in which the site is located.

EVIDENCE

a) The U zone is intended to be applied to areas of the County that have not been sufficiently studied to justify precise zoning classifications, and have been adopted to protect the health, safety and general welfare of the citizens and to ensure orderly development in conformance with the General Plan.

b) Habitat enhancement and restoration use types implement Elements of the General Plan and are permitted in the U zone.

5. FINDING The proposed development conforms with all applicable standards and requirements of these regulations.

EVIDENCE

a) Habitat enhancement and restoration are permitted in all zoning designations.

6. FINDING The proposed development and conditions under which it may be operated or maintained will not be detrimental to the public health, safety, or welfare; or materially injurious to property or improvements in the vicinity.

EVIDENCE a) The proposed project is habitat enhancement and restoration.

Slope stability analysis, shear wave velocity analysis were completed

b) Geotechnical Investigation and Supplemental Geotechnical Investigation were performed by SHN with the purpose to evaluate the geotechnical conditions relative to the proposed water storage basins and associated infrastructure. The Investigations concluded that the risk of impact associated with existing landslide hazard is negligible, due to the large setback of infrastructure from vulnerable slopes and the low permeability of the subsurface materials at the site.

c) Shear Wave Velocity Analyses were conducted to further characterize subsurface conditions in areas where boreholes from the SNH Geotechnical Investigation did not exist. Field testing consisted of the measurement of surface wave velocities at four locations at the Project site. Data collection was focused adjacent to and just downslope from the proposed pond berm as well as one data collection point in the vicinity of the proposed deflector berm on the lower terrace.

d) Slope Stability Analyses were performed to assess the landslide hazard at the project site. Results were generally consistent with Stillwater Sciences' and SHN's previous findings. The analyses considered two earthquake scenarios including a ~9.0 magnitude subduction zone earthquake and a ~7.0 magnitude earthquake along the San Andreas Fault. The Analyses determined that the proposed pond and berm sites would experience displacements of less than one inch during this earthquake scenario, but more significant displacements of up to several feet are possible along the steeper slope downgradient from the proposed ponds. The pond and berm developments are not expected to have a significant effect on the seismic stability of the slopes.

7. FINDING The proposed development does not reduce the residential density for any parcel below that utilized by the Department of Housing and Community Development in determining compliance with housing element law.

EVIDENCE a) The parcel was not included in the housing inventory of Humboldt County's 2019 Housing Element but does have the potential to support an additional housing unit. The approval of the project on this parcel will not conflict with the ability for a second residence to be constructed on this parcel.

DECISION

NOW, THEREFORE, based on the above findings and evidence, the Humboldt County Planning Commission does hereby:

- Adopt the Mitigated negative Declaration and the Mitigation Monitoring and Reporting Program; and
- Makes all of the required findings for approval pursuant to Section 312-17.1 of the Humboldt County Code; and
- Approves the Salmonid Restoration Special Permit subject to the recommended conditions of approval.

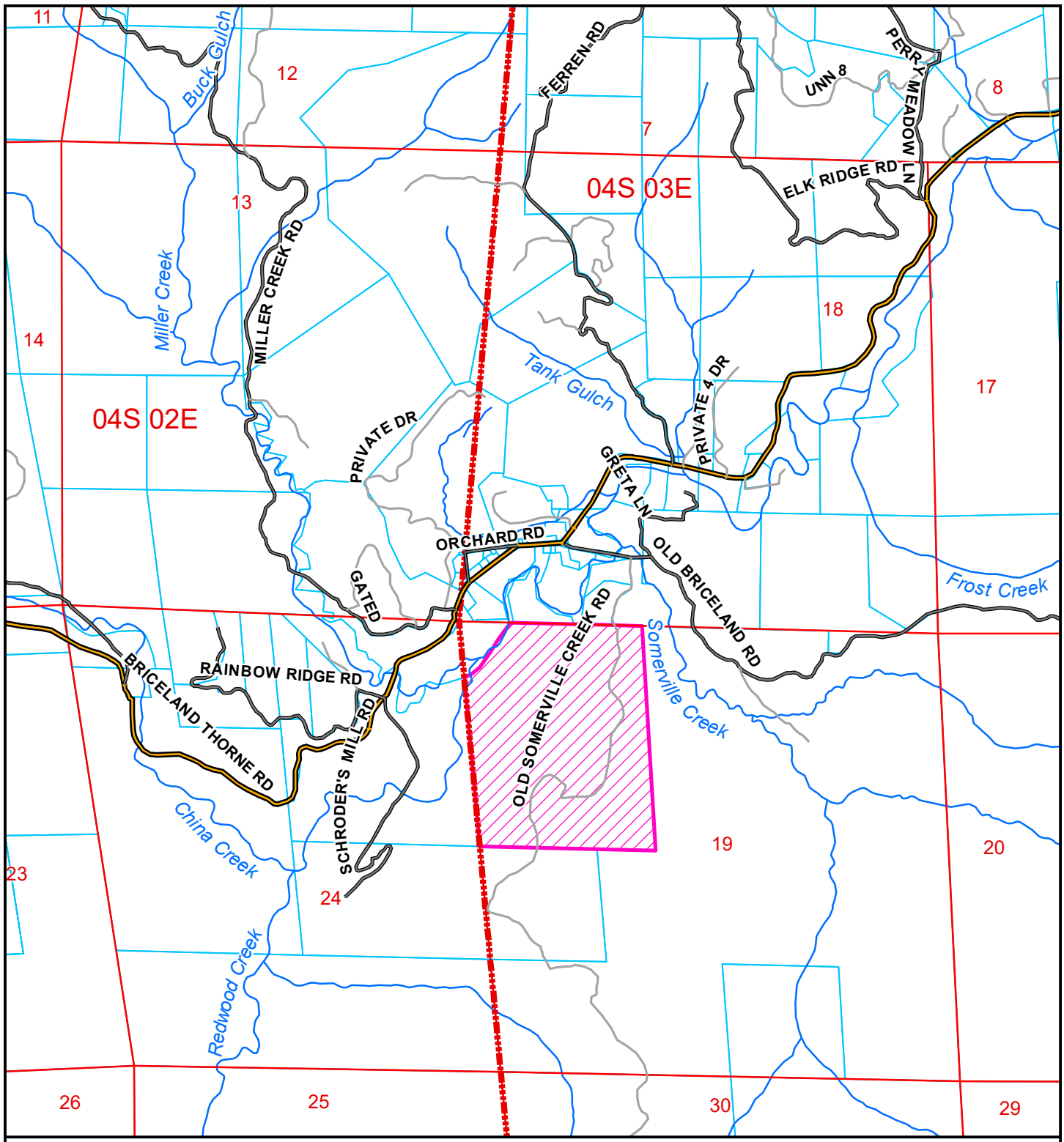
Adopted after review and consideration of all the evidence on January 6, 2022

The motion was made by COMMISSIONER _____and second by COMMISSIONER _____ and the following ROLL CALL vote:

AYES: COMMISSIONERS:
NOES: COMMISSIONERS:
ABSENT: COMMISSIONERS:
ABSTAIN: COMMISSIONERS:
DECISION:

I, John Ford, Secretary to the Planning Commission of the County of Humboldt, do hereby certify the foregoing to be a true and correct record of the action taken on the above entitled matter by said Commission at a meeting held on the date noted above.

_____
John Ford, Director
Planning and Building Department



LOCATION MAP

PROPOSED SALMONID RESTORATION FEDERATION SPECIAL PERMIT BRICELAND AREA PLN-2019-15661 APN: 220-061-011 T04S R03E S19 HB&M (Briceland)

Project Area =

N

0 1,000 2,000 Feet

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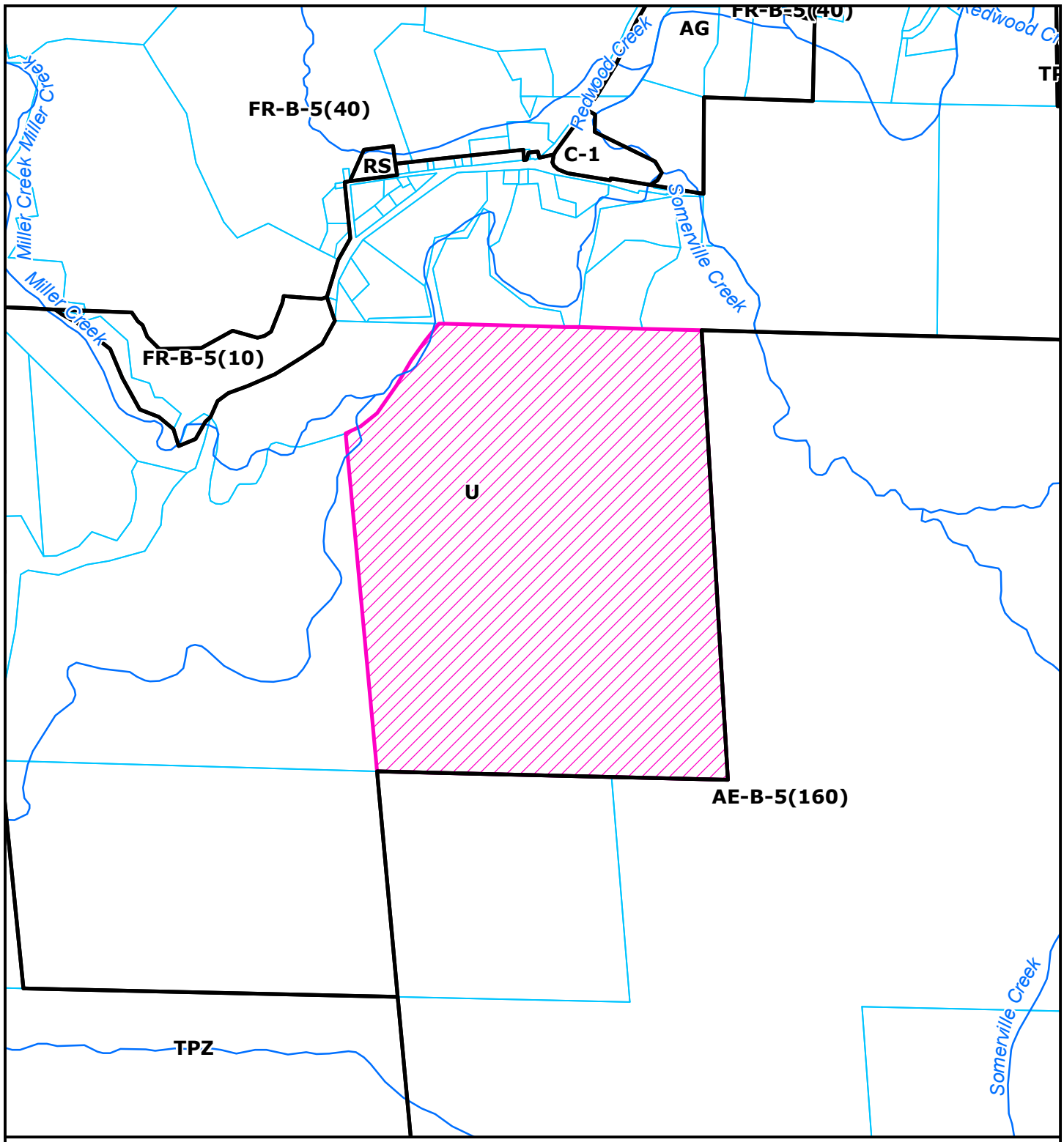


ZONING MAP

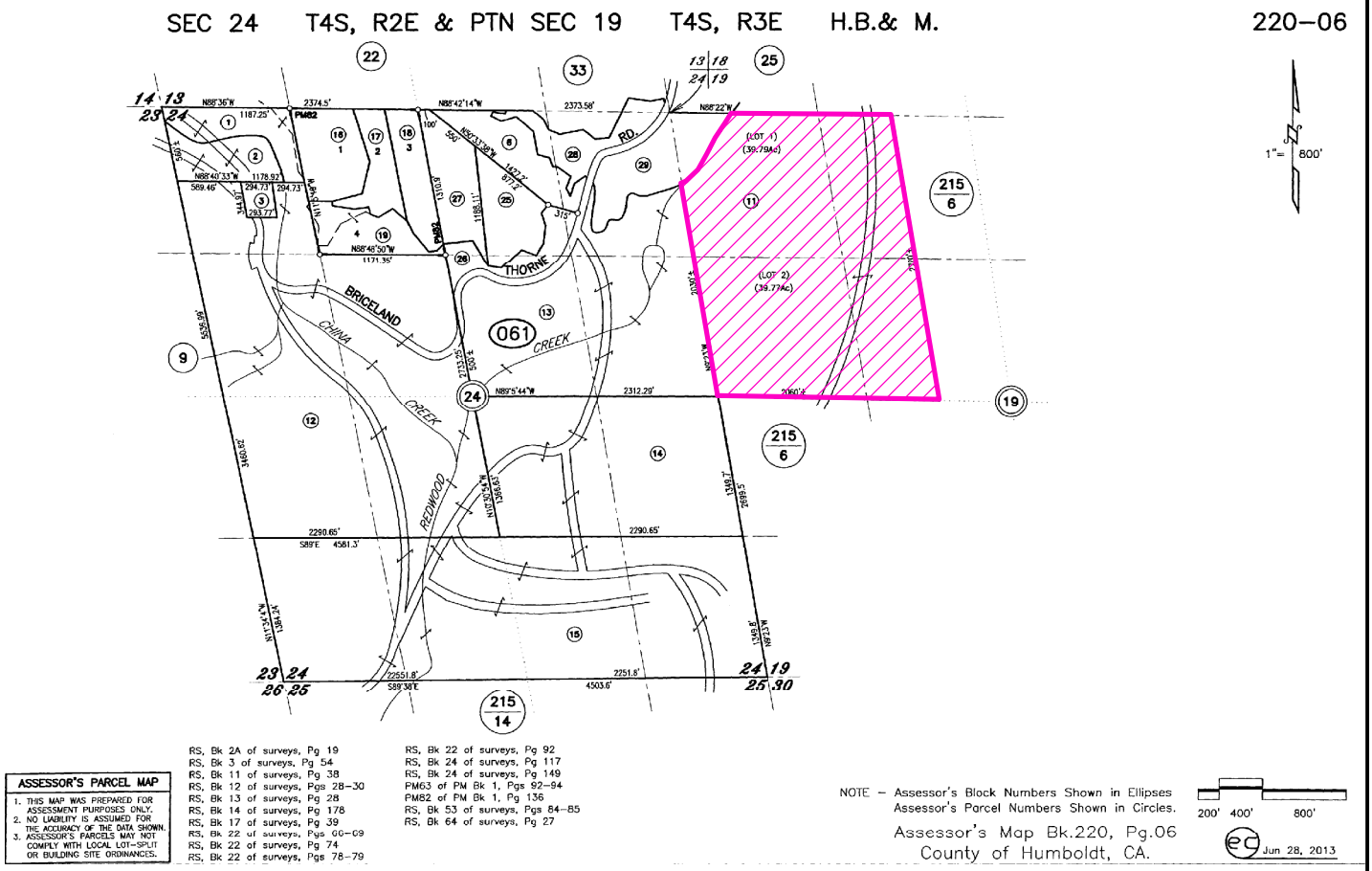
PROPOSED SALMONID RESTORATION FEDERATION
SPECIAL PERMIT
BRICELAND AREA
PLN-2019-15661
APN: 220-061-011
T04S R03E S19 HB&M (Briceland)

Project Area =

N

0 250 500 750 1,000 Feet

This map is intended for display purposes and should not be used for precise measurement or navigation. Data has not been completely checked for accuracy.



ASSESSOR PARCEL MAP

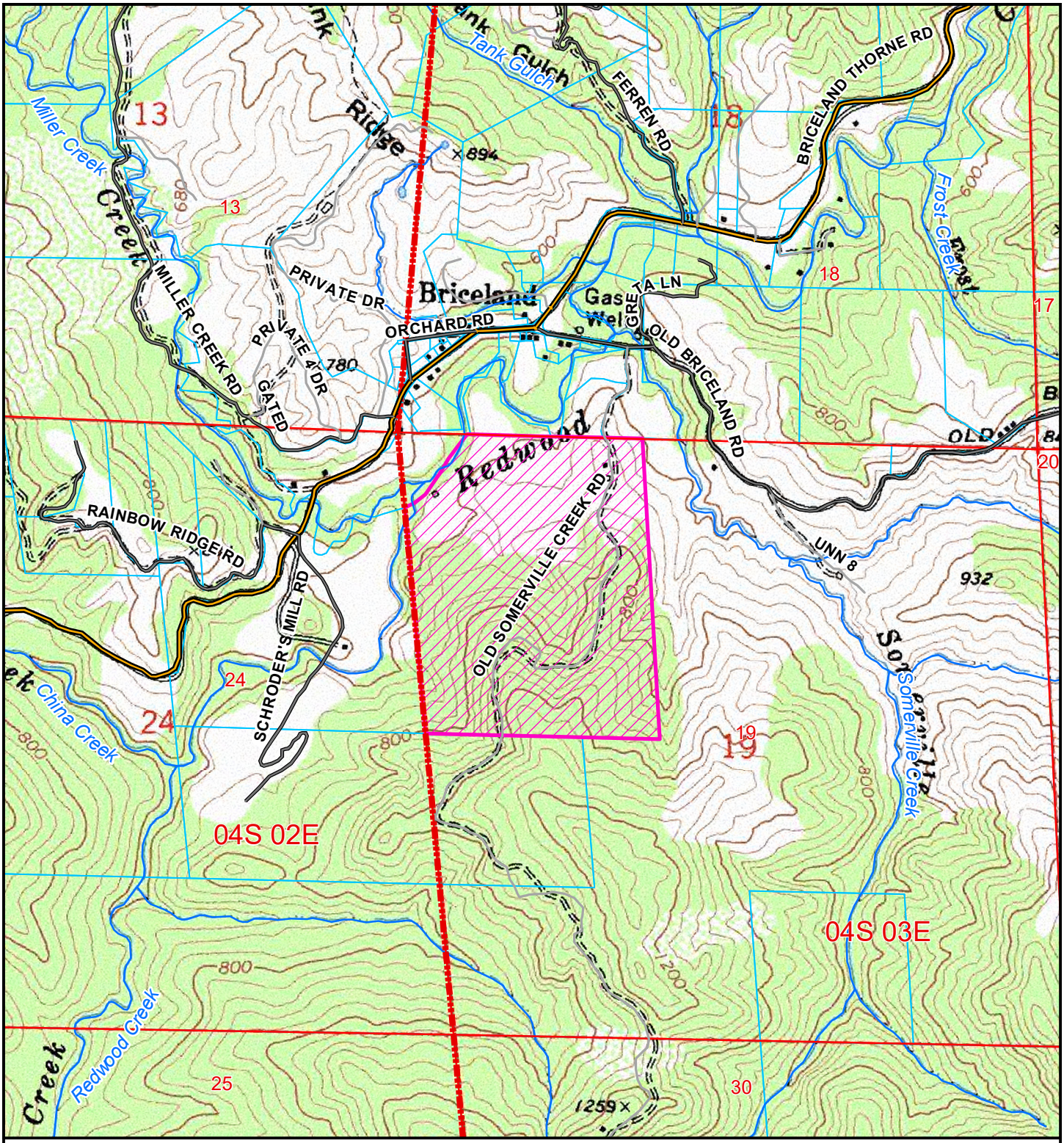
PROPOSED SALMONID RESTORATION FEDERATION SPECIAL PERMIT BRICELAND AREA PLN-2019-15661 APN: 220-061-011 T04S R03E S19 HB&M (Briceland)

Project Area =

N

MAP NOT TO SCALE

This map is intended for display purposes and should not be used for precise measurement or navigation. Data has not been completely checked for accuracy.



TOPO MAP

PROPOSED SALMONID RESTORATION FEDERATION
SPECIAL PERMIT
BRICELAND AREA
PLN-2019-15661
APN: 220-061-011
T04S R03E S19 HB&M (Briceland)

Project Area =

N

0 500 1,000 1,500 Feet

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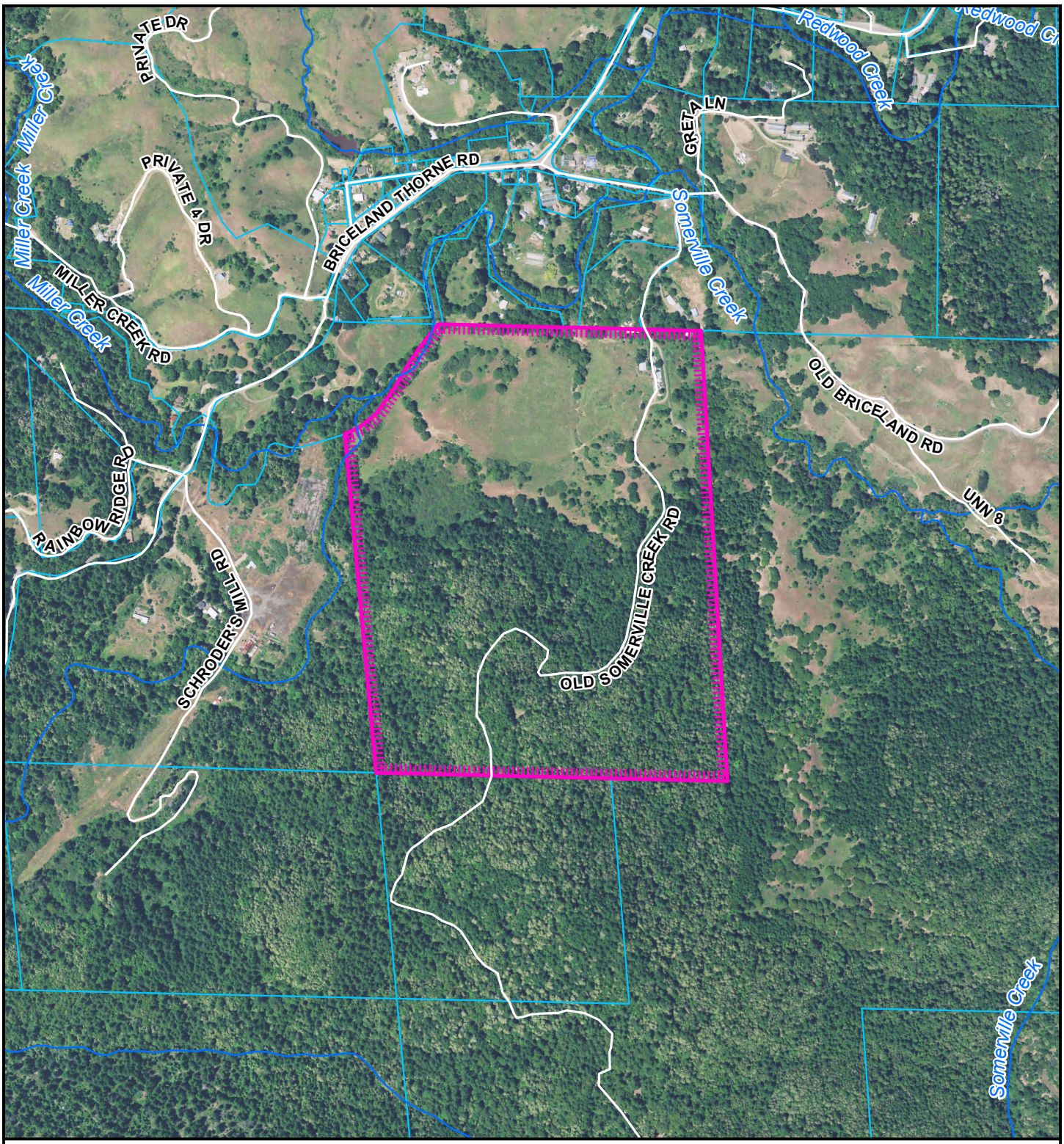

AERIAL MAP

PROPOSED SALMONID RESTORATION FEDERATION
SPECIAL PERMIT
BRICELAND AREA
PLN-2019-15661
APN: 220-061-011
T04S R03E S19 HB&M (Briceland)

Project Area =

N

0 250 500 750 1,000 Feet

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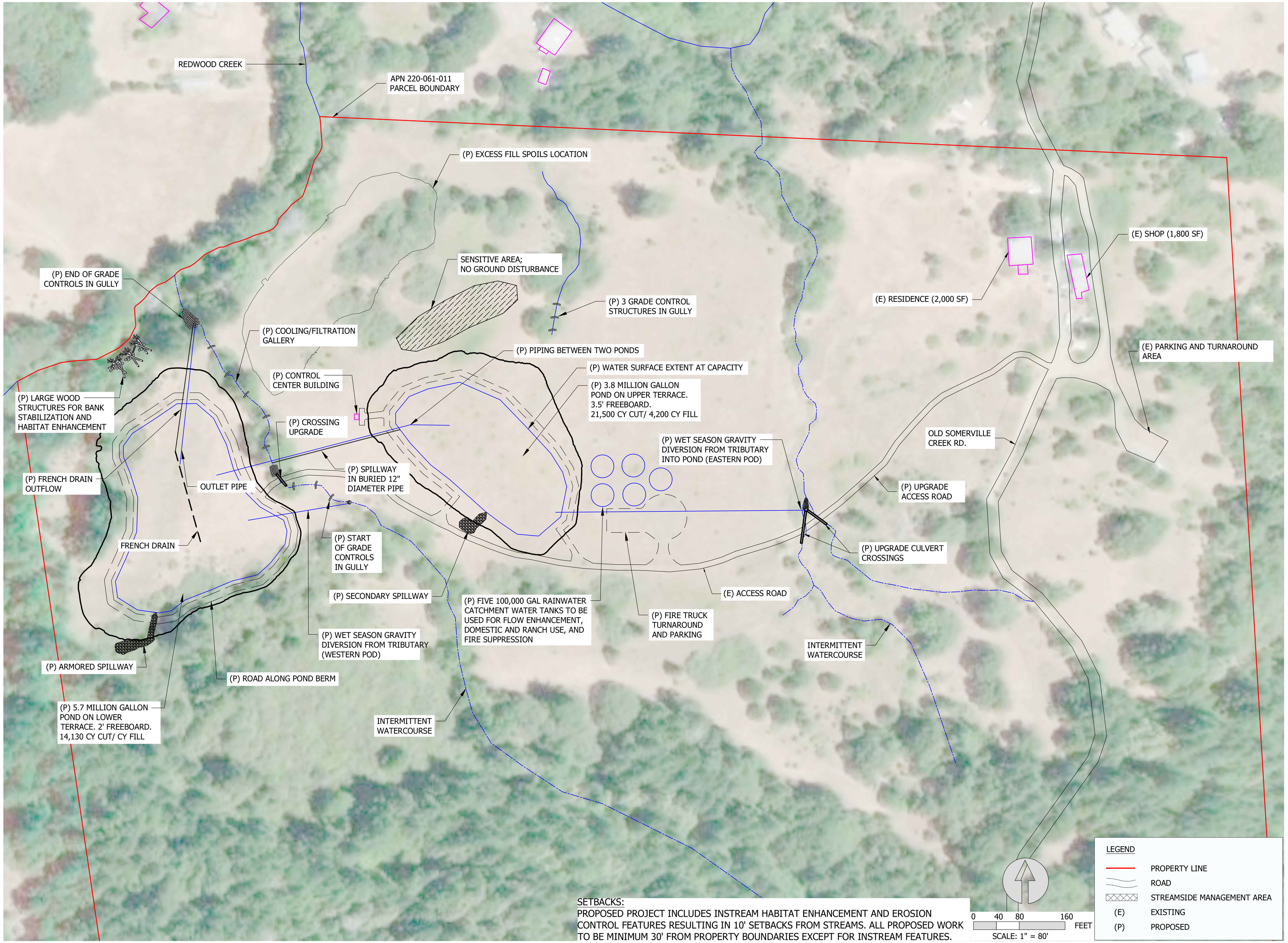

SETBACKS:
PROPOSED PROJECT INCLUDES INSTREAM HABITAT ENHANCEMENT AND EROSION CONTROL FEATURES RESULTING IN 10' SETBACKS FROM STREAMS. ALL PROPOSED WORK TO BE MINIMUM 30' FROM PROPERTY BOUNDARIES EXCEPT FOR INSTREAM FEATURES.

MARSHALL RANCH FLOW ENHANCEMENT PROJECT

BRICELAND, CA

Stillwater Sciences
850 G STREET SUITE K
ARCATA, CA 95521
P: (707) 822-9607

REGISTERED PROFESSIONAL ENGINEER
JOEL MONSCHKE
C 79688
EXP. 9/22
CIVIL
STATE OF CALIFORNIA

PROJECT NUMBER: 603.04
SCALE: AS NOTED
DATE: 7/30/2021

DESIGN: JM
DRAWN: CL,TC
CHECKED: JM
APPROVED: JM

REGISTERED PROFESSIONAL ENGINEER
JOEL MONSCHKE
No. 79688
9-30-22
EXPIRES
CIVIL
STATE OF CALIFORNIA

SITE PLAN

SHEET 3 OF 19

LAST SAVED: 8/13/2021 PLOT DATE: January 6, 2022
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P:\N-2019-15661 Salmonid Restoration

ATTACHMENT 1A

Recommended Conditions of Approval

Approval of this Special Permit Is conditioned upon the following terms and requirements stated in each condition.

A. General Conditions

1. The project shall be constructed in accordance with the project description and approved project site plan.

2. The applicant is responsible for obtaining all necessary County and State permits and licenses and for meeting all requirements set forth by other regulatory agencies.

3. The applicant is required to pay for permit processing on a time and material basis as set forth in the schedule of fees and charges as adopted by ordinance of the Humboldt County Board of Supervisors. The Planning and Building Department will provide a bill to the applicant after the decision. Any and all outstanding planning fees to cover the processing of the application to decision by the Hearing Officer shall be paid to the Humboldt County Planning Division, 3015 "H" Street, Eureka.

4. A Notice of Determination (NOD) will be prepared and filed with the County Clerk for this project in accordance with the State CEQA Guidelines. **Within three days of the effective date of permit approval**, the applicant shall submit a check or money order made payable to the Humboldt County Recorder for the CDFW CEQA filing fee and the County Recorder filing fee. This amount is currently $2,590.25. After January 1, 2022 this amount will be $2,598.00.

5. The applicant shall submit a grading, erosion and sediment control plan shall be prepared by a qualified engineer. The plan shall identify the cubic yards of all proposed grading. A letter or similar communication from the Building Division verifying that all grading related to the cannabis cultivation operation are permitted, or not needed, will satisfy this condition.

Ongoing Conditions of Approval and Requirements/Development Restrictions which must be satisfied for the life of the Project:

6. If cultural resources are encountered during construction activities, the contractor on-site shall cease all work in the immediate area and within a 50-foot buffer of the discovery location. A qualified archaeologist and the appropriate Tribal Historic Preservation Officer(s) are to be contacted to evaluate the discovery and, in consultation with the applicant and the lead agency, develop a treatment plan in any instance where significant impacts cannot be avoided.

   Prehistoric materials may include obsidian or chert flakes, tools, locally darkened midden soils, groundstone artifacts, shellfish or faunal remains, and human burials. If human remains are found, California Health and Safety Code 7050.5 requires that the County Coroner be contacted immediately at 707-445-7242. If the Coroner determines the remains to be Native American, the Native American Heritage Commission will then be contacted by the Coroner to determine appropriate treatment of the remains pursuant to Public Resources Code (PRC) Section 5097.98. Violators shall be prosecuted in accordance with PRC Section 5097.99.

7. Compliance with all statutes, regulations, and requirements of the California State Water Resources Control Board and the Division of Water Rights, at a minimum to include a statement of diversion of surface water from a stream, river, underground stream, or other watercourse required by Water Code Section 5101, or other applicable permit, license, or registration, as applicable.

8. Comply with the terms of any applicable Lake and Stream Alteration (1600 or 1602) Permit obtained from the California Department of Fish and Wildlife (CDFW).

Informational Notes:

1. This permit shall expire and become null and void at the expiration of two (2) years after all appeal periods have lapsed (see "Effective Date"); except where construction under a valid building permit or use in reliance on the permit has commenced prior to such anniversary date. The periods within which construction or use must be commenced may be extended as provided by Section 312-10.5 of the Humboldt County Code.

ATTACHMENT 1 B
MITIGATION MEASURES, MONITORING AND REPORTING PROGRAM

I. AESTHETICS
No specific mitigation measures are required to protect aesthetics.

II. AGRICULTURE AND FORESTRY RESOURCES
No specific mitigation measures are required to protect agricultural or forestry resources.

III. AIR QUALITY
No specific mitigation measures are required to protect air quality.

IV. BIOLOGICAL RESOURCES

BIO-1: Turbid Water

The use of cofferdams will contain any turbid water produced during the Project within the work area, thereby avoiding impacts on downstream salmonids. Any turbid water within the confined work areas would be pumped to a receiving site outside the channel or to tanks. Any turbid water within the work area would be allowed to settle prior to removal of the cofferdams, thereby minimizing downstream effects on salmonids.

BIO-2: Discharge of Sediment

Discharge of sediment will be controlled and minimized with the implementation of best management practices (BMPs) on all disturbed soils that have the potential to discharge into area watercourses. Applicable BMPs include, but are not limited to, installation of silt fences, straw wattles, and placement of seed-free rice straw. BMPs will be installed at all access points to the work sites, which will minimize the potential for sediment delivery and deleterious effects on salmonids.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
Prior to and during project operations.	Continuous for the period of construction		HCP&BD*** and CDFW**		

BIO-3: Gully Stabilization

All gully stabilization work will be conducted when the individual sites are dry (i.e., no surface water).

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
Prior to and during project operations.	Continuous for the period of construction		HCP&BD***		

BIO-4: Instream Work Window

A June 15 – November 1 instream work window will be established to allow time for young-of-the-year salmonids to be very mobile and capable of avoiding injury. The work window will also allow downstream migration of smolts to be completed prior to any Project related channel disturbance taking place. In addition, the work window coincides with the summer low-flow season during which flow in the creek will be at its summer base flow. Finally, the November 1 date will ensure all work is done prior to the rainy season and arrival of any upstream migrating adult salmonids.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
Prior to project operations.	Once		HCP&BD*** and CDFW**		

BIO-5: Aquatic Species Survey

Prior to the initiation of any instream work in areas with surface water, a qualified biologist will survey the site to determine fish presence. The biologist will implement an aquatic species removal and relocation plan to move any fish or amphibians that may be in work sites to suitable habitat downstream. Block nets will be installed to prevent fish from reentering the work area. Any fish remaining in the work area will be captured by hand, dip net, or as a last resort, using a backpack electrofisher. Cofferdams will be constructed in the channel at sites where streamflow is present. Water will then be diverted around the work area.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
Prior to project operations.	Once		HCP&BD*** and CDFW**		

BIO-6: Fish Screening

The Project will follow the Fish Screening Criteria for Salmonids (NMFS 1997), NOAA Restoration Center/Army Corps of Engineers programmatic biological opinion requirements.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
Prior to and during project operations.	Continuous for the period of construction		HCP&BD*** and CDFW**		

BIO-7: Foothill Yellow-legged Frog Egg Mass Survey

A foothill yellow-legged frog egg mass survey will be conducted in May prior to the construction season to determine if breeding occurs within the Project reaches.

BIO-8: Foothill Yellow-legged Frog Survey

A visual observation survey of the project areas will be conducted within two weeks prior to the start of construction to determine if adult and juvenile foothill yellow-legged frogs are present in the Project area.

BIO-9: Foothill Yellow-legged Frog Removal

If foothill yellow-legged frogs are present, then a qualified CDFW-approved biologist will be present immediately prior to the start of construction to remove any frogs and relocate them in suitable habitat.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
Prior to project operations.	Once		HCP&BD*** and CDFW**		

BIO-10: Amphibian Survey

The Project manager or qualified designee will conduct daily morning inspections of the area slated for work to determine if amphibians entered the areas overnight. Any individuals will be captured and relocated prior to the start of the day's work.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
Prior to and during project operations.	Continuous for the period of construction		HCP&BD*** and CDFW**		

BIO-11: Maintain Habitat Supporting Red-bellied Newt

Sufficient terrestrial woody debris will be left in place to maintain the habitat supporting viable population of red-bellied newt during operations within the riparian areas.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
Prior to and during project operations.	Continuous for the period of construction		HCP&BD*** and CDFW**		

BIO-12: Red-bellied Newt Survey

Prior to the initiation of any instream work in areas with surface water, a qualified biologist will survey the site to determine larval newt presence. If red-bellied newts are present, then a qualified CDFW-approved biologist will be present immediately prior to the start of operations to remove any individuals and relocate them in suitable habitat.

BIO-13: Nesting Bird Survey

A pre-construction nesting bird survey will be conducted during the breeding season and within two weeks of the start of construction pursuant to CDFW Survey and Monitoring Protocols. Appropriate buffers will be established around all active nests within the Project area.

BIO-14: Western Pond Turtle Survey

Prior to the initiation of any instream work in areas with surface water, a qualified biologist will survey the site to determine turtle presence. The biologist will capture and relocate any turtle that may be in work sites to suitable habitat downstream. Block nets will be installed to prevent turtles from reentering the work area.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
Prior to project operations.	Once		HCP&BD*** and CDFW**		

BIO-15: Replacement of Riparian Vegetation

Planting of seedlings shall begin after December 1, or when sufficient rainfall has occurred to ensure the best chance of survival of the seedlings, but in no case after April 1.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
Prior to the building permit final inspection.	Once		HCP&BD*** and CDFW**		

BIO-16: Disturbed Watercourse Banks

Any disturbed banks shall be fully restored upon completion of construction. Revegetation shall be done using native species. Planting techniques can include seed casting, hydroseeding, or live planting methods using the techniques in Part XI of the California Salmonid Stream Habitat Restoration Manual.

BIO-17: Disturbed Areas

Disturbed and compacted areas shall be re-vegetated with native plant species. The species shall be comprised of a diverse community structure that mimics the native riparian corridor. Planting ratio shall be 2:1 (two plants to every one removed). Unless otherwise specified, the standard for success is 80 percent survival of plantings or 80 percent ground cover for broadcast planting of seed after a period of 3 years.

BIO-18: Invasive Exotic Species

To ensure that the spread or introduction of invasive exotic plants shall be avoided to the maximum extent possible, equipment shall be cleaned of all dirt, mud, and plant material prior to entering a work site. When possible, invasive exotic plants at the work site shall be removed. Areas disturbed by project activities will be restored and planted with native plants.

BIO-19: Sediment Delivery

Mulching and seeding shall be done on all exposed soil which may deliver sediment to a stream. Soils exposed by project operations shall be mulched to prevent sediment runoff and transport. Mulches shall be applied so that not less than 90% of the disturbed areas are covered. All mulches, except hydro-mulch, shall be applied in a layer not less than two (2) inches deep. Where feasible, all mulches shall be kneaded or tracked-in with track marks parallel to the contour, and tackified as necessary to prevent excessive movement. All exposed soils and fills, including the downstream face of the road prism adjacent to the outlet of culverts, shall be reseeded with a mix of native grasses common to the area, free from seeds of noxious or invasive weed species, and applied at a rate which will ensure establishment.

BIO-20: Erosion Control

If erosion control mats are used in re-vegetation, they shall be made of material that decomposes. Erosion control mats made of nylon plastic, or other non-decomposing material shall not be used.

BIO-21: Chainsaw Use

If riparian vegetation is to be removed with chainsaws, the Permittee shall use saws that operate with vegetable-based bar oil.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
During project construction and prior to the building permit final inspection.	Continuous for the period of construction		HCP&BD*** and CDFW**		

V. CULTURAL RESOURCES

CR-1: Protect Cultural Resources

a) The archaeological site boundary as identified in the Cultural Resources Investigation, shall be clearly marker during project implementation. Boundary markers such as flagging, stakes, fencing, or other highly visible barrier should be used.

b) The area containing the archaeological site shall be completely excluded from ground disturbing activities. The proposed path of the pond intake pipeline and primary spillway have been rerouted to avoid ground disturbance to the identified sensitive area.

c) Spoils from pond excavation may be placed directly on the existing archaeological site surface, however, no grading or scarifying shall be conducted. Heavy equipment shall not enter the archaeological site unless atop a sufficient layer of fill, such that the underlying soil is

not displaced.

d) All ground-disturbing activities and placement of fill material within the known archaeological site shall be monitored by a professional archaeologist familiar with specific project conditions. A monitoring plan should be developed and used to guide monitoring and discovery protocol.

e) In the event additional archaeological material is encountered during project implementation or during future site monitoring efforts, all work shall stop in the area of the find and the discovery protocol initiated as described below in MM CR-3.

CR-2: Site-specific Conditions

The Permittee shall ensure that the implementation contractor or responsible party is aware of these site-specific conditions, and shall inspect the work site before, during, and after completion of the action item.

CR-3: Inadvertent Discovery of Cultural Resources

If cultural resources are encountered during construction activities, all onsite work shall cease in the immediate area and within a 50-foot buffer of the discovery location. A qualified archaeologist will be retained to evaluate and assess the significance of the discovery, and develop and implement an avoidance or mitigation plan, as appropriate. For discoveries known or likely to be associated with Native American heritage (prehistoric sites and select historic period sites), the tribes listed in Section 6.2 and those that the County has on file shall also be contacted immediately to evaluate the discovery and, in consultation with the project proponent, the County, and consulting archaeologist, develop a treatment plan in any instance where significant impacts cannot be avoided. Prehistoric materials which could be encountered include obsidian and chert debitage or formal tools, grinding implements, (e.g., pestles, handstones, bowl mortars, slabs), locally darkened midden, deposits of shell, faunal remains, and human burials. Historic archaeological discoveries may include nineteenth century building foundations, structural remains, or concentrations of artifacts made of glass, ceramics, metal or other materials found in buried pits, wells or privies.

CR-4: Inadvertent Discovery of Human Remains

If human remains are discovered during project construction, work shall stop at the discovery location, within 20 meters (66 feet), and any nearby area reasonably suspected to overlie adjacent human remains (Public Resources Code, Section 7050.5). The county coroner shall be contacted to determine if the cause of death must be investigated. If the coroner determines that the remains are of Native American origin, it is necessary to comply with state laws relating to the disposition of Native American burials, which fall within the jurisdiction of the Native American heritage Commission (NAHC) (Public Resources Code, Section 5097). The coroner will contact the NAHC. The descendants or most likely descendants of the deceased will be contacted, and work shall not resume until they have made a recommendation to the landowner or the person responsible for the excavation work for means of treatment and disposition, with appropriate dignity, of the human remains and any associated grave goods, as provided in Public Resources Code, Section 5097.98.

CR-5: Procedures for treatment of an inadvertent discovery of human remains

a) Immediately following discovery of known or potential human remains all ground-disturbing activities at the point of discovery shall be halted.

b) No material remains shall be removed from the discovery site, a reasonable exclusion zone shall be cordoned off.

c) The property owner shall be notified and the Permittee Project Manager shall contact the county coroner.

d) The Permittee shall retain the services of a professional archaeologist to immediately examine the find and assist the process.

e) All ground-disturbing construction activities in the discovery site exclusion area shall be suspended.

f) The discovery site shall be secured to protect the remains from desecration or disturbance, with 24-hour surveillance, if prudent.

g) Discovery of Native American remains is a very sensitive issue, and all project personnel shall hold any information about such a discovery in confidence and divulge it only on a need-to-know basis, as determined by the CDFW.

h) The coroner has two working days to examine the remains after being notified. If the remains are Native American, the coroner has 24 hours to notify the NAHC in Sacramento (telephone 916/653-4082).

i) The NAHC is responsible for identifying and immediately notifying the Most Likely Descendant (MLD) of the deceased Native American.

j) The MLD may, with the permission of the landowner, or their representative, inspect the site of the discovered Native American remains and may recommend to the landowner and Permittee means for treating or disposing, with appropriate dignity, the human remains and any associated grave goods. The descendants shall complete their inspection and make recommendations or preferences for treatment with 48 hours of being granted access to the site (Public Resource Code, Section 5097.98(a)). The recommendation may include the scientific removal and non-destructive or destructive analysis of human remains and items associated with Native American burials.

k) Whenever the NAHC is unable to identify a MLD, or the MLD identified fails to make a recommendation, or the landowner or his/her authorized representative rejects the recommendation of the MLD and mediation between the parties by the NAHC fails to provide measures acceptable to the landowner, the landowner or his/her authorized representatives shall re-inter the human remains and associated grave offerings with appropriate dignity on the property in a location not subject to further subsurface disturbance in accordance with Public Resource Code, Section 5097.98(e).

l) Following final treatment measures, the Permittee shall ensure that a report is prepared that describes the circumstances, nature and location of the discovery, its treatment, including results of analysis (if permitted), and final disposition, including a confidential map showing the reburial location. Appended to the report shall be a formal record about the discovery site prepared to current California standards on DPR 523 form(s). Permittee shall ensure that report copies are distributed to the appropriate California Historic Information Center, NAHC, and MLD.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
Prior to and during project operations.	Continuous		HCP&BD***		

VI. ENERGY

No specific mitigation measures are required to protect energy.

VII. GEOLOGY AND SOILS

GEO-1: Erosion

Work sites shall be winterized at the end of each day to minimize the eroding of unfinished excavations when significant rains are forecasted. Winterization procedures shall be supervised by a professional trained in erosion control techniques and involve taking necessary measures to minimize erosion on unfinished work surfaces. Winterization includes the following: smoothing unfinished surfaces to allow water to freely drain across them without concentration or ponding; compacting unfinished surfaces where concentrated runoff may flow with an excavator bucket or similar tool, to minimize surface erosion and the formation of rills; and installation of culverts, silt fences, and other erosion control devices where necessary to convey concentrated water across unfinished surfaces, and trap exposed sediment before it leaves the work site.

GEO-2: Erosion Control Measures

Effective erosion control measures shall be in-place at all times during construction. Construction shall not begin until all temporary erosion controls (i.e., straw bales or silt fences that are effectively keyed-in) are in place down slope or down stream of project activities within the riparian area. Erosion control measures shall be maintained throughout the construction period. If continued erosion is likely to occur after construction is completed, then appropriate erosion prevention measures shall be implemented and maintained until erosion has subsided.

GEO-3: Erosion Control Materials

An adequate supply of erosion control materials (gravel, straw bales, shovels, etc.) shall be maintained onsite to facilitate a quick response to unanticipated storm events or emergencies.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
Prior to and during project operations.	Continuous		HCP&BD*** and CDFW**		

GEO-4: Exposed Soil

Upon project completion, all exposed soil present in and around the project site shall be stabilized within 7 days. Soils exposed by project operations shall be mulched to prevent sediment runoff and transport. Mulches shall be applied so that not less than 90% of the disturbed areas are covered. All mulches, except hydro-mulch, shall be applied in a layer not less than two (2) inches deep. Where feasible, all mulches shall be kneaded or tracked-in with track marks parallel to the contour, and tackified as necessary to prevent excessive movement. All exposed soils and fills, including the downstream face of the road prism adjacent to the outlet of culverts, shall be reseeded with a mix of native grasses common to the area, free from seeds of noxious or invasive weed species, and applied at a rate which will ensure establishment.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
Prior to the building permit final inspection.	Once		HCP&BD***		

VIII. GREENHOUSE GAS EMISSIONS

No specific mitigation measures are required for greenhouse gas emissions.

IX. HAZARDS AND HAZARDOUS MATERIALS

HAZ-1: Heavy Equipment

Heavy equipment that will be used in these activities will be maintained according to a maintenance and repair schedule and will be inspected for leakage of coolant and petroleum products and repaired, if necessary, before work is started.

HAZ-2: Equipment Operation in Wetted Areas

When operating vehicles in wetted portions of the stream channel, or where wetland vegetation, riparian vegetation, or aquatic organisms may be destroyed, the responsible party shall, at a minimum, do the following:

a) All equipment shall be cleaned to remove external oil, grease, dirt, or mud. Wash sites shall be located in upland locations so that dirty wash water does not flow into the stream channel or adjacent wetlands;

b) Check and maintain on a daily basis any vehicles to prevent leaks of materials that, if introduced to water, could be deleterious to aquatic life, wildlife, or riparian habitat;

c) Take precautions to minimize the number of passes through the stream and to avoid increasing the turbidity of the water to a level that is deleterious to aquatic life; and

d) Allow the work area to rest to allow the water to clear after each individual pass of the vehicle that causes a plume of turbidity above background levels, resuming work only after the stream has reached the original background turbidity levels.

HAZ-3: Equipment Operators

All equipment operators shall be trained in the procedures to be taken should an accident occur. Prior to the onset of work, the Permittee shall prepare a Spill Prevention/Response plan to help avoid spills and allow a prompt and effective response should an accidental spill occur. All workers shall be informed of the importance of preventing spills. Operators shall have spill clean-up supplies on site and be knowledgeable in their proper deployment.

HAZ-4: Activities in or near Streams

All activities performed in or near a stream will have absorbent materials designed for spill containment and cleanup at the activity site for use in case of an accidental spill. In an event of a spill, work shall cease immediately. Clean-up of all spills shall begin immediately. The responsible party shall notify the State Office of Emergency Services at 1-800-852-7550 and the CDFW immediately after any spill occurs and shall consult with the CDFW regarding clean-up procedures.

HAZ-5: Fueling and Maintenance of Vehicles

All fueling and maintenance of vehicles and other equipment and staging areas shall occur outside of Streamside Management Areas and place fuel absorbent mats under pump while fueling. The USACE and the CDFW will ensure contamination of habitat does not occur during such operations. Prior to the onset of work, the Permittee shall prepare a plan to allow a prompt and effective response to any accidental spills. All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

HAZ-6: Location of Staging/Storage Areas for Equipment

Location of staging/storage areas for equipment, materials, fuels, lubricants, and solvents, will be located outside of the streams high water channel and associated riparian area. The number of access routes, number and size of staging areas, and the total area of the work site activity shall be limited to the minimum necessary to complete the restoration action. To avoid contamination of habitat during restoration activities, trash will be contained, removed, and

disposed of throughout the project.

HAZ-7: Materials in Stream Channel

Petroleum products, fresh cement, and other deleterious materials shall not enter the stream channel.

HAZ-8: Stationary Equipment

Stationary equipment such as motors, pumps, generators, compressors, and welders, located within the dry portion of the stream channel or adjacent to the stream, will be positioned over drip-pans.

HAZ-9: Internal Combustion Engines

All internal combustion engines shall be fitted with spark arrestors.

HAZ-10: Firefighting Tools

The Permittee shall have an appropriate fire extinguisher(s) and firefighting tools (shovel and axe at a minimum) present at all times when there is a risk of fire.

HAZ-11: Location of Vehicle Parking

Vehicles shall not be parked in tall grass or any other location where heat from the exhaust system could ignite a fire.

HAZ-12: Additional Fire Prevention Rules

The grantee shall follow any additional rules the landowner has for fire prevention.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
Prior to and during project operations.	Continuous		HCP&BD*** and CDFW** and CALFIRE*		

X. HYDROLOGY AND WATER QUALITY

HYD-1: Hydrology and Water Quality

Project operations will be adaptively managed based on flow, temperature and aquatic habitat monitoring results. These monitoring results will be presented to regulatory agency staff on an annual basis and/or as required by final permit conditions. In coordination with regulatory agency staff, the project team will adapt project operations as necessary to optimize aquatic habitat benefits resulting from the project while reducing impacts to a less than significant level. This may include changes to diversion timing/rates, changes to flow release timing/rates, and/or other changes to project operations.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
Prior to, during and after project operations.	Continuous		HCP&BD*** and CDFW** and NOAA**** and NMFS*****		

XI. LAND USE AND PLANNING

No specific mitigation measures are required for land use and planning.

XII. MINERAL RESOURCES

No specific mitigation measures are required for mineral resources.

XIII. NOISE

NOISE-1: Sensitive Receptors

To reduce the possibility of the construction noise and vibrations becoming an annoyance to sensitive receptors near the Project, exterior construction activity shall be confined to the weekday hours of 7:00 am to 7:00 pm or until sunset, whichever is later, and weekend hours of 8:00 am to 6:00 pm or until sunset, whichever is later. No heavy equipment related construction activities shall be allowed on Sundays or holidays.

NOISE 2: Notice to Sensitive Receptors

The Permittee shall notify sensitive receptors (all property owners within 350 feet) of potential impacts from noise and vibration prior to initiating each construction phase. The notice shall describe construction activities and anticipated noise and/or vibrations from these activities, and the duration and operational hours of construction activities. The notice will also include a contact that sensitive receptors may call to report noise or vibration concerns. The notice will include a request that property owners share the notice with any employee or tenants working within 350 feet of the project site.

NOISE 3: Equipment Noise

Construction equipment shall be properly maintained and equipped with noise control devices, such as mufflers and shrouds, in accordance with manufacturers' specifications. Following construction, the project will utilize passive structures (e.g., gravity feed diversions into ponds, passive filtration gallery, etc.) that will not generate excessive noise. As such, this operational noise will constitute a less than significant impact.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
Prior to and during project operations.	Continuous		HCP&BD***		

XIV. POPULATION AND HOUSING

No specific mitigation measures are required for population and housing.

XV. PUBLIC SERVICES

No specific mitigation measures are required for public services.

XVI. RECREATION

No specific mitigation measures are required for recreation.

XVII. TRIBAL CULTURAL RESOURCES

TCR-1: Inadvertent Discovery of Tribal Cultural Resources

If tribal cultural resources are encountered during construction activities, all onsite work shall cease in the immediate area and within a 50-foot buffer of the discovery location. A qualified archaeologist will be retained to evaluate and assess the significance of the discovery, and develop and implement an avoidance or mitigation plan, as appropriate. For discoveries known or likely to be associated with Native American heritage (prehistoric sites and select historic period sites), the tribes listed in Section 6.2 and those that the County has on file shall also be contacted immediately to evaluate the discovery and, in consultation with the project proponent, the County, and consulting archaeologist, develop a treatment plan in any instance where significant impacts cannot be avoided. Prehistoric materials which could be encountered include obsidian and chert debitage or formal tools, grinding implements, (e.g., pestles, handstones, bowl mortars, slabs), locally darkened midden, deposits of shell, faunal remains, and human burials. Historic archaeological discoveries may include nineteenth

century building foundations, structural remains, or concentrations of artifacts made of glass, ceramics, metal or other materials found in buried pits, wells or privies.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
Prior to and during project operations.	Continuous		HCP&BD***		

XVIII. TRANSPORTATION

No specific mitigation measures are required for transportation.

XIV. UTILITIES AND SERVICE SYSTEMS

No specific mitigation measures are required for utilities and service systems.

XV. WILDFIRE

No specific mitigation measures are required for wildfire.

MONITORING AND REPORTING

The Project will be funded through agency and foundation grants that include effectiveness monitoring and reporting. Additionally, agency–specific permits will be obtained prior to implementation and the Project will comply with all state, federal and county regulations. The permittee shall implement the following measures to ensure that the treatments at all Project sites will minimize take of listed salmonids, monitor and report take of listed salmonids, and to obtain specific information to account for the effects and benefits of the Project.

1) The Permittee shall notify all agencies (CDFW, Humboldt County, NCRWQCB, USACE, NOAA, and USFWS) prior to the commencement of work based on the conditions in the agency-specific permit.
2) The Permittee Project Manager shall inspect the work site before, during, and after completion of the action item, to ensure that all necessary mitigation measures to avoid impacts are properly implemented.
3) The Permittee shall perform implementation monitoring immediately after the restoration activity is completed to ensure that projects are completed as designed.
4) The Permittee shall perform effectiveness/validation monitoring all projects.
5) Current monitoring forms and instructions used by CDFW for the implementation monitoring and effectiveness monitoring are found in the California Salmonid Stream Habitat Restoration Manual. Additional monitoring protocols for groundwater and streamflow currently not included in the manual but developed by the Permittee, CDFW, and consulting hydrologists will also be used.
6) The Permittee shall provide reports to all agencies, (CDFW, Humboldt County, NCRWQCB, SWRCB, USACE, NOAA, and USFWS) based on requirements of the agency-specific permits obtained for the project.
7) The Permittee shall monitor and maintain the structures or work conducted at a given site as per the requirements of agency- specific permits and funding obtained for the project.

* CALFIRE = California Department of Forestry and Fire Protection
** CDFW = California Department of Fish & Wildlife
*** HCP&BD = Humboldt County Planning and Building Department
**** NOAA = National Oceanic Atmospheric Administration
***** NMFS = National Marine Fisheries Service

ATTACHMENT 2
Applicant's Evidence in Support of the Required Findings

The applicant has submitted the following written evidence in support of making the required findings. The following materials are on file with the Planning Division and copies of relevant are attached.

1. Application (in file)
2. Project Description (in file)
3. Plot Plan (attached)
4. Geologic Analyses (on-file)
5. Cultural Resources Survey (on-file)

ATTACHMENT 3

REFERRAL AGENCY COMMENTS AND RECOMMENDATIONS

The project was referred to the following referral agencies for review and comment. Those agencies that provided written comments are checked off.

Referral Agency	Response	Recommendation	Location
Building Inspection Division	✓	Approval	On file
Division Environmental Health			
Public Works, Land Use Division	✓	Conditional Approval	On file
California Department of Fish & Wildlife	✓	Conditional Approval	On file
CA State Water Resources Control Board Division of Water Rights	✓	Further Study	On file
Northwest Information Center	✓	Further Study	On file and confidential
Bear River Band	✓	Conditional Approval	On file and confidential

ATTACHMENT 4

CEQA DRAFT MITIGATED NEGATIVE DECLARATION

(State Clearinghouse # 2019109088)

ATTACHMENT 5

PUBLIC COMMENTS

EEL RIVER WATERSHED
IMPROVEMENT GROUP

1500 Alamar Way
Fortuna, CA 95540
(707) 682-6262
isaac@erwig.org

November 20, 2021

Re: Marshall Ranch Streamflow Enhancement Project
Record Number: PLN-2019-15661

Dear Humboldt County Planning Commission,

I am the Executive Director of the Eel River Watershed Improvement Group and I am writing in support of the Marshall Ranch Flow Enhancement project. The mission of the Eel River Watershed Improvement Group (ERWIG) is to improve instream and related watershed habitat conditions in the Eel River basin, and surrounding California coastal basins, to benefit of native stocks of salmon and steelhead. Our primary goals are to provide organizational and technical assistance to landowners & managers, to develop local watershed action plans, and to implement specific projects which will benefit salmonids.

Over the last 15 years I have spent countless hours in the Redwood Creek watershed conducting surveys, and carrying out restoration projects. Redwood Creek has a robust, but fragile population of three salmonid species, Chinook, Coho and steelhead. The Redwood Creek populations of these species are critical to the survival of these species in the South Fork Eel River, which is the most important Eel River tributary for salmonid recovery. All three salmonid species spawn in Redwood Creek every winter but face a drying stream channel most every summer, which is particularly detrimental to Coho salmon. ERWIG recently completed a CDFW FRGP funded habitat restoration project that will provide excellent summer habitat if there is water in the stream channel. The Marshall Ranch Streamflow Enhancement Project will directly benefit the summer habitat throughout our project reach and for miles downstream. I am intimately familiar with the watershed and flow conditions and recognize that lack of adequate instream flows is the primary limiting factor for salmonid recovery.

Our current climate crisis is further exacerbating drought conditions in the watershed, resulting in increased stream drying and higher intensity wildfires. Not only will this project benefit fish, but it will be an important source of water for fire-fighting. The fire suppression component of this proposed project would be an immense benefit to the community of Briceland.

The Salmonid Restoration Federation has worked diligently with Stillwater Sciences to design a project that is amenable to neighboring landowners and would still provide much needed flows to Redwood Creek during the dry season. This outstanding project provides a unique opportunity that would benefit fisheries, the community, and fire resilience with a willing landowner, the Marshall Ranch, whose land is fully protected under conservation easements.

In conclusion, I support the Marshall Ranch Flow Enhancement Project because of its contribution to increasing instream flows for salmonids and safety benefits for the community.

Sincerely,

Isaac Mikus
ERWIG Executive Director

November 19, 2021

Humboldt County Planning and Building Department
Attention: John Ford and Joshua Dorris
3015 H Street
Eureka, CA 95501

Re: Marshall Ranch Streamflow Enhancement Project
Record Number: PLN-2019-15661

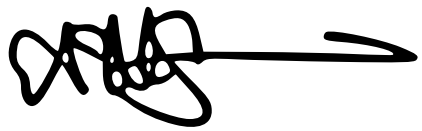
Dear Members of the Humboldt County Planning and Building Department and Briceland Community,

It has been one year since I last wrote to voice my support for the Marshall Ranch Streamflow Enhancement Project. As I write today, I feel great appreciation and admiration for the dedication of Salmonid Restoration Federation staff, the project team, and the Southern Humboldt Community, for finding innovative pathways toward climate resilience that strive to honor the needs of all.

While supportive of the first project design, this new proposal exceeds what seemed feasible just one year ago. As I stated in my last appeal, addressing the crises of climate and the legacy of extractive land use with urgency and scientific rigor in order for life to thrive in our watersheds is a responsibility we hold in common. It is heartening to see our community moving toward collaboration rather than polarization around these issues.

It is with optimism that I urge you to act in support of this solution.

Respectfully,



Ashley Brookens
6169 Briceland Thorn Rd
Redway, CA 95560

The Marshall Ranch

"From Time Immemorial"

November 11, 2021

Humboldt County Planning and Building Department
Attention: John Ford and Joshua Dorris
3015 H Street
Eureka, CA 95501

Re: Marshall Ranch Streamflow Enhancement Project
Record Number: PLN-2019-15661

Dear Members of the Humboldt County Planning and Building Department,

In the fall of 2016, Jay Stallman and Joel Monschke of Stillwater Sciences contacted us at the Marshall Ranch to present a watershed conservation opportunity that could potentially slow or alter the rapid decline of salmonid populations in Redwood Creek. According to the National Marine Fisheries and the California Department of Fish and Wildlife, there is a point of no return for the survival of these animals that has been called *"the vortex of extinction."* This term refers to Salmonid populations whose annual reproduction rate falls below their annual rate of attrition. Salmonid populations on a number of tributaries of the South Fork Eel River including Redwood Creek, currently teeter on the edge of this vortex.

The Marshall Family and their ancestors have endured numerous threats to their heritage and sustenance on this land through generations spanning back to time immemorial. Their Wailaki, Yurok and Pomo native ancestors endured unimaginable hardships during the Indian wars of the 19th century and every generation since has taken its turn to preserve a remnant of the larger part of their ancestral land that has been lost.

The current generation of the Marshall family has now secured and protected their portion of that ancestral land through the sale of a conservation easement to the California Rangeland Trust. This easement has been unanimously approved of by the Humboldt County Board of Supervisors and was funded by CDFW, California Department of Conservation (DOC) and CalFire.

The negotiated terms of this conservation easement reflect the core conservation values of the Marshall family. These terms include:

- The restriction of all forms of cannabis production on the ranch in perpetuity. This language was inserted at the insistence of the Marshall Family based on their desire to protect the conservation values of both lands and watersheds from the deleterious effects of cannabis land development and production.
- Extinguishing all sub-division rights. This eliminated an estimated 712 potential future development sites and has the direct benefit of limiting carbon emissions, water diversions, road developments and building developments.
- Limiting all non-cannabis agricultural development on the ranch to encompass less than 5% of the property. This includes vineyards, orchards and row crops.

- Establishing a Forest Management Plan that exceeds current restrictions of the California Forest Practice Rules.
- Establishing a Grazing Management Plan that balances conservation and livestock management.
- Restrictions on water diversions, water storage and work done in or near riparian corridors. These restrictions are at levels beyond current state restrictions.

In addition, the Marshall family has been blessed with both agency and conservation partners who had the foresight to incorporate language that would allow for innovative projects such as the Marshall Ranch Streamflow Enhancement Project into the complex Marshall Ranch Conservation Easement. This language was crafted to neither hinder nor mandate, but to allow for the proposal and implementation of projects that would specifically enhance stream flow to the watersheds that the Marshall family and agencies now steward in partnership.

During that time of easement language development, the Marshall family bore a significant financial burden for its legal and consulting team to extend the negotiating time frame in order to develop and shepherd this language into the easement during the three years of negotiations between the Marshall team, land trust and funding partners. The burden of yesterday has now given way to the joys of the current opportunity before us, as well as other opportunities yet to be discovered and designed that will help to restore the resources that we all share and depend on.

As recognized historic stakeholders in the Redwood Creek watershed, we are proud of the efforts of all of our partners to vigorously pursue restoring and enhancing our ancestral lands and watersheds and believe in the potential of this project to bring health to the precious resources that have been impaired to such a degree that they are unrecognizable in comparison to their former glory.

The Marshall Family has been involved in every strategic aspect of this project including the most recent design modifications. We are committed to an orderly process of design and oversight that will cause the Marshall Ranch Flow Enhancement project to succeed or fail based on the merits and evidence of science. Through our own work and experience we have come to possess a well-reasoned confidence in the engineering capabilities of Joel Monschke of Stillwater Sciences, the project management of Dana Stolzman of Salmonid Restoration Federation as well as the participation and oversight of our agency partners.

On behalf of the Marshall Ranch, LLC and the Marshall Family, we strongly support continuing to move this project forward to 100% design completion, oversight and implementation.

Please consider the Marshall Ranch, LLC with its Marshall family members as strategic partners in the difficult but beneficial work of conservation in the region.

Our very best,

Pastor David Sanchez, GM
The Marshall Ranch, LLC

Elizabeth Marshall Maybee, Owner
The Marshall Ranch, LLC

Letter of Support

Monday, November 22, 2021

Humboldt County
Planning and Building Department
3015 H Street
Eureka, CA 95501

Re: Marshall Ranch Streamflow Enhancement Project
Record Number: PLN-2019-15661

Dear Humboldt County Planning Commission,

I am writing to express my support of the Marshall Ranch Flow Enhancement project. I am a long-time resident of the Briceland area, a Registered Professional Forester, and the contracted land manager for Lost Coast Forestlands. My company, Restoration Forestry, Inc., has been working in the Mattole and South Fork Eel River basins on fisheries restoration and long-term timber management for 24 years.

As a landowner, community member, and a resource professional, I am intimately familiar with the low-flow conditions in Redwood Creek. I strongly believe that this proposed off-stream pond project is the appropriate scale to help address the low-flow conditions that imperil juvenile salmonids in this critical watershed. In fact, Lost Coast Forestlands has recently acquired the upper 938 acres of the Redwood Creek watershed and has worked directly with SRF to support its acquistion of funding from CDFW ($277,000) to further augment flow in Redwood Creek increasing the effectiveness of this very important project.

Additionally, as a resident of the Briceland area since 1993, I recognize what a unique opportunity this project represents - a project with a willing landowner who supports conservation practices and increasing instream flows for the benefit of fish. It's not everyday that a conservation opportunity of this scale is even possible. It's even more of a rarity for two large landowners within a couple of miles of each other on the same tributary are willing to work

with a public benefit non-profit simply for the benefit of fish and instream flows. This kind of unique opportunity cannot be passed up.

Redwood Creek is a critical tributary of the South Fork Eel and there are hundreds of diversions within the watershed. The time, effort, and cost associated with developing individual storage and forebearance solutions like have been successful in the upper Mattole would be burdensome and take too long to come to fruition. That is time that Redwood Creek coho may not have.

The Briceland community is also quite vulnerable to the next catastrophic wildfire. Ever worsening climate change effects will only serve to exacerbate the susceptibility of our local forests to increasing drought conditions and the resulting higher intensity fires that are guaranteed to result. The last two fire seasons have clearly demonstrated how limited our area is in its ability to provide large amounts of accessible water to combat these essentially inevitable future crises. The fire suppression component of this proposed project would be an immense benefit to the community of Briceland.

In conclusion, I support the Marshall Ranch Flow Enhancement Project because of its contribution to increasing instream flows for salmon and safety benefits for my community.

Sincerely,

Timothy A. Metz, RPF #2601
Restoration Forestry, Inc.
1593 Old Briceland Road
Garberville, CA 95542
(707) 496-0322
tim@restorationforestry.com

November 19, 2021

Humboldt County Planning Department
3015 H Street
Eureka, CA 95501
planningclerk@co.humboldt.ca.us

Subject: **Letter in Support of the Marshall Ranch Streamflow Enhancement Project, PLN-2019-15661**

File: Marshall Ranch, Redwood Creek, South Fork Eel River Flow

This letter is provided to express the North Coast Regional Water Quality Control Board's (Regional Water Board) support of the Marshall Ranch Flow Enhancement Project, PLN-2019-15661, (Project) proposed by the Salmonid Restoration Federation (SRF). Though the project has been modified since our last letter of recommendation to the Humboldt County Planning Commission on December 4, 2020, we continue to view this project as a legitimate approach to addressing the water quality and habitat impacts of low flows in Redwood Creek.

The Project is designed to augment streamflows in Redwood Creek during the low flow season, with the goal of maintaining surface connectivity of the stream in support of threatened and endangered salmonids. The Project is the result of a flow assessment study in Redwood Creek partially funded by the Regional Water Board that identified that water conservation measures alone, while important, would be inadequate to maintain surface flows during seasonal low flows. This Project takes a unique approach of developing a water storage facility (pond) to collect runoff. Water storage facilities, if adequately sized, designed, and managed, could provide the volume of water necessary to maintain surface water flow.

The South Fork Eel has been identified as a priority watershed for Coho salmon recovery and one of the highest priority watersheds in the state for flow enhancement. Redwood Creek suffers from chronic low flows in the dry season where pools become disconnected and water temperature is lethal for juvenile salmonids.

The Regional Water Board recognizes that beneficial uses, including cold water fisheries, require flow to maintain habitat and flow dependent water quality conditions.

At the same time, we realize there are risks to water quality associated with discharges of stored water.

We expect that any risks associated with the Project can be mitigated through establishment of proper conditions and monitoring requirements during our permitting process. We believe this Project can provide needed flows to Redwood Creek, in a safe, and effective manner, in support of fisheries.

The Regional Water Board has a vision of Healthy Watersheds, Strong Partnerships, Effective Regulation. This Project is the result of partnerships forged by SRF with the scientific community, the Marshall Ranch, and state funders. We believe this Project, along with ongoing regulatory and enforcement efforts in the Redwood Creek watershed, is a strong step toward a healthy watershed for beneficial uses of water.

Please contact Bryan McFadin at Bryan.McFadin@waterboards.ca.gov if you have any questions.

Sincerely,

Clayton Creager

On behalf of
Matthias St. John
Executive Officer

211119_BCM_Marshall Ranch Flow Augmentation

cc: Dana Stolzman, SRF, srf@calsalmon.org

October 30, 2021

Humboldt County Planning and Building Department
3015 H Street
Eureka, CA 95501

Re: Marshall Ranch Streamflow Enhancement Project for Redwood Creek
Record Number PLN-2019-15661 (filed 6/27/2019)

Dear Humboldt County Planning and Building Department; Attention John Ford and Joshua Dorris,

I am writing in support of The Marshall Ranch Streamflow Enhancement Project. This project is a solution that will go a long way towards bringing the main stem of Redwood Creek into a healthier state of being. As a neighbor who shares a common property line with the Marshall Ranch, I am especially interested in seeing that Redwood Creek is given every possible chance to recover.

I am also a member of the Board of Directors of Briceland Community Service District. I am not writing on their behalf. However as a result of my experience as a board member concerned with water availability, I recognize the severity of the low-to-non-existent flow conditions of Redwood Creek during the summer months. Sustainable water management is not only good planning, it is essential to the survival of the creek and the animal life that depends on it.

The potential of this project to contribute to salmon recovery is enormous. Keeping water in the creek during the summer months and allowing juvenile fish to survive is critical to salmon recovery. The best available science has gone into this project and the design features bear witness to that fact.

I fully support this project as a partial solution to the problems of Redwood Creek. Getting flow back into the main stem of the creek and also educating landowners all along the banks are do-able and necessary. I look forward to seeing the completion of this project and its very positive effect on Redwood Creek.

Sincerely,
Chestine Anderson
95 Old Somerville Creek Road
Garberville, CA 95542

J. Eli Asarian
Riverbend Sciences
1614 West Ave.
Eureka, CA 95501
(707) 832-4206
eli@riverbendsci.com

November 21, 2021

Humboldt County Planning and Building Department
3015 H Street
Eureka, CA 95501

Re: Marshall Ranch Streamflow Enhancement Project; PLN-2019-15661; SCH # 2019109088

Dear Planning Director, Planning Staff, and Planning Commissioners:

I am writing to encourage you to approve the Mitigated Negative Declaration for the Salmonid Restoration Federation's Marshall Ranch Streamflow Enhancement Project PLN-2019-15661, SCH # 2019109088.

I have 20 years of experience studying California's rivers and streams and am the owner of the Eureka-based consulting firm Riverbend Sciences. I have expertise in aquatic ecology, water quality, hydrology, data management and analysis, geographic information systems, and historical ecology. I have authored or co-authored over 25 technical analyses on stream flow, water temperature, water quality, and algae in the Klamath and Eel River watersheds, including several peer-reviewed journal articles, as a consultant to state and federal agencies, Native American tribes, private industry, and non-governmental organizations including CalTrout, Friends of the Eel River, and the Eel River Recovery Project. I have assisted National Marine Fisheries Service in developing and implementing Endangered Species Act recovery plans for salmon and steelhead throughout California, including the South Fork Eel River. In recent years, my work has focused on water temperature and I am currently completing a study of temperatures within the South Fork Eel River watershed, including Redwood Creek, as a contractor to the State Water Board. I have served on the Salmonid Restoration Federation's board of directors since 2015. The opinions I offer here are my own, based on my professional experience.

Although much reduced from historical abundances, the South Fork Eel River watershed is still a regional stronghold for salmon and steelhead. Adequate summer stream flows are particularly important for coho salmon, a species that requires year-round cool water to survive. Long-term measurements from the U.S. Geological Survey that I analyzed as part of my work on the coho salmon recovery plan show that in recent decades, summer river flows declined across the South Fork Eel River and much of the North Coast, coincident with a warming climate and increasing human populations. Absent decisive action to change course, these trends are likely to continue, with summer water becoming increasingly scarce for both human uses and fish.

That is why projects such as the Marshall Ranch Streamflow Enhancement Project are so vitally important. Redwood Creek and its fish are currently at a tipping point, with their fate depending on what actions we take. In some other South Fork Eel tributaries such as Salmon Creek, existing land and water use are already too intensive, and intervention is unlikely to be fruitful. Too many straws drawing too much water from too widespread an area around the watershed. Conversely, other South Fork Eel tributaries such as Bull Creek are fully protected as public land, resulting in less need for summer flow enhancement. Redwood Creek has a diverse mix of conditions, with some stream reaches already dewatered but reliable flows in other reaches. Redwood Creek is impacted enough that it needs help, but not so damaged as to be irreparable. If adequate flows were present, Redwood creek could provide excellent fish habitat.

Salmonid Restoration Federation and its partners have followed a strategic and methodical approach in Redwood Creek, first learning the lessons of previous efforts within the region (e.g., Sanctuary Forest's work in the Mattole River, as well flow augmentation projects in Sonoma County), then designing and implementing a long-term program to monitor flows and build an understanding of the watershed's hydrology, then considering various strategies for improving summer flows, and then inventorying potential project sites.

The project team has carefully considered the neighbor's concerns and reconfigured the project multiple times to address those concerns. The level of planning, engineering, geotechnical, and seismic analysis that has gone into this project likely far exceeds that of any other pond of comparable size within the region. In response to neighbor's concerns, the current proposed project is substantially smaller than original proposed.

The Marshall Ranch Streamflow Enhancement Project would meaningfully improve the low-flow conditions that are the limiting factor for Redwood Creek's salmon, bolstering the creek's contribution to sustaining the salmon populations within the larger South Fork Eel River watershed and the region. I am not aware of any other single project that could do as much good for salmon in the South Fork Eel River as this one. In addition, this project could serve as a demonstration that could be replicated around the region.

Our iconic salmon will need help if they are to survive the hot droughts coming in the 21st century, and projects such as this are precisely what is needed. It is the right project in the right place at the right time.

Sincerely,

J. Eli Asarian

Monday, November 22, 2021

Humboldt County Planning Department,
3015 H Street, Eureka, CA 95501.

Re: Marshall Ranch Streamflow Enhancement Project; PLN-2019-15661

Dear Planning Director, Planning Staff, and Planning Commissioners:

I am writing to you to encourage approval of the Marshall Ranch Streamflow Enhancement Project proposed by the Salmonid Restoration Federation (SRF) and its team of consultants on behalf of the Marshall Ranch. I have been working in the field of watershed restoration for more than 40 years and I have seen an evolution in the understanding of habitat needs and strategies to save our salmon. I have also seen an increase in funding to support the efforts to restore and enhance salmonid habitat yet we are still seeing runs diminish. We are in a race against time and we need to do more. Intense development in our watersheds, both before and after cannabis legalization, has increased the demand for water while climate change has resulted in hotter summers and drier winters. The summer is a critical time for young salmonids like coho salmon and steelhead trout that spend a year in freshwater streams before migrating to the ocean. That year allows them to gain size which greatly increases their chances of survival in the ocean. However, without water in the creeks, juvenile salmonids die in shrinking pools that eventually dry up or are forced to migrate prematurely, with diminished chance of survival.

According to NOAA Fisheries the South Fork Eel River is key to the recovery of coho salmon in the Southern Oregon Northern California Coastal (SONNCC) Evolutionary Significant Unit. The California Water Action Plan ranked the South Fork Eel River as 1 of 5 priority watershed for Flow Enhancement in California. Redwood Creek, a South Fork Eel tributary, suffers from chronic low flows in the dry season where pools become disconnected and water temperatures are lethal for juvenile salmonids. Tributaries like Redwood Creek provide refugia habitat for threatened juvenile coho salmon but they suffer from the cumulative impacts of legacy logging and unregulated water diversions. The Marshall Ranch Project will help alleviate the lack of summer flow in Redwood Creek.

Given the changing climate conditions which scientists believe will lead to hotter temperatures, greater evapotranspiration, and changing rainfall patterns, we need to find creative solutions to enhance summer streamflows to avoid the extirpation of coho salmon and steelhead from our local watersheds. The Marshall Ranch Flow Enhancement Project does just that by creating a storage pond to store water collected during the rainy season and releasing it during the dry season to maintain dry season stream flows. We need more projects like this. Besides benefitting salmon and steelhead in Redwood Creek and the South Fork Eel River, there will be benefits to other aquatic species and to the riparian forest that provides bird and wildlife habitat. The pond will also provide a source of water for emergency fire suppression, and as we have seen in recent years, wildfires are an increasing threat in our rural watersheds.

The Marshall Ranch project has been carefully studied and vetted. In response to concerns of the neighboring property owners, the project team has modified and downsized the original pond design. The project timeline has been delayed one year to conduct additional studies and design a smaller pond to address the concerns of the neighbors. To attain the originally proposed flow augmentation goal, SRF is in discussions with property owners near the headwaters of Redwood Creek to add more pond storage to make up for the reduction of the pond size at the Marshall Ranch. The Marshall Ranch Flow Enhancement Project presents the opportunity to not only enhance summer low flows in Redwood Creek, it will also be a pilot project that will provide valuable information for how to design and implement similar projects in the future. I encourage you to approve the Mitigated Negative Declaration for this project.

Sincerely,
Don Allan,
Westhaven CA.,
Board President,
Salmonid Restoration Federation

Jim Courtois
PO Box 285
Garberville CA, 95542

November 21, 2021

Dear Humboldt Planning Commission,

Thank you for your efforts in reviewing this project. I am writing to support the Marshall Ranch water project. I think the current plan has taken into consideration the input from the community concerning scale, and the possible danger to neighboring residents, and further, the community's rural ethos. I commend the design team and the groups that are working to restore the summer flows in Redwood creek to help the fish survive. I feel this plan along with your consideration of the concerns of community members, and the conditions you might require of the applicants if nessasary to answer those concerns, will only improve the whole project. My concern is the long-term management and operation of the dam and long-range county oversite of dam safety. I hope the plan does some good for the fish.
Thank you.

Jim Courtois

Joan E. Courtois
PO Box 285
Garberville, CA 95542
(707) 923-4123

November 22, 2021

Humboldt County Planning Commission
825 5th Street
Eureka, CA 95501

Re: Marshall Ranch Streamflow Enhancement Project
Record #: PLN-2019-15661 / AP#: 220-061-011

Dear Humboldt Co. Planning Commissioners Bongio, Levy, Mitchell, Newman, McCavour, O'Neill, Mulder and Director John Ford,

I am writing to you to submit my comments and requests on the Marshall Ranch Streamflow Enhancement Project as is being proposed to your Commission for approval with the County Notice of Intent to adopt a Mitigated Negative Declaration for this project. To put this in geographical and historical perspective, my property is the closest to and adjoins the parcel where this project is proposed. The smaller of the two proposed ponds, noted as the eastern pond, will be located on the terrace directly over our property, home and office. The second pond is proposed to be located further to the west, upstream. A map of the proposed plan is included showing the proximity of our home to these proposed ponds.

In this project MND description it was noted that this is the third project revision that was twice previously circulated for public comment. This is the first time this Marshall Ranch Streamflow Enhancement Project has come before the Planning Commission for consideration. I would like to recommend that all the previous submissions of public comments be reviewed so you get a sense of the impact this project was to the immediate neighbors and the overwhelming surrounding community response to this originally threatening proposal.

The plans now being presented to you have been revised and modified and we appreciate that our concerns have been listened to and taken into consideration. We believe these design modifications have minimized, if not eliminated the threat to our home and property.

With these proposed plan changes we are not objecting to this project but taking all what we have been through into consideration. I still have some concerns regarding the design, operational plans and management of this project I would like to address.

This project is changing the natural state and altering a geomorphic structure that will never be able to be restored to its original formation. I believe it is reasonable to question what the short and long-term effects these changes might make and the unknown or unrealized effects this could create.

Redwood Creek has been designated by the State as a critical, priority watershed. It has been noted that the "rearing habitat for juvenile salmonids has been substantially degraded and the current lack of dry season flow is likely the leading factor". We all know that Redwood Creek is experiencing reduced water levels due to the cannabis operations massive pumping and water consumption throughout the entire watershed. Commercial cannabis cultivation, both legal and illegal, are drawing more water out of the watershed than any single water usage. The County has approved countless numbers of cannabis permits that all require large volumes of water to be captured, stored and utilized for these operations. This is definitely having a detrimental impact on the availability of summer/fall flow water in the creek. Unless there is a comprehensive encompassing curtailment of all cannabis water usage in the watershed, projects like these will be fighting a water war for the fish.

If fish enhancement projects in our watersheds are to be successful, there needs to be a commitment by the County to limit the amount of water being permitted for commercial enterprises. To balance these conflicting water purposes, the County should institute a moratorium on all cannabis permits until a comprehensive, cumulative environmental report can be conducted on the effects commercial cannabis operations has had on all our watersheds.

Another component of this project is the proposed water availability for fire suppression. The new plan is now offering:

1.) Five – 100,000 gallon rainwater catchment tanks for flow enhancement, ranch use and fire suppression.
2.) Two fire hydrants to allow for a "portion" of the water stored in the tanks to be utilized for domestic, ranch and fire suppression needs.
3.) Two off stream ponds, one 3.8 million gallons and a second 5.7 million gallons could potentially provide helicopter drawn water for fire suppression.

There has been no preliminary or formal agreement proposed or offered from the Marshall Ranch allowing our local volunteer fire department unfettered access to the five water tanks proposed nor is there any guarantee that this water would be available when needed as it would be "shared" with domestic and ranch water use. The proposed plan shows the ponds of water would be available for fire suppression but there is a good possibility the tanks and ponds will be drained down or completely dry during the most critical time of year when water is needed for firefighting because they will be using it for their stream enhancement purposes during the dry summer months and at the height of our fire season. So, will there be water available for fire suppression?

Briceland Volunteer Fire Department and the Briceland Fire Protection District encourages landowners to store water for emergency fire response and there are many private residents and small local neighborhoods with designated water storage for emergency fire needs. In the event of a fire, a fire department will take the water closest to or most easily available to an incident. Briceland VFD has taken the lead in promoting public awareness and the steps necessary to address emergency response to fires and other emergency events that may occur. BVFD has long encouraged and promoted water storage for fire suppression purposes.

The Marshall Ranch should be encouraged to establish their own water storage sites for fire suppression throughout their entire private ~3,000-acre ranch.

As public funds are being utilized for the design, engineering and construction of the Marshall Ranch ponds and they are utilizing a "water availability for fire suppression" component in their permit and grant applications, I think it is reasonable to ask:

Is any of the tank water set aside for exclusive fire department use? If so, how much?

Will the department access to this water be open at any time or will arrangements for taking water need to be coordinated with the Marshall Ranch?

Will the tank water source be available for department training or other non-emergency fire department use?

Will the fire department be granted use of the water with a formal written document or agreement?

I think these are reasonable requests and conditions that the County should impose on this application for the permit of this project.

A large part of this project process so far has been in the engineering and producing design plans for this project. My concerns going forward is if the County allows this project to be constructed, how will it be overseen and managed?

Reducing the size of the ponds has placed this under the jurisdiction and oversite to Humboldt County. The County Planning and Building Department is the lead agency and it has the responsibility to assure us of continued public safety and monitoring. Humboldt County does not have a designated department of Dam Safety and there is nothing in the plans that lays out or proposes how the County will monitor these ponds either short or long term. State grants have already been utilized to conduct preliminary studies and construction proposals and additional private and public funds are proposed to be tapped to finance this project but where are the funds for County oversite and monitoring to come from? Does the County have qualified staff to perform monitoring and safety assessments, or will this need to be contracted out to more qualified or licensed overseers?

This project proposes that:

"After construction has been completed, extensive post-project monitoring and adaptive management will be implemented to ensure that the project is functioning as designed. This will be conducted through continued involvement of the Project's Technical Advisory Committee (TAC) including representatives from multiple state and federal agencies including Wildlife Conservation Board, California Department of Fish and Wildlife, NOAA Fisheries, State Water Resources Control Board, and North Coast Regional Water Quality Control Board."

The representatives stated above consists of past, current or potential future governmental funding agencies for this project and some of these agencies are the very same ones granting permits for this project. How can they be objective in overseeing the safe construction and management of this operation when they are all direct funders? Who else is on this TAC and who appoints them? Are they compensated? I believe this is a direct conflict of interest and is not in the best interest of public trust. At a minimum, a local resident of Briceland should have a seat at the table of this TAC committee.

Another aspect of this proposed project that must be addressed is the private benefit that will come to the Marshall Ranch landowners from the use of public funds for this project. In the plans it is proposed that a 501(c)3 tax exempt organization will be formed to be the responsible party for the operation and management of this water storage and delivery facility but the Marshall Ranch, LLC will retain ownership of the property and infrastructure. Again, a local resident of Briceland should be granted a seat on this board of directors. Public grant funding is slated to be utilized from various public fund sources (CA 2014 Proposition 1 and CA 2018 Proposition 68 taxes) for the implementation work and additional project components not initially funded. Some of these other project components consist of piping systems, pumps, solar arrays, road construction, water hydrants and holding tanks for domestic water use to name a few. The plans show projected short- and long-term project costs but they do not provide any solid financial income projections or feasibility analysis for the funding of the operations and management of this facility. The project states they have secured a single foundation commitment for private funding for long-term operations, maintenance and monitoring but they do not offer any proof of this commitment or any alternative funding source if this foundation is unable to meet its promise in the future. The construction of five 100,000-gallon water tanks designated for domestic and ranch water use and noted as available for fire suppression purposes is questionable as designed. There is no restriction or prohibition of the water being sold for commercial purposes. This should be clearly prohibited. There is no discussion in the plans as to the disposition of these costly assets if the project is halted or abandoned. No plans have been included or submitted for the decommissioning of this facility after the end of its useful life or where the funds for this decommissioning will come from and who will be responsible for carrying this out. There is no explanation or justification for the use of public funds to benefit the private landowner and no public funds should be utilized for outright private benefit.

We have now been presented with preliminary management and operational plans. We would like them to include an emergency response plan in the event of pond failure, detailed financial and decommissioning plans. If the Planning Commission approves this project to go forward, we would like to see the project plans expanded to include detailed information and designs with a "birth to death" conceptual approach. I believe it would only be prudent for a project of this magnitude.

This project has the noble and virtuous intentions of helping to enhance and restore the habitat for the fish in the creek. I support this effort and feel these plans are a good start to a successful outcome.

The Planning Commission is entrusted with the task of the protection of public safety and welfare and to protect the public interest within the parameters of reviewing, guiding and approval of the making of sound planning and growth decisions. Each project should be considered within its own context of community and location impacts. You wield the power over how our communities grow and develop.

I appreciate you taking your time and consideration of my comments on this project.

Sincerely,

Joan E. Courtois

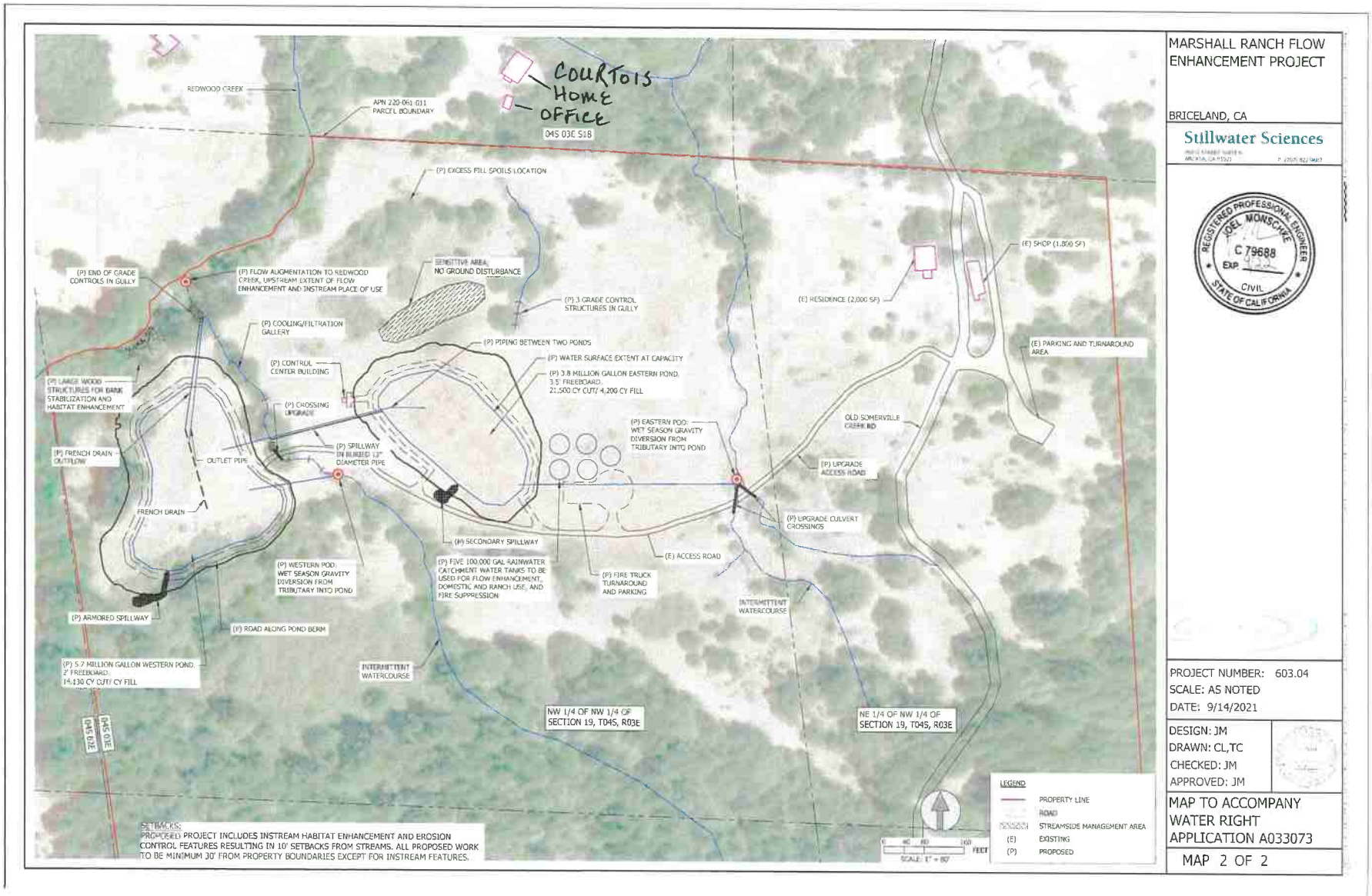


Figure 2: Project Site Plan

November 22nd, 2021

To Whom It May Concern:

I am writing to express my support for the Salmonid Restoration Federations' "Marshall Ranch Streamflow Enhancement" project. Flow enhancement from off-channel ponds is a promising and timely tool to help address the current crisis of declining salmon populations in California. While there is much to learn about how to best implement these projects, the scale of the Marshall Ranch Flow Enhancement project (i.e. magnitude and season of flow augmentation) suggests that it can have a significant beneficial impact to imperiled rearing salmonids. One of the factors that led me to support his project is the robust monitoring plan that SRF and their partners have described to me. I strongly encourage them to use this plan, within an adaptive framework, to maximize the benefit and minimize the risk of flow augmentation to salmon and other stream life. This letter is based on my experience as a fisheries ecologist and hydrologist, which includes research on a similar flow augmentation project in the Russian River. Thus, my comments focus on the potential ecological benefits of flow enhancement, rather than project design and engineering specifications.

Many of California's coastal salmon-bearing streams naturally experience low and intermittent streamflow conditions in the dry season (Grantham et al. 2012; Obedzinksi et al. 2018). Intermittency creates a natural bottleneck for rearing juvenile salmon by constricting habitat and degrading water quality. While this is a natural process, anthropogenic water diversions and habitat modification can increase the extent and duration of flow intermittency, pushing some streams over the edge from viable rearing habitat to conditions that are stressful or lethal for rearing salmonids (Obedzinksi et al. 2018). Research suggests that intermittent streams play a key role in salmon production (Wigginton 2006; Erman and Hawthorne 1976) and thus implementing and studying projects that limit flow impairment in such streams is important for regional salmon recovery efforts.

Redwood Creek in Humboldt County has been identified as a high priority stream for endangered Coho salmon and threatened steelhead trout, and is also targeted in ongoing streamflow restoration efforts by the California State Water Resources Control Board (SWRCB) and the California Department of Fish and Wildlife (CDFW 2014, 2016; NOAA 2014). Reaches of Redwood Creek, including the portion of the stream affected by SRF's proposed project, experience flow intermittency and stream drying by mid to late-summer each year, with rearing fish confined to isolated pools which remain wet. Anecdotal evidence from SRFs low flow monitoring and similar studies in near-by watersheds suggest that human water withdrawals may be contributing to an earlier recession of flow and more extensive stream channel drying than in the stream would experience naturally. Flow augmentation has the potential to significantly improve the extent and quality of juvenile rearing habitat in the project reach of Redwood Creek.

There is recent precedent for flow augmentation projects in the nearby Russian River (Deitch and Dolman 2017, Ruiz et al. 2019, Rossi et al. 2021 *in review*). These projects indicate that flow augmentation is a promising tool for facilitating movement of out-migrating smolts and improving summer rearing habitat salmonids—particularly in streams where humans have altered the natural flow regime (Rossi et al. 2020 *in review;* Rossi 2020; Ruiz et al. 2019). In

Porter Creek, a Russian River tributary with similar summer flow intermittency to Redwood Creek, we completed a recent study that evaluated the physical and biotic responses to a flow augmentation treatment (Rossi et al. 2020 *in revision,* Rossi 2020). We found that flow augmentation had a strong positive response on juvenile salmon foraging behavior, stream invertebrate flux, and indicators of habitat quality for rearing juvenile salmonids and other drift foraging fish. This study provides compelling evidence that enhancing dry season flows in small coastal streams, which are subject to high water-use pressures from agricultural and domestic water users, can improve habitat for aquatic species and promote the recovery of threatened salmonid populations.

It is important to note that there is still a lot to learn about when, and how to best implement flow augmentation projects, and not all flow augmentation may have the desired positive effects. In Porter Creek, we found that the magnitude, timing, and duration of flow enhancement necessary to trigger beneficial ecological responses is site-specific to (e.g. channel type) and strongly affected by the antecedent (ambient prior to augmentation) flow conditions in the stream. We also haven't studied the effects of augmentation on non-target species (e.g. amphibians), which warrants further investigation. But I believe that any risks of flow augmentation to stream life can be limited through project planning, monitoring, and adapting augmentation levels based on monitoring data – which I understand is part of SRFs project monitoring effort. Salmon populations are near a tipping point in many of our California coastal streams and flow augmentation is one tool to help to prevent catastrophic population losses as regional salmon recovery strategies are implemented. Thus, I strongly support continuing to invest in off-channel flow augmentation projects—with a caveat that it is vital to monitor the effects of this augmentation, and to use an adaptive science-driven approach to inform its implementation.

Please don't hesitate to follow up with me if you have any questions or would like additional information.

Sincerely,

Gabriel Rossi, PhD

Postdoctoral Researcher
Grantham Lab
University of California at Berkeley

Gabriel_Rossi@berkeley.edu

References Cited in This Letter

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BRICELAND VOLUNTEER FIRE DEPARTMENT
P.O. Box 1249
Redway, CA 95560
bricelandfire@gmail.com

Humboldt County Planning Commission
Planningclerk@co.humboldt.ca.us

Re: Support of Marshall Ranch flow enhancement project, record number PLN-2021-15661

November 20, 2021

To the Humboldt County Planning Commission,

Briceland Volunteer Fire Department supports the proposed Marshall Ranch flow enhancement and water storage project. With the increase in large devastating fires in California, having available water sources with adequate storage is a critical component for successful fire suppression in our rural communities. The Briceland community is in need of additional water storage to both keep the creeks flowing in the summer months and to provide fire water availability when needed in emergencies. Also, there is currently a very limited number of adequate pond sites within the Redwood Creek watershed and the Briceland Fire District boundaries available for helicopter bucket-drop operations. The ponds proposed in the Marshall Ranch project would provide much needed water storage for this community and we ask that you pass this project as proposed.

Sincerely,

Aurora Studebaker

Aurora Studebaker, Fire Chief
Briceland Volunteer Fire Department

Dorris, Joshua

From: Tim Bailey <tim@thewatershedcenter.com>
Sent: Monday, November 22, 2021 2:40 PM
To: Planning Clerk
Subject: PLN-2019-15661 Marshall Ranch flow enhancement

Follow Up Flag: Follow up
Flag Status: Completed

Attention: Humboldt County Planning Commission,
Record Number: PLN-2019-15661

I am writing in support of the Marshall Ranch Flow Enhancement project that has been developed by the Salmonid Restoration Federation and the Marshall Ranch. After extensive review of the documents, as well as conversations with interested community members I believe that this project serves the communities best interests and the proposal should be approved.

I believe that the project proponents and their consultants have drafted a plan that will produce significant improvement in the salmonid carrying capacity of the watershed. I have reviewed data from several other flow augmentation projects in the Coast Range. These projects have shown promising results. Small increases in dry season baseflow produce dramatic increases in survival.

My family has owned land in an adjacent watershed for over 50 years. The Southern Humboldt area is facing escalating natural resource challenges. Climate change and changes in land use have put our native fisheries on the brink of extinction. In many cases incremental decline of watershed values occurs on a parcel by parcel basis. I have come to consider this plan a necessary watershed mitigation, to maintain the viability of Redwood Creek as a Salmon rearing creek.

The South Fork Eel is a critical refugia for the Southern Oregon Northern California population of Coho Salmon. The productivity of cooler westside tributaries like Redwood Creek will be vital to any future recovery. The resilience of our watersheds in the face of growing climate risks is likely going to require more similar interventions to prevent the extinction of keystone species.

Sincerely,

Tim Bailey

Tim Bailey
pronouns(he, him, his)
Shared Stewardship Advisor, North Zone
Director California Forest Lidar Collaborative
Watershed Research and Training Center
tim@thewatershedcenter.com
(707)206-5840

November 20, 2021

To: Humboldt County Planning Commission
Subject: Marshall Ranch Streamflow Enhancement Project

This letter is provided in support of the Marshall Ranch Streamflow Enhancement Project proposed for the Redwood Creek watershed, Humboldt County. By way of introduction, I am a hydrologist working on salmonid sustainability projects for the past three decades. I was lead hydrologic scientist for Redwood National and State Parks for 32 years. My primary areas of study included monitoring streamflow conditions for salmonids and design and evaluation of habitat enhancement projects. For the past twenty-six years I've also provided hydrologic consulting services on a wide variety of projects, including hydrologic designs and analyses of tidal marsh restoration projects, stream restoration projects, and analyses of the magnitude and effects of low flows on Humboldt County streams. Finally, I have served as lead scientist on the County of Humboldt Extraction Review Team (CHERT), coordinating Federal and State review of gravel mining on Humboldt County rivers and providing hydrologic and geomorphic input on gravel mining plans annually since 1992.

Since 2004, one of my clients has been the Sanctuary Forest based in Whitethorn. Tasha McKee has hired me for many projects over the past 16 years, most recently focusing on low flow problems in the Upper Mattole. For several years (2015-17) I provided similar services to the Salmonid Restoration Federation for analyzing low flow conditions in Redwood Creek watershed in which the Marshall Ranch project is located. I am quite familiar with both the Redwood Creek watershed and the seriousness of the low flow problem.

Sanctuary Forest has implemented numerous low flow enhancement projects over the years, starting with a program of increasing water storage capacity (tanks) among landowners willing to forbear removing water from streams in the Upper Mattole during the driest times of the year. More recently, the focus has been on near- and in-channel projects aimed enhancing low flows by slowing the release of groundwater to streams to extend groundwater contributions to streamflow further into the dry season. While each individual project contributes incrementally to low flow enhancement, the cumulative effects of these project certainly have had significant beneficial effects for juvenile salmonid drought survival. However, unlike numerous small-scale projects implemented over time, even at the reduced scale now under consideration, the Marshall Ranch project will provide immediate and dramatic benefits to Redwood Creek. There is a lot to be said for taking such a bold step where site conditions are favorable.

Based on my review of the revised preferred alternative scope, designs and analyses for the Marshall Ranch project, I am confident that due diligence has been done by the geologists and engineers working on the project and that their conclusions of low risk of project failure meet the high scientific and engineering standards required for a project of this magnitude.

I urge the Humboldt County Planning Commission to approve the Marshall Ranch flow enhancement project.

Thank you,

Randy D. Klein, Hydrologist
Arcata, CA

Dorris, Joshua

From: Harry Vaughn <mrhvaughn@gmail.com>
Sent: Monday, November 22, 2021 11:05 AM
To: Planning Clerk; Harry Vaughn; Dana Stolzman; Jan Vaughn
Subject: Re: Marshall Ranch Streamflow Enhancement Project; PLN-2019-15661

Follow Up Flag: Follow up
Flag Status: Completed

November 22, 2021
Humboldt County Planning and Building Department
3015 H Street
Eureka, CA 95501
Re: Marshall Ranch Streamflow Enhancement Project; PLN-2019-15661; SCH # 2019109088

Dear Planning Director, Planning Staff, and Planning Commissioners:
I am writing to encourage you to approve the Mitigated Negative Declaration for the Salmonid Restoration Federation's Marshall Ranch Streamflow Enhancement Project PLN-2019-15661,
SCH # 2019109088.

I have lived in Salmon Creek, Southern Humboldt County, off and on since 1953. Salmon Creek is the name given to our creek, formerly known as Se naan Kook as where I live is traditionally Wailake Territory. Salmon are essential to this place I call home. And water is life for salmon. Salmon emerge from the gravels and travel to the ocean to gather nutrients and bring them back to their natal stream, with straying that sustains other watersheds... like when salmon stray from the South Fork Eel River to the Mattole River. Like when coho salmon stray as smolts from the Klamath on fresh water plumes (affected by the dams that negatively impact our salmon by "regulating flows of fresh water").

Water is life, and salmon are life and food for the people and animals. The Marshall Ranch streamflow enhancement project is focused on allowing oversummering smolt coho salmon, steelhead and some oversummering chinook salmon (I have found in my downstream migrant traps on Sproul Creek on Barnum Timber Co. lands now transferred to Green Diamond). The additional flows are essential to keeping our salmon/steelhead alive. And Redwood Creek is essential to our salmon/steelhead.

Redwood Creek has a large population and water withdrawls for domestic and agricultural use have resulted in diminished flows. In addition to the drought there is not enough water to go around. And salmon/'steelhead/amphibians are suffering due to the loss of water in the stream channel of Redwood Creek. This project has undergone a lot of community input and has been reduced in scope due to concerns of downstream residents. It has been adjusted in size to address community concerns and now needs to move forward.

I have spent time building and setting traps on Redwood Creek as part of the Eel River Salmon Restoration Project in the early 1980's till our small scale hatchery program was discontinued in 2005. As part of our program habitat restoration, monitoring of fish/amphibian populations and a salmon in the classroom program education project (using natal Redwood Creek chinook salmon, coho salmon and steelhead eggs) to allow students to hatch, rear and release "their" fish back into Redwood Creek.

In addition to the recent acquisition of property in Upper Redwood Creek (locally called Pollack Creek) will allow additional water to be provided to Redwood Creek and in addition to the Marshall Ranch Streamflow Enhancement Project; PLN-2019-15661 will hopefully keep our salmon and amphibian populations viable into the future.

In recent years we have lost our salmon in Salmon Creek. One student at Salmon Creek Community School (where we put Redwood Creek salmon eggs in a non-grid tied solar powered salmon incubator tank) asked "what will we call Salmon Creek when the salmon go extinct". Sadly we now face that reality. salmon returning to Salmon Creek in many years.

So now the salmon are returning to the South Fork. People are reporting both chinook and coho salmon passing up river. We have an opportunity to keep the salmon alive and maybe one day the salmon will again stray into Salmon Creek and it will be known for the salmon for which it was named...

I SUPPORT THIS STREAM ENHANCEMENT PROJECT.

Harry Vaughn
PO Box 589
Miranda, CA 95553
mrhvaughn@gmail.com
Salmon Creek Southern Humboldt Co.

Our creek was named for salmon... hopefully one day the salmon will return and this project gives me hope that within my lifetime they will....

November 22, 2021

To: The Humboldt County Planning Director, Planning Staff, and Planning Commissioners

From:
William Eastwood
Co-Director
Eel River Salmon Restoration Project
P.O. Box 71
Redway, CA 95560

Re:
I am writing to encourage you to approve the Mitigated Negative Declaration for the Salmonid Restoration Federation's Marshall Ranch Streamflow Enhancement Project PLN-2019-15661, SCH # 2019109088.

Writer's qualifications:
I'm a geologist with a master's degree from the University of California at Berkeley. As co-director of the Eel River Salmon Restoration project I have 30 years-experience carrying out salmonid habitat improvement projects, erosion control, slide stabilization, fish monitoring, watershed planning, and salmon rearing. The majority of our projects have been in the Redwood Creek Watershed. Recently I've done five years of low water stream flow monitoring for the present SRF Redwood Creek Project. I live in the watershed.

Statement:
Over the last year my original criticisms of this project in my testimony letter to you on 12/7/2020 have been eliminated. The project planners have reconfigured the project to eliminate neighbor's safety concerns by developing plans for a total of four smaller augmentation ponds, none of which threaten the safety of neighboring homes. Two of these ponds would be upstream of the Marshal Ranch component of the project in the headwaters of Redwood Creek, where they would supply increased summer flow to critical spawning and rearing salmonid habitat. Overall this is a very good project that will supply much needed summer flows for salmonid rearing. This project will help eliminate the sad sight of many fish laden pools drying up in the summer.

Sincerely,

William Eastwood

William Eastwood
ERSRP Co-Director
707-923-9109

Re: Marshall Ranch Streamflow Enhancement Project; PLN-2019-15661

November 21, 2021

Dear Humboldt County Planning and Building Department,

I am writing to provide background and support for the goals of the Marshall Ranch Flow Enhancement Project, drawn from my experience as Water Program Director at Sanctuary Forest Inc. and our flow enhancement work in the Mattole headwaters over the last 15 years. Additionally, I am a fourth generation resident of the Mattole headwaters, and grew up learning about solutions for water scarcity from my Dad, Bob McKee.

Similar to Redwood Creek, the Mattole headwaters has experienced extreme summer low flow conditions over the last 2 decades, impacting fish and wildlife as well as the human community. Low flows were recognized by CDFW and NOAA fisheries as the greatest threat to the survival of juvenile coho salmon over a decade ago. Juvenile steelhead are also impacted, with thousands of fish perishing as pools disconnect and dry up in drought years- 18 out of the last 22 years. In our rural communities, people rely on springs, creeks and rivers for their water supply and many families have had to truck in water or go without. The threat of catastrophic wild fire has also increased, and water supplies for fighting fire are scarce.

Sanctuary Forest, along with many collaborating restoration groups, agencies, and the Mattole community, is working to develop strategies for enhancing flows, which include storage and forbearance, forest thinning (to reduce evapotranspiration and improve forest health), infiltration of runoff from road systems, wetland enhancement, off-channel storage/infiltration, and instream restoration. We have developed and implemented several pilot projects, and have learned through careful monitoring and assessment that the strategy proposed by the Marshall Ranch Flow Enhancement Project is critically necessary for improving mid to late summer flows, particularly in extreme drought years. This strategy utilizes large-capacity pond storage with piping to the creek to directly augment flows during the low flow months. This approach differs very much from groundwater recharge projects in that the timing of flow enhancements can be controlled to convey water to the stream when it is most needed. Groundwater recharge projects can increase the amount of groundwater storage available to the stream, but in our experience, most of the groundwater drains by mid-summer and the streams still dry up in late summer.

We have participated in discussions with the Redwood Creek community, Salmonid Restoration Federation and Stillwater Sciences over the past 2 years with the aim of building a shared understanding of low flow problems and the importance of working together to address these problems. We are very impressed by the commitment and hard work demonstrated by the project proponents and the Redwood Creek community to develop effective design alternatives that address the potential risks of the original design. The evolution of the project is an example of how we can work together to address climate change and drought and create a dialogue that supports culture change and a shared commitment to restoring our watersheds. We are very supportive of the current design approach and are now developing similar flow augmentation projects in the Mattole headwaters.

Climate change and longer hotter dry seasons, land use impacts and water diversions are all significant factors contributing to extreme water scarcity and fire hazard throughout our state. With the urgent need for streamflow enhancement projects, we hope for increased collaboration with state and local governments and our communities. The Marshall Ranch project proposal has already been very effective at increasing community participation in the low flow issue and we hope that it will lead to increased community and county support for implementation projects needed to improve flows.

Sincerely,

Tasha McKee, Water Program Director, Sanctuary Forest Inc.