Staff Summary for June 17-18, 2026

3. General Public Comment for Items Not on the Agenda

Today's Item **Information ☒** **Action ☐**

Receive public comment regarding topics within the Commission's authority that are not included on either day of the June 17-18, 2026 meeting agenda.

Summary of Previous/Future Actions (N/A)

Background

This item is to provide members of the public an opportunity to address the Commission on topics not on the agenda. Staff may include written materials and comments received prior to the meeting as exhibits in the meeting binder (if received by the written comment deadline), or as supplemental materials and comments at the meeting (if received by the supplemental comment deadline).

General public comments are categorized as either: (1) requests for non-regulatory action or (2) informational-only. Under the Bagley-Keene Open Meeting Act, the Commission cannot discuss or take action on any matter not included on the agenda, other than to schedule issues raised by the public for consideration at future meetings. Thus, non-regulatory requests generally follow a two-meeting cycle (receipt and direction). Any non-regulatory request received at today's meeting will be evaluated by staff and considered by the Commission at its next regularly scheduled meeting (currently August 12-13, 2026) under "Non-regulatory requests from previous meetings."

Significant Public Comments

A total of 187 comments were received by the comment deadline; a table summarizing non-regulatory requests and other general public comments, with links to individual submissions and representative samples of form letters, are provided in Exhibit 1. In summary, the comments covered the following topics (with linked exhibit numbers within Exhibit 1 referenced) include the following:

1. Three new, non-regulatory request (exhibits 1.1 – 1.3)
2. Two aquaculture lease holders in Tomales Bay, indicating their desire to renew their leases (M-430-05 and M-430-06), in accordance with the lease requirements and California Fish and Game Code 15406 (exhibits 1.5 – 1.6)
3. A final report from an experimental fishing permit (EFP) holder, summarizing the outcomes of the EFP project, submitted to the Commission as required by Section 1022(c) of California Fish and Game Code (Exhibit 1.14)
4. Nearly 30 comments related to MPA (marine protected area) petitions (exhibits 1.3 and 1.16 – 1.31)
5. Over 130 comments and form emails related to bears, and/or supporting non-lethal methods for wildlife conflicts, (representative sample emails in exhibits 1.7 – 1.11)
6. Five emails, from two California state senators and 25 environmental non-governmental organizations, sharing copies of letters to the Governor, State Legislature, legislative committees and/or legislative caucuses, that advocate for

preserving critical positions at the Department, Commission, and/or State Water Resources Control Board, and against their elimination as proposed in the Governor's budget (exhibits 1.36 – 1.40)

7. Thirteen other general public comments covering a range of topics.

Recommendation

Commission staff: Consider whether to add any future agenda items to address issues that are raised during public comment.

Exhibits

1. Summary table of general public comments and 48 individual submissions and representative samples, received January 28 through June 4, 2026

Motion (N/A)

California Fish and Game Commission
June 17-18, 2026 Commission Meeting

Item 3. General Public Comments
Exhibit - Significant Comments received by 5 p.m. on June 4, 2026

Unless otherwise noted, "Department" refers to the California Department of Fish and Wildlife.

Subject	Exhibit Number	Date Received	Entity/Individual	Description	Number Rec'd
Non-Reg Request	1.1	5/18/2026	Kern River Boaters (KRB) and Kern Fly Fishers Council (KFFC)	KRB and KFFC ask the Commission to assess whether its public trust obligations are being met and whether the Department's position on the KR3 Project aligns with its strategic plan. They highlight analysis showing that the proposed flow plan would continue causing severe ecological harm and urge agencies to reject it in favor of higher, science-based California Environmental Flows Framework (CEFF) instream flows needed to protect fish, wildlife, water quality, and recreation.	1
Non-Reg Request	1.2	4/12-5/1/2026	Jeff Crumly	Requests the Commission form a committee to address multiple entities and environmental issues, citing significant chemical pollution in the San Juan Creek and nearshore environment - including glyphosate spraying, sewage-related impacts, and insufficient agency response.	1
Non-Reg Request - MPA Petitions	1.3	5/14/2026	City of Morro Bay	The Morro Bay City Council requests to be formally recognized as a stakeholder in all future proceedings related to petitions 2023-19MPA, 2023-20MPA, 2023-28MPA, 2023-33MPA, 2023-34MPA.	1
American Eagle Day	1.4	4/12/2026	Nancy Crandall	Reiterates a previously submitted non-regulatory request addressed to Governor Newsom asking the state to issue a proclamation recognizing June 20th as American Eagle Day.	1
Aquaculture Lease Renewal	1.5	1/28/2026	Chris Starbird, Starbird Mariculture	A current aquaculture lease holder has indicated a desire to renew their lease (M-430-06) in accordance with the lease requirements and Fish and Game Code 15406.	1
Aquaculture Lease Renewal	1.6	5/8/2026	Heidi Gregory, Owner, Tomales Bay Oyster Company (TBOC)	A current aquaculture lease holder, TBOC, has indicated a desire to renew their lease (M-430-05) in accordance with the lease requirements and Fish and Game Code 15406.	1

Subject	Exhibit Number	Date Received	Entity/Individual	Description	Number Rec'd
Bears, Wolves, Mountain Lions	1.7	4/12/2026	Shari Dalal	Seeks stronger protection for bears, wolves, and mountain lions as species decline from habitat loss, human expansion, and lethal management practices. Highlighting the need for non-lethal, science-based coexistence strategies, greater habitat protection, and rejecting the policies that allow the killing of endangered wolves.	1
Campaign/Form Letter; Bears	1.8	4/16-22/2026	Madeline Pratt and Darienne Hetherman	Two representative samples of 14 emails encourage the Commission to reject the proposal to increase black bear hunting tags, arguing that California's bears face significant environmental stressors, provide important ecological benefits, and should be protected through coexistence-focused, nonlethal management.	14
Campaign/Form Letter; Bears	1.9	4/18-6/1/2026	Mikayla Williams	A representative sample of 45 emails received, calling for a pause on lethal wildlife removals of bears and support for non-lethal coexistence strategies with bears, increased funding for community-based efforts, and greater transparency in reporting lethal actions.	45
Campaign/Form Letter; Bears	1.10	4/22-4/24/2026	Tara Dehdari, Director of Technology, Women for Wolves, and Atash Soltani	Two representative emails of five (5) emails received, opposing the states reliance on lethal wildlife management, including bears and wolves, and call for reforms prioritizing non-lethal methods, stronger coexistence strategies, improved public education, clearer public-safety criteria, greater transparency, and protections for bears, including limiting lethal actions involving bear sows with cubs.	5
Campaign/Form Letter; Wildlife Conflict	1.11	5/9-6/1/2026	Sebastien Aubin	A representative sample of 68 emails received calling for reforms to prioritize science-based, humane, non-lethal wildlife management and proactive conflict-prevention strategies, urging the Department to adopt ethical, sustainable practices that reflect broad public interests.	68
CESA Listings; Bumblebees	1.12	5/27/2026	Ryan Dishell	An environmental science student supports final endangered-species listing for four native bumble bee species under the California Endangered Species Act and urges the Commission to support final listings while continuing efforts in habitat protection, pesticide reduction, native plant restoration, and public education on pollinators.	1
Eucalyptus Trees	1.13	4/29/2026	Lorna Moffat	Raises concerns about the removal of thousands of eucalyptus trees in Monterey, asserting that officials and Cal Fire are inaccurately characterizing eucalyptus as a significant fire hazard. Citing research by fire scientist Jack Cohen, the letter contends that home-ignition risks, not the tree species, drive wildfire losses and that large-scale removal imposes environmental and fiscal costs, prompting a request for reconsideration of the program and broader use of Cohen's findings.	1
Experimental Fishing Permit	1.14	6/2/2026	Bart Chadwick, Sub Sea Sonics	SubSea Sonics, at the conclusion of their Experimental Fishing Permit, submits their report to the Commission as required by Section 1022(c) of California Fish and Game Code. They summarize their tests and evaluations of pop up fishing gear intended for use during Dungeness crab fishery closures for wildlife entanglement risk reduction. Their results have been documented in thirteen reports and informed RAMP decisions on alternative gear that aim to protect marine mammals while supporting the fisheries' economic sustainability.	1

Subject	Exhibit Number	Date Received	Entity/Individual	Description	Number Rec'd
Gray Fox	1.15	5/5/2026	Urban Wildlife Research Project (UWRP)	UWRP shares a new synthesis report on the status of California's gray fox, noting it is the first comprehensive statewide assessment in forty years and identifies significant data gaps, with Senate Bill 1135 potentially providing a pathway for improved species-level mortality reporting. The report is informational and offered for awareness given the Commission's role in furbearer management and species assessments.	1
MPA Petitions	1.16	5/14/2026	Everingham Bros Bait Company	Opposes Petitions 2023-24MPA and 2023-33MPA, stating that the proposed MPA fishing restrictions would severely limit live-bait catch locations, harm customers' operations, reduce company sales, threaten employee livelihoods, and negatively impact related industries such as tourism and local seafood.	1
MPA Petitions	1.17	5/14/2026	Port San Luis Commercial Fishermen's Association (PSLCFA)	PSLCFA opposes Petition 2023-28MPA_AM2 and the proposed Point Sal MPA closure, noting that it would reduce access to productive fishing areas and affect portions of local landings and revenue. The letter states that these changes could influence local fishing operations and coastal economies, and asks policymakers to reconsider the proposal.	1
MPA Petitions	1.18	5/15/2026	Trevor Rodgers	Supports the Department's position to deny the proposed increased closure of Cabrillo State Marine Reserve (Petition 2023-33MPA-AM), expressing concern that expanded closures would limit access to local seafood and reduce opportunities for future generations. Urges the Commission to consider the closure's broader impacts.	1
MPA Petitions	1.19	5/16/2026	Kimbra Philbrook	Related to MPA Petition 2023-24MPA_AM1 (Laguna Beach no-take SMCA): Opposes further shore-fishing restrictions in Laguna Beach and supports allowing limited fishing access in certain MPAs, stating these areas provide important, accessible opportunities for local shore-based anglers without harming fish populations.	1
MPA Petitions	1.20	5/19/2026	Toni Bangos, Regional Director, Coastal Conservation Association (CCA) California	Expresses appreciation to the Commission, Department staff, and meeting organizers for their thorough preparation, professional facilitation, and transparent management of recent regional MPA petitions meetings, noting the effective structure, public engagement opportunities, and dedication to California's marine resources.	1
MPA Petitions	1.21	5/19/2026	Peter Vroom, Deputy Director, City of San Diego Public Utilities Department	Raised a hand to speak at the May 19 meeting but was not called upon, and requests that the Commission deny the proposed MPA expansion in Petition 2023-33MPA due to conflicts with permitted ocean monitoring areas, potential multimillion-dollar infrastructure impacts, risks to the City's Pure Water Program, and insufficient scientific justification.	1
MPA Petitions	1.22	5/23/2026	Shari Hafer, Central Coast Women for Fisheries (CCWF)	CCWF urges the Commission to deny several new MPA petitions and instead explore alternative ways for tribes to engage in managing existing areas. The group, representing small-scale fishing families, opposes new MPAs along the Central Coast, particularly at Point Sal, arguing they would further harm declining fisheries and conflict with federal efforts to reduce regulatory burdens.	1

Subject	Exhibit Number	Date Received	Entity/Individual	Description	Number Rec'd
MPA Petitions	1.23	5/26/2026	Devora Hertz	Related to MPA Petition 2023-24MPA_AM1 (Laguna Beach no-take SMCA): A long-time resident near Thousand Steps Beach supports stronger protections, describing how the area has changed after access became public and reports significant environmental degradation from increased public access and unregulated marine harvesting and would like to see stronger protections and enforcement measures to reduce human impact.	1
MPA Petitions	1.24	5/27/2026	Andrew Kweder	One representative sample of six (6) emails received expressing support establishing the Mishopsno State Marine Conservation Area, noting it would protect key marine habitats, advance Chumash tribal co-management, strengthen ecosystem resilience, and align with statewide conservation goals.	6
MPA Petitions	1.25	5/28/2026	Joli DeLucia	An undergraduate student writing about marine conservation urges support for strengthening and expanding California's MPA network to protect declining kelp forests, noting their importance for biodiversity, habitat, and coastal resilience and calling for stronger protections, long-term monitoring, and science-based restoration.	1
MPA Petitions	1.26	6/3/2026	Archie Mitchell	Seeks Commission reconsideration of the current ban on shore-based recreational fishing at Surf Beach SMCA, noting its long history as a community fishing area, and asks the Commission to review the scientific basis for the ban, assess whether limited regulated access could meet conservation objectives, and evaluate adaptive management alternatives.	1
MPA Petitions	1.27	6/3/2026	Josh Christenson	Against creating a no-take reserve or expanding Duxbury Reef SMCA, stating that the area is already well protected and monitoring has shown no evidence of ecological collapse. The writer supports maintaining current boundaries, using least-restrictive management tools and including an alternative petition.	1
MPA Petitions	1.28	6/4/2026	Natalie Landreth, Counsel to the Santa Ynez Band of Chumash Indians	Counsel representing the Santa Ynez Band of Chumash Indians (SYBCI) regarding the MPA petitions further clarifies their comment made at the May 5-6 regional MPA Commission meeting that tribally led petitions and tribal take are grounded in long standing U.S. law recognizing Tribes as sovereign governments, therefore the law has always dealt with Tribes and members as a political category of persons and are not racial groups. The commenter emphasizes that the SYBCI's petitions aim to protect culturally and ecologically important places and that the Commission rests on a strong, well established legal foundation in this process for tribally led MPAs and tribal take.	1
MPA Petitions	1.29	6/4/2026	Kent Khtikian	A Duxbury Reef docent disputes the Bureau of Ocean Energy Management – Multi-Agency Rocky Intertidal Network (MARINe) survey cited by opponents of Petition 2023 32 MPA and has been submitted previously to the Commission, arguing it is outdated, taken from a low visitation site, and fails to measure the species or human impacts relevant to the petition. The commenter supports a compromise that preserves existing fishing rights while establishing stronger intertidal protections in the proposed northern and southern extension areas.	1
MPA Petitions	1.30	6/4/2026	Merit McCrea	Shares information about a recent webinar reviewing the first ten years of California's Marine Life Protection Act and the effectiveness of the state's MPA network, noting that the recording is now available on YouTube.	1

Subject	Exhibit Number	Date Received	Entity/Individual	Description	Number Rec'd
MPA Petitions	1.31	5/19-6/2/2026	Wendy Tochihara and Jeff Neubauer	Two representative emails of six (6) submitted oppose expanding or creating new MPAs along the California coast, arguing that existing MPAs are already extensive and do not address primary ecological issues such as pollution, runoff, and habitat degradation. The writers state that scientific evidence does not support additional closures, particularly for migratory species, and they urge the state to prioritize evaluating and enforcing existing regulations rather than pursuing various MPA expansion proposals and petitions.	6
Offshore Oil	1.32	4/17/2026	Steve Rebuck	Shares an article profiling efforts made by commercial diving veteran Lad Handelman to promote reopening offshore oil extraction near Santa Barbara as a way to reduce natural-seep pollution, generate revenue, and fund environmental projects. The article states that controlled extraction may offer both environmental and economic benefits while emphasizing the role of public education, collaboration, and scientific review.	1
Offshore Wind Energy	1.33	4/28-5/31/2026	Tom Hafer, Secretary, Morro Bay Commercial Fishermen's Organization	Three emails received between March 28 and May 31, 2026, shared published articles highlighting that the U.S. government is paying energy firms to cancel offshore wind projects amid turbine failures, legal concerns, and financial losses. Defective technology and stalled developments raise environmental and cost issues, while energy policies abroad also struggle with rising electricity bills.	3
Public Comment, Fish	1.34	4/27/2026	Phoebe Lenhart	Shares an article on a recent study that found fish experience prolonged and severe pain when killed by air asphyxiation during the catch process.	1
Sea Lions	1.35	6/3/2026	Kimberly Kelly	Shares a letter addressed to Ventura County Supervisor Vianey Lopez requesting permanent, protective signage to protect sea lion colonies after repeated disturbances to a sea lion haul-out site, establishing viewing boundaries, and considering a buffer zone or fishing restrictions, particularly during pupping season.	1
Senate Budget Proposal; Staffing	1.36	4/6/2026	Natural Resources Defense Council (NRDC) on behalf of 8 environmental non-governmental organizations (NGOs)	Eight (8) environmental NGOs, in a letter received during the April 15-16 meeting, inform the Commission that they have urged the Governor and Legislature to reinstate 164 Department staff positions as well as positions from other agencies proposed for elimination in the 2026–27 Budget. The NGOs emphasize that cutting these positions would hinder essential permitting, law enforcement, and land management work, undermine progress on renewable energy and climate goals, and impair the Department's ability to fulfill its mission to protect California's diverse species.	1
Senate Budget Proposal; Staffing	1.37	4/6/2026	Senator Scott Wiener and Senator Catherine Blakespear	Two senators, in a letter received during the April 15-16 meeting, asked the Legislature to reject the proposed eliminations at California Department of Fish and Wildlife (CDFW) and the State Water Resources Control Board, highlighting that these roles are essential for permitting, environmental compliance, and meeting the state's clean-energy and climate goals.	1

Subject	Exhibit Number	Date Received	Entity/Individual	Description	Number Rec'd
Senate Budget Proposal; Staffing	1.38	4/17/2026	Oceana on behalf of 16 environmental NGOs	Sixteen (16) environmental NGOs, in a letter received during the April 15-16 meeting, inform the Commission that they have urged the Governor and Legislature to designate funding and reinstate 164 Department staff positions, including Commission staff positions, proposed for elimination in the 2026-27 Budget. They emphasize that these staff are essential for enforcing environmental laws, managing fisheries, protecting marine habitats, preventing and responding to oil spills, and maintaining the state's Marine Protected Area (MPA) network. They warn that cutting these roles would undermine California's ocean conservation, climate resilience, public safety, and coastal economies, and therefore call on the Legislature to reject the proposed reductions.	1
Senate Budget Proposal; Staffing	1.39	5/4/2026	Safari Club International (SCI) California Coalition	SCI presents a letter addressed to The Honorable John Laird, Chair, Senate Budget and Fiscal Review Committee, and The Honorable Jesse Gabriel, Chair, Assembly Budget Committee, opposing the Governor's proposal to eliminate critical staff positions at CDFW, specifically the reduction of game warden positions suggesting that the budget cuts would weaken environmental enforcement, reduce public safety, and undermine conservation efforts.	1
Senate Budget Proposal; Staffing	1.40	6/3/2026	Safari Club International (SCI) California Coalition	SCI shares a letter urging Legislative Leadership and the Legislative Outdoor Sporting Caucus to support the Senate budget proposal that preserves critical positions at the CDFW and the CFGC. The letter stresses that retaining these positions, particularly game warden roles, is essential to public safety and conservation, and warns that eliminating them would harm enforcement and resource protection.	1
Soda Mountain Solar Project	1.41	4/24/2026	Safari Club International (SCI) California Coalition	SCI shares a letter addressed to Governor Newsom rejecting the Soda Mountain Solar Project due to long-term impacts on the Mojave ecosystem, citing significant ecological risks including disruption of bighorn sheep corridors, increased avian mortality, ineffective mitigation strategies, and fragmentation of habitat for the desert tortoise and burrowing owls.	1
Surf Fishing	1.42	5/18/2026	Bill Varney	Thanks the Commission for its work, provides background on a lifelong connection California's coast and a passion for surf-fishing, emphasizing that fishing fosters community and inclusivity across all backgrounds. A surf-fishing newsletter has been included.	1
Western Joshua Tree	1.43	4/17/2026	Ed Donnelly	Supports the goals of the Western Joshua Tree Conservation Act but expresses concern that its regulations are confusing and burdensome for homeowners, and impractical for wildlife protection. The writer also requests reconsidering the use of the word "take" to describe a plant, noting that the term is typically applied to animals.	1
Wild Horses	1.44	5/22/2026	Kathleen Hayden	Reiterates a previously submitted non-regulatory request asserting that the Coyote Canyon Heritage Herd [removed from the Anza-Borrego Desert State Park to private lands] should be recognized as a native species and protected resource, citing genetic and evolutionary evidence, legal and administrative obligations, ecological benefits, and insufficient scientific justification in current management plans, and requests a formal review and correction of the herd's status.	1
Wolves	1.45	4/19/2026	Ginger Moyles	Requests that wolves be delisted, noting that chronic depredation has made non-lethal methods ineffective, places undue burdens on residents in affected areas, and warrants giving those communities a primary role in shaping future management decisions.	1

Outlook

Kern River No. 3 Hydroelectric Project (FERC P-2290) — Minimum Instream Flow Memorandum

From Kern River Boaters <kernriverboaters@gmail.com>
Date Mon 05/18/2026 02:15 PM
To FGC <FGC@fgc.ca.gov>
Cc zavaleta[redacted]; Cornman, Ari[redacted] Hertel, Meghan[redacted]; Wildlife DIRECTOR <DIRECTOR@wildlife.ca.gov>; Jim Ahrens[redacted]

Dear President Sklar and Members of the Commission:

Attached is Kern River Boaters' and Kern River Fly Fishers Council's cover letter and *Minimum Instream Flow Requirements: Analysis and Proposal* (the "MIF Memorandum"), filed today with the Federal Energy Regulatory Commission in the Kern River No. 3 Hydroelectric Project relicensing (FERC P-2290).

The supporting analytical workbook (KR3_MIF_WB.xlsx, ~22mb) for the MIF Memorandum is available in the FERC eLibrary at: https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20260518-5022

The cover letter summarizes the basis for our request that the Commission consider whether the Department of Fish and Wildlife's KR3 position is consistent with the Department's Strategic Plan, the methodology the Department helped develop, and the public trust the Commission is charged to uphold — and provide such guidance to the Department as the Commission deems appropriate. Parallel letters are being submitted today to the Director of the Department of Fish and Wildlife, the Executive Director of the State Water Resources Control Board, and the Executive Officer of the Central Valley Regional Water Quality Control Board.

Further to my January exchange with Commissioner Zavaleta and the materials I provided to her at that time, the attached MIF Memorandum is the formal, finalized record I anticipated. We appreciate the Commission's continued engagement with this proceeding.

Respectfully,

Brett Duxbury
Director
KERN RIVER BOATERS
Box 1938
Kernville, California 93238
kernriverboaters.com
facebook.com/groups/kernriverboaters
760.376.1905

A CALIFORNIA PUBLIC INTEREST NONPROFIT

Elizabeth Duxbury, President
José Luis Pino, Vice President
Brett Duxbury, Secretary-Treasurer

PO Box 1938, Kernville, CA 93238
760.376.1905 • kernriverboaters@gmail.com

May 18, 2026

Eric Sklar, President
California Fish and Game Commission
715 P Street, 16th Floor
Sacramento, CA 95814

Re: Kern River No. 3 Hydroelectric Project, FERC Project No. 2290
Minimum Instream Flow Requirements: Analysis and Proposal

Dear President Sklar and Members of the Commission:

Kern River Boaters ("KRB")[1], joined by Kern River Fly Fishers Council ("KRFFC"), submits the attached *Minimum Instream Flow Requirements: Analysis and Proposal* (the "MIF Memorandum") for the Commission's consideration in connection with the Kern River No. 3 Hydroelectric Project relicensing. The MIF Memorandum and its supporting analytical workbook (KR3_MIF_WB.xlsx) were filed with the Federal Energy Regulatory Commission on May 18, 2026 and are available in FERC eLibrary under Accession No. 20260518-5022. We are providing this material in advance of the Department's Section 10(j) recommendations, so that the Commission has the full record before those recommendations are finalized.

The MIF Memorandum proposes minimum instream flows of 195–335 cfs for the 16-mile Wild and Scenic bypass reach of the North Fork Kern River below Fairview Dam, in place of Southern California Edison's proposed WR-1 schedule of 40–130 cfs. Our proposal is grounded in SCE's own California Environmental Flows Framework ("CEFF") analysis of bypass baseflow components—applying the functional-flow methodology the Department co-developed with the State Water Resources Control Board and the California Environmental Flows Working Group. The analysis also draws from SCE's own studies—paired-site temperature and dissolved oxygen monitoring, IFIM trout habitat modeling, and SSTEMP thermal modeling.

The Commission's Oversight Role. The Commission serves as trustee for California's fish and wildlife resources, including the fish populations of the North Fork Kern River. That

[1]Kern River Boaters is a California Public Interest Corporation with federal 501(c)(3) status, comprising approximately 2,300 members. KRB has been the primary advocate for the protection and enhancement of the natural and social environments in the Kern watershed for the past decade.

trusteeship carries an obligation to ensure that management decisions—including positions taken in FERC proceedings—reflect the best available science. The Commission also provides policy direction to the Department of Fish and Wildlife. Section 10(j) of the Federal Power Act directs FERC to include the Department's recommendations unless found inconsistent with the FPA, with any deviation explained in writing. 16 U.S.C. § 803(j)(2). The weight of those recommendations—and FERC's ability to give effect to the public-trust resources at stake—depends on their consistency with the Department's own science-based commitments, which the Commission oversees.

Documented Harm to the Fishery. SCE's own monitoring documents a fishery in collapse. Trout populations in the bypass reach have declined 97–99 percent under the existing flow regime (MIF Memorandum at § III.A). The underlying physical drivers are also in the record: dissolved oxygen falls below the Basin Plan's 8.0 mg/L cold-water floor on 61 percent of paired summer days mid-bypass—including 100 percent of days in July through September once the Project diverts the bulk of inflow (*id.* at § III.C). Water temperatures exceed SCE's own 20°C trout-growth threshold (daily mean) on 64–75 percent of summer days at the mid- and low-bypass monitoring sites, and the 24°C acute-stress threshold (daily maximum) on 62 percent of low-bypass summer days, compared with 36 percent and 5 percent respectively at the upstream control site (*id.* at § III.B). The harm extends to the native fish assemblage: hardhead has not been detected in the bypass reach since 1998; Sacramento pikeminnow densities have been "consistently low under the current license period"; and Sacramento sucker biomass declined approximately 98 percent over the current license period (*id.* at § IV). WR-1's premise that warming would benefit native fish fails on the data: the species individually identified as the warming beneficiary is not present, and the warm-water natives that remain are biomass-collapsed under conditions already within their preferred temperature range. This points to inadequate flows, not temperature, as the limiting mechanism. Allocating water already arriving at Fairview Dam to bypass flows would more than double the share of days that satisfy CEFF baseflows—from 31 percent observed to 67 percent achievable on present hydrology (*id.* at § IV.C).

Alignment with the Department's Own Framework. The Department's institutional record points consistently toward CEFF-based flows for KR3. The Department's 2022 Strategic Plan for Trout Management commits the Department to identifying and correcting flow impairments at dam-affected trout waters under § 5937 and the public trust. In the Devil Canyon Project (FERC P-14797), where the licensee declined to complete the requested downstream functional-flow study, the Department performed its own CEFF analysis and recommended that the results be "immediately implemented," with refinement through an Instream Flow Determination Plan. The Department's recent FERC filings extend the same framework to CEQA/§ 401 review. *Id.* at § VII.B (CDFW). KR3 presents a stronger record for action than Devil Canyon: SCE has completed the CEFF analysis, and that analysis identifies three of five functional flow components as altered. The Department's preliminary positions on KR3, however, have not advocated

for CEFF-based flows—a position in tension with the Department's CEFF practice elsewhere and with the Strategic Plan commitments the Commission oversees.

Our Request. KRB and KRFFC respectfully request that the Commission consider whether the Department's KR3 position is consistent with the Department's Strategic Plan, the methodology the Department helped develop, and the public trust the Commission is charged to uphold, and provide such guidance to the Department as the Commission deems appropriate. To support that review, the MIF Memorandum and its supporting workbook make every calculation reproducible from source data through live formulas; the Commission and SCE are invited to verify any number.

Parallel letters are being submitted today to the Director of the Department of Fish and Wildlife, the Executive Director of the State Water Resources Control Board, and the Executive Officer of the Central Valley Regional Water Quality Control Board. We appreciate the Commission's engagement with this proceeding and welcome continued dialogue as the Commission considers its role.

Respectfully submitted,

/s/ ED
Elizabeth Duxbury, President

/s/ JLP
José Luis Pino, Vice President

/s/ BD
Brett Duxbury, Secretary-Treasurer

ATTACHMENTS

A: KR3_MIF_MEMO.pdf—Minimum Instream Flow Requirements: Analysis and Proposal

B: KR3_MIF_WB.xlsx—Supporting analytical workbook (22mb); available via FERC eLibrary at https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20260518-5022

cc: Darius W. Anderson, Vice President, California Fish and Game Commission
Jacque Hostler-Carmesin, Commissioner, California Fish and Game Commission
Samantha Murray, Commissioner, California Fish and Game Commission
Erika Zavaleta, Commissioner, California Fish and Game Commission
Ari Cornman, Wildlife Advisor, California Fish and Game Commission
Meghan Hertel, Director, California Department of Fish and Wildlife
Kern River Fly Fishers Council

MINIMUM INSTREAM FLOW REQUIREMENTS

Analysis and Proposal

Kern River No. 3 Hydroelectric Project

FERC Project No. 2290

May 2026

Submitted by Kern River Boaters
and Kern River Fly Fishers Council

For the Attention of:

Federal Energy Regulatory Commission

United States Forest Service, Sequoia National Forest

United States Department of the Interior, Office of Environmental Policy and Compliance

United States Fish and Wildlife Service

United States National Park Service

California Department of Fish and Wildlife

California State Water Resources Control Board

Central Valley Regional Water Quality Control Board

California Fish and Game Commission

Technical Contact

Brett Duxbury • Kern River Boaters

760.376.1905 • kernriverboaters@gmail.com

DECISION MEMORANDUM

What We Ask. Require CEFF-based minimum instream flows of 195–335 cfs for the 16-mile Wild and Scenic Kern River No. 3 bypass reach (FERC P-2290) on the North Fork Kern, replacing SCE's proposed WR-1 schedule of 40–130 cfs. Require CEFF-based fall pulse flow pass-through when inflow exceeds 500 cfs during October 1 through December 15. CEFF flows are the conservative middle path: they require neither full natural inflows, nor decommissioning, nor bypassing the project's 600 cfs diversion capacity. They ask only that the project pass the median seasonal baseflows that SCE's own CEFF analysis identifies as ecological flow criteria, plus a fall pulse trigger. SCE's WR-1 proposal—which leaves the bypass reach 49-87% below those baseflow medians despite documented ecological degradation—is the outlier proposal in this record.

Who Can Act. Seven agencies have authority to require or recommend these flows. The table below identifies the legal hook, requested action, and key record support for each.

Why Now. This is a new 50-year licensing decision. The current license expires in November 2026. SCE has filed its Final License Application with a proposed flow regime (WR-1) that would maintain—and in summer months reduce—minimum flows. Each agency's window for shaping license conditions is now open and time-limited. WR-1 fails to satisfy CEFF ecological criteria and reduces July–August MIFs from 130 cfs to 100 cfs—worsening the damaged river ecology. The license should not lock in a provenly inadequate flow regime for two more generations.

What the Record Shows. Our evidentiary case is built almost entirely from SCE's own relicensing studies. SCE's CEFF analysis confirms three of the five functional flow components for the North Fork Kern bypass have been altered by the KR3 diversion. SCE's fish surveys document a 97–99% trout population collapse in the bypass. SCE's water quality monitoring shows dissolved oxygen below the Basin Plan 8 mg/L objective on 61% of paired summer (June-September) days—100% of days in July–September—and temperature above the 20°C growth threshold on 64–75% of paired summer days. SCE's trout IFIM/PHABSIM modeling shows CEFF flows fall on the optimum plateau of the habitat curve; WR-1 flows fall on its steep, limiting portion. SCE's SSTEMP model predicts CEFF flows would cool the bypass reach 2.2-2.5°C in peak summer. The hydrology shows CEFF baseflows are physically achievable on 67% of days, with only a 17% reduction in mean divertible capacity. The project operates at a financial loss of $1.5–2.3M/year and holds a Net Qualifying Capacity of 12.5 MW—0.020% of California's 61,962 MW resource adequacy portfolio.

WR-1's stated rationale (warming benefits warm-water natives) collapses on SCE's own data: hardhead is absent from the bypass since 1998 (SCE concedes it "disappeared . . . over the current license period," SCE 2025a at 39); Sacramento pikeminnow's optimum is

15°C—well below current bypass summer temperatures; Sacramento sucker biomass collapsed 98% over the current license despite current bypass temperatures sitting within its 20–25°C preferred range. SCE has not shown that additional warming would remedy native-fish decline; the record points to flow, habitat, and water-quality stress as the limiting mechanisms—and WR-1 reduces the binding summer flows that drive them.

Justification has shifted across license cycles. SCE's premise for the current license was that operations supported a cold-water trout fishery. SCE 1991a at E-3-2. Under those operations, the bypass trout population has collapsed 97–99%, with SCE now conceding declining recruitment. SCE 2024d at E.4-58. In 2017, SCE denied any evidence that project operations caused observed fish declines. SCE 2017a at 5-1. In 2025, SCE conceded that operations drive the temperature and DO mechanisms that affect those fish. SCE 2025a at 38. The 2024 FLA pivots accordingly: WR-1 is now justified as warming for hardhead—a species absent from the bypass since 1998. The substantive operations remain constant; the rationale changes as each prior rationale fails.

What Happens if the Agencies Don't Act. A new license issued with WR-1 flows will lock in for another half-century the conditions that have severely degraded this river's fishery, while SCE further reduces summer flows during the period of peak ecological stress. The Wild and Scenic River's Outstandingly Remarkable Values (scenic, recreation, and wildlife) will continue to degrade. Chronic Basin Plan exceedances will persist without remedy. And conditions for even a put-and-take trout fishery will often preclude stocking and routinely stunt and even threaten the fish that have been stocked. It will also lock in the collapse of the wild trout population that existed at the start of the present license term, with no hope of improvement.

AGENCY ACTION MATRIX

Agency	Authority	Requested Action	Key Record Citation	Why This Agency
U.S. Forest Service	WSRA §7 (non-degradation), §10(a) (enhancement); FPA §4(e) (mandatory conditions)	Impose CEFF-based MIF as §4(e) condition; reject WR-1 as inconsistent with ORV protection and enhancement	SCE 2024b at WR-2 28–30 (CEFF alteration); SCE 2024e Table B-3 (fish collapse); USFS 1994a at Purpose and Need - 2 (ORV categories)	Administers this WSR segment. §4(e) conditions are mandatory—FERC cannot override. The 1995 Plan directs management to "improve water quality for optimal trout production."
SWRCB / CVRWQCB	CWA §401 certification; Basin	Condition 401 cert on CEFF MIF, or	MIF WB at DO_Summary, Table 1 (61% DO	Should not certify without enforceable conditions addressing

	Plan §§3.1.6, 3.1.17	withhold certification; require SCE to demonstrate WR-1 compliance	objective-exceedance rate); MIF WB at Temp_20C_Sum_S4, Table 1 (75% temp exceedance)	documented exceedances and project-caused degradation. WR-1 reduces July–August flows further.
CDFW	FPA §10(j) (fish & wildlife recommendations); Cal. Fish & Game Code §5937 (sufficient water for fish below dams)	Recommend CEFF MIF under §10(j); apply the CEFF methodology CDFW helped develop	CDFW 2025a at 7 (Vance letter applying CEFF elsewhere); CDFW 2022a at 28–29 (Strategic Plan for Trout)	CDFW co-developed CEFF. Strategic Plan commits to correcting flow impairments at dam-affected trout waters.
USFWS	FPA §10(j); Fish & Wildlife Coordination Act	Recommend CEFF MIF; invoke FWCA equal-consideration mandate	FERC 1995a at 24, 37 (Interior's 1996 MIF + adaptive temp recs); SCE 2024e (fish collapse validates 1996 warning)	Interior's 1995/1996 recommendations identified the resource concern; subsequent monitoring confirms it was material.
NPS	WSRA §10(a) ("shall assist"); FWCA	Support USFS/USFWS position; submit comments on recreation ORV	SCE 2024g at REC-1, 36 (250 cfs median boater preference); USFS 1994a at Purpose and Need - 2 (recreation ORV)	Co-signatory to 1995 Plan. Recreation ORV requires flows WR-1 cannot deliver.
CA Fish & Game Comm'n	Public trust oversight of CDFW	Urge CDFW to recommend CEFF MIF consistent with the Strategic Plan and CEFF methodology	CDFW 2022a (Trout Strategic Plan); CEFWG 2021a (CEFF framework CDFW co-developed)	Oversight authority over CDFW's positions in FERC proceedings.
FERC	FPA §§4(e), 10(a)(1) (comprehensive development standard)	Condition license on CEFF MIF; find WR-1 inadequate under 10(a)(1) balancing	KRB 2026a; CAISO 2025b (project loses $1.5–2.3M/yr, 12.5 MW NQC, 0.020% of CA RA capacity)	Developmental value is minimal; non-developmental values are exceptional and documented.

Each Agency Has an Independent Statutory Hook. The authorities listed above operate in parallel, not in series. The Forest Service's §4(e) duty does not depend on CDFW's §10(j) recommendation. CDFW's recommendation does not depend on accepting SCE's WR-1 characterization. The State Water Board's §401 obligation does not depend on FERC's §10(a)(1) balancing, and FERC's balancing cannot override §4(e) conditions or proceed in the absence of valid §401 certification. No agency need wait for another to act first; each has a separate legal basis and the same factual record will support all of them.

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I. INTRODUCTION AND SUMMARY OF PROPOSAL

SUMMARY

Problem: The run-of-river KR3 Project diverts up to 600 cfs from the 16-mile Wild and Scenic North Fork Kern bypass and has been obligated to provide minimum flows of just 40-130 cfs. SCE's own studies document 97-99% trout population collapse, chronic dissolved oxygen exceedances, and altered functional flow components under the state's environmental flows framework.

Proposal: Require CEFF-based minimum instream flows of 195-335 cfs—the baseflow criteria identified by SCE's own CEFF analysis.

Key Evidence: SCE 2024b (CEFF analysis); SCE 2024e (fish surveys); SCE 2024f (water quality data); MIF WB (supporting analysis).

A. The Commenting Parties

Kern River Fly Fishers' Council ("KRFFC") and Kern River Boaters ("KRB") respectfully submit these comments regarding minimum instream flows and environmental flow requirements for Southern California Edison's ("SCE") Kern River No. 3 Hydroelectric Project ("KR3" or "Project"), FERC Project No. 2290.

KRFFC is the oldest fishing organization on the Kern River, founded in the 1950s, with 100 members who fish the North Fork Kern River and its tributaries. For seven decades, KRFFC members have witnessed firsthand the changes to the river's fishery and have a deep institutional knowledge of conditions above and below Fairview Dam.

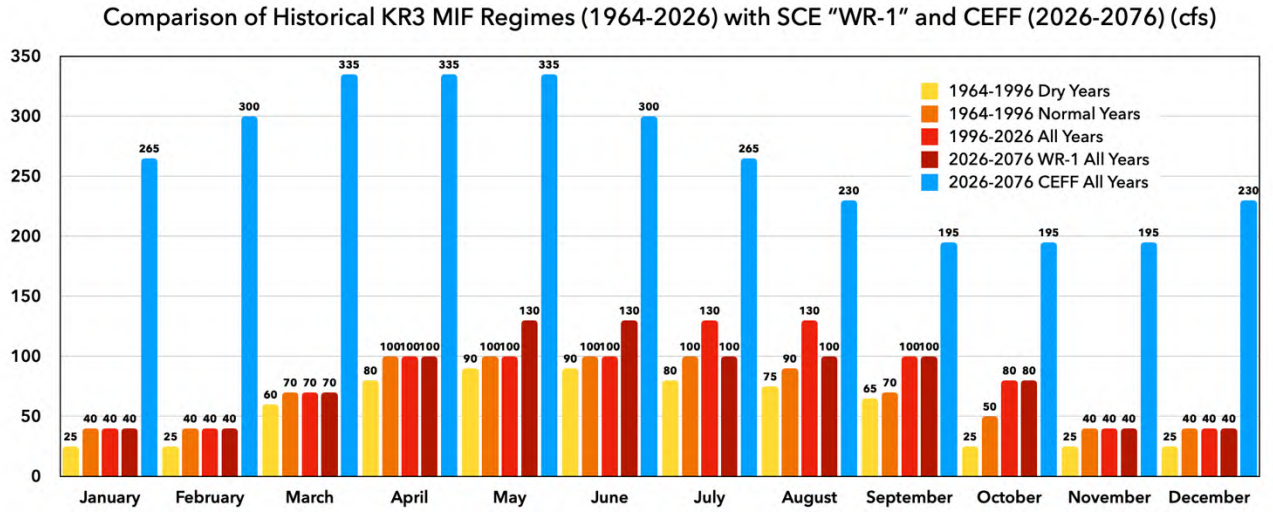
KRB is a California Public Benefit Corporation with federal 501(c)(3) status, founded in 2015, representing 2,300 noncommercial recreationists on the North Fork Kern River. KRB's members include kayakers, rafters, anglers, and other river users who depend on adequate instream flows for both ecological health and recreational opportunity.

Together, our organizations represent more than 2,400 individuals with direct, long-term interests in the North Fork Kern River. Our members live in the Kern River Valley, visit regularly from throughout California, and have spent decades observing, studying, and advocating for this river. We submit these comments to ensure that the managing agencies have before them the best available science and a complete record as they develop recommendations and conditions for the next license term.

B. The Project and the Problem

The run-of-river KR3 Project diverts water from the North Fork Kern River at Fairview Dam, transporting it through a tunnel and penstock to a powerhouse 16 river miles downstream, substantially decreasing the amount of water that travels the river. The 16-mile bypass reach between Fairview Dam and the powerhouse receives only the water that SCE is required to release as minimum instream flow, plus flows in excess of the instantaneous project diversion, which tops out at 600 cfs; Fairview Dam provides no storage. The effect of the diversion on the bypass reach is the focus of these comments.

For the past six decades, minimum instream flows ("MIF") in the bypass reach have been substantially below the flow levels SCE's own CEFF and habitat record now supports. The following figure compares those regimes with SCE's current "WR-1" proposal for KR3 relicensing, and our "CEFF" proposal based on the best contemporary environmental science, which we discuss below.



SCE 1991a at E-2-7; SCE 2024a at 5-36 & E.1-3.

The historical pattern is consistent: six decades of flow regimes that, varying in specifics, fall far short of the baseflows CEFF identifies, and a proposal for five more decades of the same—despite mounting evidence of ecological degradation in the bypass reach.

The current MIF, established in a 1995 Settlement Agreement, ranges from just 40 cfs in winter to 130 cfs in summer. These flows were not based on modern environmental flow science; rather, they were the product of a settlement negotiation in which the resource agencies accepted lower flows in exchange for a $2.5 million fisheries trust fund. SCE 2006a at 2-3, 10 & 11; SCE 2024a at 5-39 & 5-40.

The consequences of this chronic underwatering are documented in SCE's own relicensing studies:

- Trout populations in the bypass reach have collapsed by 97-99% since 1998, while populations immediately upstream of the dam have remained stable.
- The native fish community—including Sacramento sucker (most abundant in the bypass reach at designation, USFS 1994a at Affected Environment - 83), hardhead, and pikeminnow—has experienced concurrent declines under the current flow regime.
- Dissolved oxygen in the bypass reach falls below the Basin Plan objective of 8 mg/L on 61% of summer days—reaching 100% every month from July through September—while the upstream control site exhibits far fewer such days.
- Water temperatures in the bypass reach exceed SCE's own stated thresholds for trout growth stress on a substantial fraction of summer days. Project causation is strongly supported by three independent lines of evidence: (1) paired-site comparison isolating the diversion effect; (2) flow–water quality regressions ($R^2 = 0.68–0.69$, $p < 0.001$); and (3) seasonal on/off correspondence between diversion and impairment. Every dataset, model, and biological threshold cited in this memorandum was produced, commissioned, or adopted by SCE or the regulatory agencies; the commenters' contribution is limited to analyzing what SCE's own record shows.

This is a Wild and Scenic River. Three categories of Outstandingly Remarkable Values were identified: scenic, recreation, and wildlife. USFS 1994a at Purpose and Need - 2. These include "fishing, camping, picnicking, Whitewater boating, hiking, driving for pleasure, and enjoying the scenic beauty." USFS 1994a at Affected Environment - 61. The record supports a finding that the current MIF regime is contributing to degradation of those values.

The multiagency 1995 Upper Kern Basin Fishery Management Plan—issued by the United States Forest Service ("Forest Service"), California Department of Fish and Wildlife ("CDFW"), and the United States Department of the Interior ("Interior")—recognized that "the Kern River in this reach is capable of producing a self-sustaining wild trout fishery when water temperature and flows are improved." USFS et al. 1995a at IV-4; see also USFS 2023a at 190 (reaffirming Plan's continuing guidance). That finding remains true. We now have thirty years of additional data documenting what happens when flows are not improved.

The dispute in this proceeding is not over data collection. SCE collected the temperature, dissolved oxygen, hydrology, and diversion data summarized below. The dispute is over analytical presentation. SCE's FLA presents much of the water-quality record as monthly means, broad seasonal descriptions, and whole-year summaries. This memorandum

evaluates the same data at the scale required by the applicable resource questions: daily-minimum DO for a "shall not be less than" standard; daily-mean and daily-maximum temperature for chronic growth and acute thermal stress; paired upstream/downstream comparisons to isolate project effects; and seasonal windows when impairment occurs. The same dataset looks materially different when analyzed at the scale at which fish, water-quality standards, and license-condition compliance experience it. Section IX.C develops the analytical differences in detail.

C. Summary of Proposal

This memorandum recommends CEFF-based minimum instream flows as the enforceable remedy for the impairments documented in SCE's own record. It does not ask the agencies to adopt CEFF because CEFF is binding law. It asks them to reject WR-1 because WR-1 does not remedy the altered functional flow components SCE's own CEFF analysis identifies—dry-season baseflow, wet-season baseflow, and fall pulse magnitude—and does not address the temperature, dissolved oxygen, habitat, and fishery impairments documented in the record. CEFF-based MIFs are the only enforceable flow schedule identified in this record directly tied to those altered components. *If the agencies reject CEFF, they should identify another enforceable flow regime that corrects the same impairments.* What the record does not support is a new long-term license that carries forward WR-1's 40–130 cfs regime, reduces July–August flows during the critical season, and leaves the altered flow components uncorrected.

The CEFF schedule proposed in this memorandum is calibrated to the three of five functional flow components SCE's own analysis identifies as altered. It does not require restoration of the full natural hydrograph, elimination of the project's diversion, or permanent bypass of the project's full diversion capacity. The only full pass-through element of our proposal is the limited, storm-timed fall-pulse condition described below, tied to SCE's own altered fall-pulse finding. CEFF flows are presented as the enforceable flow regime the record supports—a baseline addressed to the altered components, not a self-executing legal mandate, and not a guarantee that biological recovery will follow. The flow case rests on the ecological record; the project's developmental value is addressed in § VI.A only because the FPA § 10(a)(1) public-interest balancing requires the Commission to weigh it, and on this record the developmental side of that balance is modest. What we ask is narrower: that any new license include an enforceable flow schedule that addresses the altered CEFF components and the documented impairments in SCE's own record. The procedurally distinct question whether decommissioning should be included as a NEPA alternative for the Commission's analysis is the subject of KRB's separately filed motion. KRB 2026b.

Applying CEFF to SCE's own hydrological data yields the following proposed MIF schedule:

Month	Proposed MIF (cfs)	Season
October	195	Dry-season baseflow
November	195	Dry-season baseflow
December	230	Dry-to-wet transition
January	265	Dry-to-wet transition
February	300	Dry-to-wet transition
March	335	Wet-season baseflow
April	335	Wet-season baseflow
May	335	Wet-season baseflow
June	300	Wet-to-dry transition
July	265	Wet-to-dry transition
August	230	Wet-to-dry transition
September	195	Dry-season baseflow

In addition, we propose that the license require:

- **Fall pulse flows**: When daily mean inflow to Fairview Dam first exceeds 500 cfs during October 1 through December 15 of any water year, SCE shall pass the entire inflow to the bypass reach until either (a) daily mean inflow has remained below 500 cfs for 24 consecutive hours, or (b) seven consecutive days of pass-through have elapsed, whichever is later. No more than one such pulse pass-through is required per water year.

We urge the managing agencies to fulfill their statutory obligations to protect this river's fishery, water quality, wildlife, recreational, and scenic values by requiring minimum instream flows consistent with the California Environmental Flows Framework. These flows are scientifically justified, hydrologically achievable, and legally supportable. The sections that follow present the evidence.

II. SCIENTIFIC BASIS FOR CEFF-BASED MINIMUM INSTREAM FLOW

SECTION SUMMARY

SCE's own CEFF analysis confirms the bypass reach operates in an "altered" condition for three of five functional flow components:

- Dry-season baseflow: 71% below natural (56 cfs observed vs. 195 cfs)
- Wet-season baseflow: 73% below natural (91 cfs observed vs. 335 cfs)
- Fall pulse magnitude: 60% below natural

Independent analysis prior to SCE's study (Duxbury 2022a, 2024a) reached identical conclusions using the same methodology.

SCE's own 1991 habitat model confirms CEFF flows (195-335 cfs) optimize adult and juvenile trout habitat; WR-1 flows (40-130 cfs) fall on the steep, limiting portion of the habitat curve.

Sources: SCE 2024b at WR-2 28-30; SCE 1991a at E-3-63 to E-3-75; Duxbury 2022a, 2024a

A. The California Environmental Flows Framework

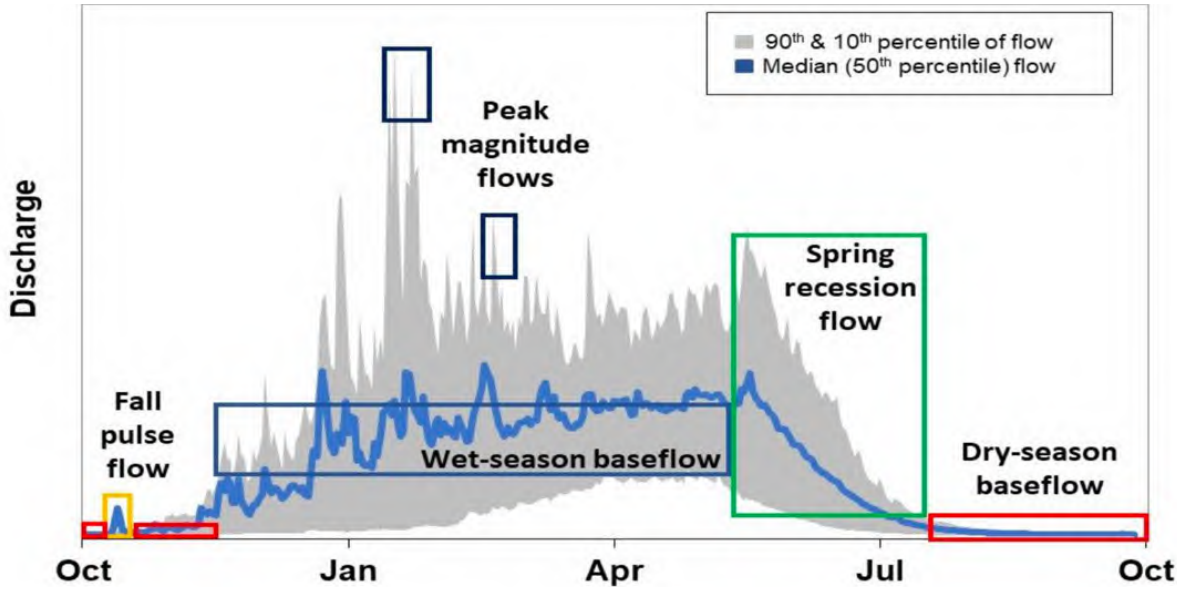
The California Environmental Flows Framework ("CEFF") represents the consensus methodology in California for determining environmental flow regimes. Developed by the California Environmental Flows Working Group—a collaboration of scientists from the California Department of Fish and Wildlife, the State Water Resources Control Board, The Nature Conservancy, UC Davis, and other academic and conservation partners—CEFF provides a consistent, scientifically defensible methodology for extending environmental flow protections to rivers throughout the state. CEFWG 2021a at ii & 1.

CEFF is grounded in the "natural flow paradigm," a scientific consensus holding that maintaining flow regimes approximating natural conditions is essential to sustaining healthy river ecosystems. The framework recognizes that river ecosystems evolved with—and depend upon—the natural variability of flows across seasons and years. Yarnell 2015a at 963-972.

Rather than focusing on narrow, isolated metrics that may conflict with one another, CEFF provides a holistic suite of five functional flow components that account for the seasonal and ecological variability essential to maintaining a river's ecological function:

1. **Fall Pulse Flow**: The first significant flow increase after the dry season, typically triggered by early-season storms. Fall pulse flows flush fine sediments, signal spawning migrations, reconnect habitats, and break summer thermal stratification.

2. **Wet-Season Baseflow**: The relatively stable, elevated flows that persist between storm events during the wet season (typically winter through early spring). Wet-season baseflows maintain longitudinal connectivity, support fish migration and spawning, and sustain riparian groundwater.
3. **Wet-Season Peak Flow**: High-magnitude flood events that scour and deposit sediments, maintain channel form, connect floodplains, and limit vegetation encroachment.
4. **Spring Recession Flow**: The gradual decline from peak snowmelt flows to summer baseflows. The rate and timing of spring recession provide cues for fish migration, support juvenile rearing, and allow riparian vegetation to track the declining water table.
5. **Dry-Season Baseflow**: The low but sustained flows during the dry season (typically late summer through fall). Dry-season baseflows maintain aquatic habitat connectivity, support cold-water species during thermal stress periods, and sustain the food web.



CEFWG 2021a at 9-10.

For each functional flow component, CEFF specifies metrics including magnitude, timing, duration, and (for spring recession) rate of change. These metrics are derived from either modeled natural flows in the California Natural Flows Database or, where available, observed unimpaired flow records. The framework then provides a methodology for assessing whether observed flows in a managed reach are altered from natural conditions—meaning the observed metric falls outside the 10th-90th percentile range of natural variability—and, if so, for developing ecological flow criteria to restore natural function.

B. SCE's CEFF Analysis Confirms Flow Alteration

At the urging of KRFFC, KRB, and the United States Forest Service, SCE conducted a CEFF Section A analysis for the bypass reach below Fairview Dam. SCE selected COMID 14971709 from the National Hydrography Dataset as representative of the location of interest, corresponding to the USGS gage immediately downstream of Fairview Dam. SCE 2024b at WR-2 27.

SCE identified six Ecological Management Goals for the bypass reach that include restoring riparian structure, maintaining native species abundance and richness, enhancing ecosystem conditions and functions, and protecting cold-water ecosystems and native fish populations. SCE 2024b at WR-2 24, Table 5.2-2.

SCE then compiled functional flow metrics for three flow scenarios: (1) predicted natural flows from the California Natural Flows Database; (2) observed unimpaired inflows to Fairview Dam; and (3) observed flows in the bypass reach below Fairview Dam. The results reveal systematic flow alteration in the bypass reach:

Flow Component	Metric	Predicted Natural (Median)	Observed Bypass (Median)	Alteration
Fall Pulse	Magnitude	506 cfs	200 cfs	60% reduction
Wet-Season Baseflow	Baseflow	335 cfs	91 cfs	73% reduction
Wet-Season Baseflow	Median flow	1,001 cfs	617 cfs	38% reduction
Dry-Season Baseflow	Baseflow	195 cfs	56 cfs	71% reduction
Dry-Season Baseflow	High baseflow	398 cfs	111 cfs	72% reduction

SCE 2024b at WR-2 28-30, Table 5.2-4; SCE 2024a at 7-129 to 7-137.

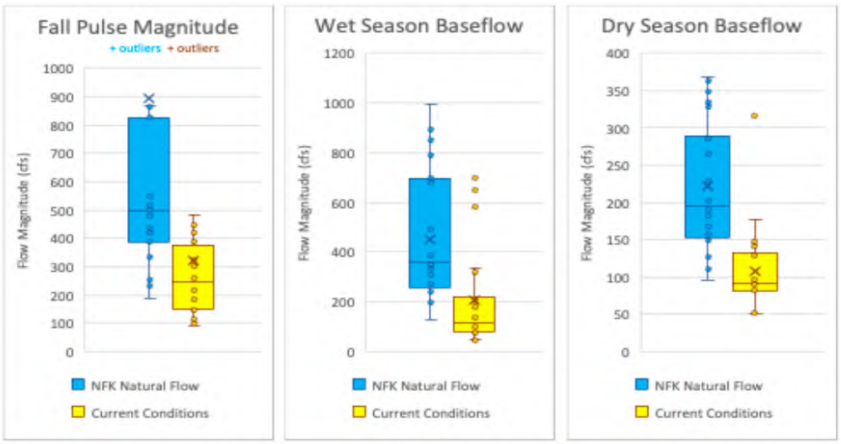
Based on the CEFF methodology for treating functional flow metrics, CEFWG 2021a at 53, SCE has found that the KR3 project alters *three of the five* CEFF functional flow components for the North Fork Kern—i.e., 60% of the "aspects of a natural flow regime that sustain ecological, geomorphic, or biogeochemical functions, and that support the specific life history and habitat needs of native aquatic species." CEFWG 2021a at 3. This is not a marginal deviation. SCE's own analysis—using the state's officially endorsed environmental flows methodology—confirms that Project operations have fundamentally altered the flow regime in ways CEFF predicts will impair ecological function. Stein 2021a at 6; Grantham 2021a at 1-2.

This 2024 CEFF finding aligns with what the multiagency record already established at the prior relicensing: the joint 1996 FERC-USFS Environmental Assessment quantified Fairview Dam diversion as reducing natural flow in the bypassed reach by 70–90% during fall and winter and by 30–60% during the April–June snowmelt. FERC 1996a at 22. Two analytical frameworks separated by three decades converge on the same conclusion.

CEFF's determination that a flow metric is altered is a finding that observed flows have departed from the range that supports essential ecosystem functions. The predicted consequence of a CEFF-science "likely altered" finding is that ecological functions are impaired and flows could be increased toward the natural range to correct that impairment. Stein 2021a. To the extent SCE has emphasized that "21 of the 24 [CEFF] functional flow metrics" are "likely unaltered," SCE 2024d at E.4-7, that framing is both arithmetically inconsistent with SCE's own findings and analytically mistaken. SCE 2024a at 7-129 & 7-130. CEFF instructs that a component should be treated as altered if *any* of its metrics are likely altered. CEFWG 2021a at 53. Component-level assessment is the appropriate frame, and SCE's own analysis shows three of five components for a functioning river—fall pulse, wet-season baseflow, and dry-season baseflow—are altered in the bypass. That is a broad alteration of the components CEFF identifies as necessary for ecological function.

C. Independent Analysis Validated SCE's Findings

An independent CEFF analysis by KRB President Elizabeth Ann Duxbury, M.S.—conducted prior to SCE's analysis—reached the same conclusions. Using observed flow data from USGS gages 11186000 and 11185500, processed through the eFlows Functional Flows Calculator developed by UC Davis, the analysis found that the bypass reach was operating in an altered condition for three CEFF functional flow components: fall pulse, wet-season baseflow, and dry-season baseflow. Duxbury 2022a at 28-30. Mrs. Duxbury reached the same conclusions in 2024 using flow data from the Natural Flows Database.

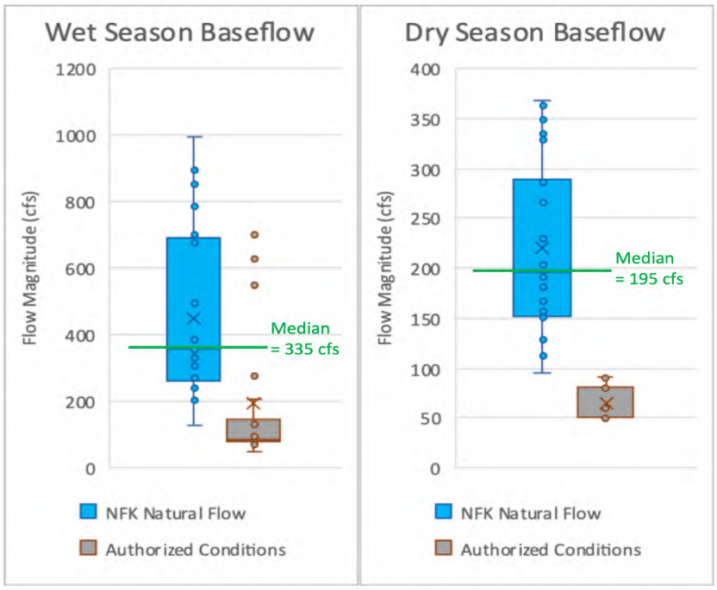


Duxbury 2024a at 5-7.

D. CEFF Baseflows Define Our Proposed MIF

Following the CEFF methodology—and consistent with CDFW's application of CEFF in other FERC proceedings, such as the Devil Canyon Project (FERC No. P-14797)—the median values of the wet-season and dry-season baseflow metrics serve as the foundation for our minimum instream flow recommendation:

- **Wet-season baseflow**: 335 cfs (median)
- **Dry-season baseflow**: 195 cfs (median)



Duxbury 2024a at 4, Figure 2; see also SCE 2024b at WR-2 28-30, Table 5.2-4 (confirming baseflows).

To translate these seasonal baseflows into a monthly MIF schedule, we apply the CEFF timing metrics and interpolate symmetric transitional flows between the dry- and wet-season baseflow medians during seasonal shifts. These intermediate monthly values are proposed as an implementation schedule, not separate CEFF metric outputs. The resulting proposed MIF schedule is:

Month	Proposed MIF (cfs)	Season	Rationale
October	195	Dry	Dry-season baseflow
November	195	Dry	Dry-season baseflow
December	230	Transition	Dry-to-wet transition
January	265	Transition	Dry-to-wet transition
February	300	Transition	Dry-to-wet transition

March	335	Wet	Wet-season baseflow
April	335	Wet	Wet-season baseflow
May	335	Wet	Wet-season baseflow
June	300	Transition	Wet-to-dry transition
July	265	Transition	Wet-to-dry transition
August	230	Transition	Wet-to-dry transition
September	195	Dry	Dry-season baseflow

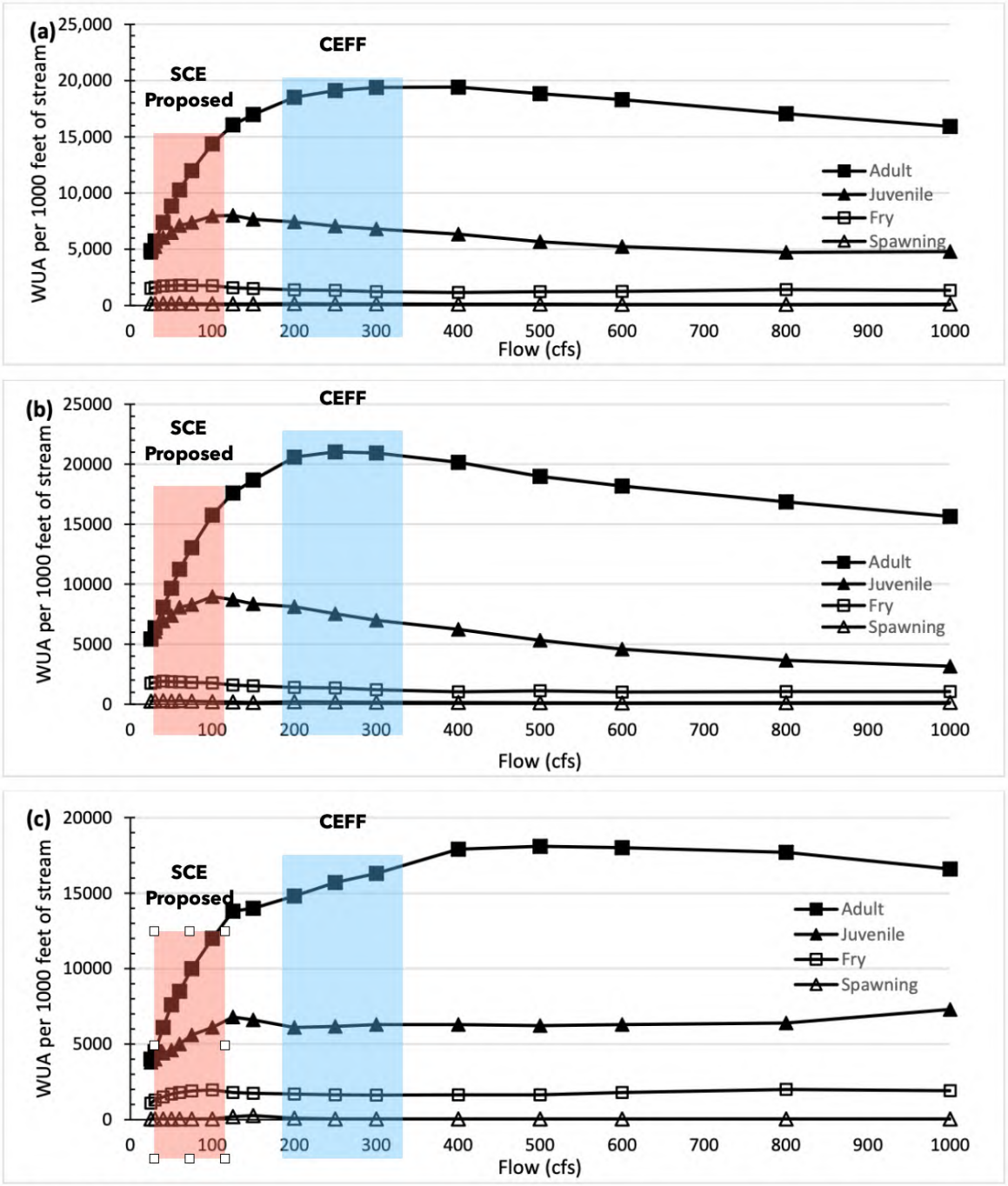
The symmetric transitional ramp-up (October-November at 195 cfs, then 230 → 265 → 300 → 335 cfs from December through March) and ramp-down (335 → 300 → 265 → 230 → 195 cfs from May through September) smooth the transitions between wet and dry season baseflows rather than imposing abrupt step-changes.

E. CEFF Flows Are Consistent with SCE's Own Habitat Modeling

SCE's 1991 IFIM/PHABSIM habitat model for the bypass reach independently confirms that CEFF-based flows fall on the optimum plateau of the trout WUA curve.

The IFIM study found that weighted usable area ("WUA") for rainbow trout is maximized at the following flows:

- **Adults**: >125 cfs, with WUA continuing to climb through ~300 cfs before plateauing
- **Juveniles**: 50-400 cfs
- **Fry**: ~60 cfs (though fry habitat is structurally limited regardless of flow)
- **Spawning**: Limited at all flows due to lack of suitable gravel substrate



Source: SCE, 1991

Figure 7.4-5. Weighted Usable Area Predicted for Rainbow Trout in the North Fork Kern River from (a) Fairview Dam to the KR3 Powerhouse (Full Reach), (b) Fairview Dam to Hospital Flat (Segment 1), and (c) Hospital Flat to the KR3 Powerhouse (Segment 2)—25 to 1,000 cfs.

SCE 2024a at 7-124 to 7-125; SCE 1991a at E-3-63 to E-3-75 (annotated).

The CEFF baseflow range of 195-335 cfs sits squarely on the plateau where adult habitat is at or near maximum and juvenile habitat remains essentially optimal. In contrast, SCE's proposed WR-1 flows of 40-130 cfs occupy the steep, limiting portion of the adult WUA curve—providing far less usable habitat than the channel's physical template could support if adequately watered.

F. Fall Pulse Flows

SCE's CEFF analysis identified fall pulse magnitude as "likely altered," with the natural median of 506 cfs reduced to just 200 cfs in the bypass reach. SCE 2024b at WR-2 28-30, Table 5.2-4.

Fall pulse flows serve critical ecological functions: they flush accumulated fine sediments from spawning gravels, provide migration cues for adult fish moving to spawning areas, reconnect isolated habitat patches, and break thermal stratification that develops during the dry season.

We propose that when daily mean inflow to Fairview Dam first exceeds 500 cfs (the natural median fall pulse magnitude) during October 1 through December 15 of any water year, SCE shall pass the entire inflow to the bypass reach until either (a) daily mean inflow has remained below 500 cfs for 24 consecutive hours, or (b) seven consecutive days of pass-through have elapsed, whichever is later. No more than one such pulse pass-through is required per water year.

This proposal:

- Is tied directly to natural storm events, preserving the ecological signaling function
- Uses the CEFF median magnitude (506 cfs) as the trigger, ensuring a meaningful pulse rather than a marginal increase above baseflow
- Is self-limiting: in dry years with few large storms, the obligation is limited by hydrology
- Requires pass-through of natural flow rather than a fixed release, ensuring the pulse magnitude matches natural conditions

G. Summary: SCE's Record Supports CEFF-Based Flows, Not WR-1

The scientific basis for CEFF-based minimum instream flows is robust and multiply confirmed:

1. **SCE's own CEFF analysis** validates that three of the five functional flow components for the bypass reach are operating in an altered condition: fall pulse, wet-season baseflow, and dry-season baseflow.

2. **Independent analysis** reached the same conclusions prior to SCE's study, using the same methodology and publicly available data.
3. **SCE's IFIM habitat model** confirms that CEFF baseflows (195-335 cfs) fall on the optimum plateau of the adult and juvenile trout WUA curve, while WR-1 flows (40-130 cfs) fall on its steep, limiting portion.
4. **The CEFF framework itself** was developed by California's fish and wildlife agencies specifically to provide consistent, scientifically defensible environmental flow recommendations—and has already been applied by CDFW in other FERC proceedings. CDFW 2021a.
5. **SCE has not provided support for WR-1**. SCE has not shown that WR-1 protects affected resources. SCE's own data and analyses, along with the state's own ecological flow framework, support CEFF—not WR-1.

H. CEFF Provides the Scientific Basis; the Agencies Provide the Authority

SCE has argued that CEFF is "not prescriptive" and that its "ecological flow criteria are used as a starting point in the structured decision-making process"—that Section A of the CEFF framework yields ecological flow criteria but does not itself establish minimum instream flows, and that actual recommendations must account for the broader "Section C" balancing of ecological, social, and management objectives. SCE 2024d at E.4-6 to E.4-8. SCE elsewhere disputes that the CEFF natural functional flow metrics 'represent effects or flow recommendations.' SCE 2024d at E.4-72. The agencies, not SCE, decide whether the ecological flow criteria warrant translation into license-condition flow recommendations.

SCE confuses what CEFF determines with who applies it. CEFF Section A identifies ecological flow criteria based on science. Section C contemplates management judgment about how to implement them. That judgment belongs to the agencies—CDFW, the Forest Service, FERC, and the Regional Board. Section C balancing is a sovereign exercise of conditioning authority, not a licensee's veto over the science.

Nothing in the CEFF framework prevents the agencies from adopting Section A baseflows as license conditions. The CEFF Technical Report specifically envisions that workflow. Where, as here, "non-flow limiting factors are not a concern, the user may only need to implement the steps in Section A to obtain ecological flow criteria for their study area. The Section A ecological flow criteria can be readily translated into environmental flow recommendations in section C . . . ." CEFWG 2021a at 7. The CEFF scientific framework identifies the ecological target; the agencies decide whether the public interest warrants meeting it. Where—as here—the ecological case is built on SCE's own findings (97–99% fish population collapse, chronic water quality exceedances, three of five flow components altered), and the developmental side of the balance is modest (0.020% of California's

resource adequacy capacity, a project already operating at a loss), any agency declining to adopt CEFF-based flows would need to identify a reasoned, record-based alternative that corrects the same altered components and documented impairments.

SCE's objection is not to the applicability of CEFF science to the bypass reach; it is to the flow consequences of applying that science. The framework's conclusion may be inconvenient, but the framework's science is not in dispute. SCE's own CEFF analysis confirms the alteration. SCE's own IFIM model confirms the habitat benefit. SCE's own SSTEMP model confirms the cooling. On this record, the burden falls on SCE to identify an enforceable flow regime that addresses the altered components and documented impairments. WR-1 does not.

III. EVIDENCE OF ECOLOGICAL IMPAIRMENT

The altered functional flow components identified in § II have produced documented ecological impairment in the bypass reach. The scientific case for CEFF-based flows is not merely theoretical. More than thirty years of monitoring data from the bypass reach document a pattern of ecological degradation that tracks directly with the chronic low-flow conditions imposed by Project operations. This section presents the evidence across multiple categories including fish populations, dissolved oxygen, water temperature, and sediment.

A. Fish Population Collapse

SUBSECTION FINDING

Rainbow trout populations at all three bypass reach monitoring sites declined 97-99% between 1998 and 2023, from 118-238 fish/acre to 2-3 fish/acre. The upstream control site (Above Fairview Dam) showed no decline over the same period: 28 fish/acre in 1998, 29 fish/acre in 2023.

Native hardhead have not been detected in the bypass reach since 1998.

Source: SCE 2024e at B-3 & B-4, Table B-3

The fish population data from SCE's periodic monitoring surveys (1989-2023) document a clear and consistent endpoint: by 2023, all three bypass reach sites below Fairview Dam have experienced severe declines in fish abundance and diversity, while the immediate upstream control site (Above Fairview Dam) returned to approximately its 1998 trout density by 2023—contrasting sharply with the bypass reach's persistent collapse.

The flow-dependent character of the bypass-reach fishery was visible by SCE's own designation-era data, which showed the bypass-reach fishery delivered half the angler return of the comparable upstream stocked reach. SCE 1991a at E-3-3.

Rainbow Trout: A 97-99% Decline

Rainbow trout populations in the bypass reach have collapsed from 118-238 fish per acre in 1998 to just 2-3 fish per acre in 2023. SCE 2024e at B-3 & B-4, Table B-3. This represents a decline of 97-99% at all three monitoring sites below the dam.

Stillwater discloses that 1998–2016 densities used observed counts while 2023 densities used population estimates that statistically correct for unobserved fish. SCE 2024e at Table B-3, note 1. The estimator change biases the 2023 numbers upward relative to comparable prior years; the headline 97–99% collapse is therefore conservative, and a comparable-method comparison could show even greater decline.

SCE and its consultants repeatedly sampled the same established monitoring locations using quantitative multi-pass electrofishing protocols (e.g., mark-recapture in 2016; depletion in 2023). These datasets support long-term density comparisons across the years:

Monitoring Site	1998 (fish/acre)	2023 (fish/acre)	Change
Above Dam			
Above Johnsondale Bridge*	113	3	-97%
Above Fairview Dam	28	29	+4% (stable)
Below Dam (Bypass Reach)			
Roads End	118	3	-97%
Goldledge	238	2	-99%
Hospital Flat	146	2	-99%

**See post, "SCE's 'Same Declines Upstream' Argument Fails."*

The spatial pattern implicates Project operations. The Above Fairview Dam site—immediately upstream of the diversion, subject to identical watershed conditions save for the diversion of flow—showed essentially stable trout density over the 25-year period (28 → 29 fish/acre). The bypass reach sites, receiving only the diminished flows left after diversion, collapsed.

Recovery is not theoretical: SCE's own monitoring documents it. In 2011, after a wet period, wild rainbow trout at Roads End reached 406 fish/km—the highest density ever recorded—with three age classes (0+, 1+, 2+) and active natural reproduction. Only one hatchery fish was detected among all trout captured. Condition factors were healthy (1.01–1.20). SCE 2012a at Tables 4, 6, and 7. The bypass reach demonstrably can support the fishery the 1995 multiagency Plan envisioned when flows are adequate. USFS 1995a.

Community Shift Toward Stress-Tolerant Species

Sacramento suckers remain numerically abundant in the bypass reach, but the population structure has shifted dramatically. The 2006 and 2016 analyses at Hospital Flat showed very high sucker numbers but dramatically reduced biomass compared to historic values, indicating the population is dominated by small, young fish—older adults have been lost. SCE 2007a at 36; SCE 2017a at 3-9, 4-9 & 4-10. By 2023, suckers remain dominant and show strong YOY recruitment, suggesting that current flow and temperature conditions favor tolerant sucker life histories over salmonid and cyprinid diversity. SCE 2024e at 12, 15, Figs. 3-2 & B-2. This pattern—loss of cold-water and sensitive species, persistence of warm-water tolerant species, juvenile-heavy age structure—is consistent with chronic flow-mediated thermal and habitat stress.

The absence of native trout does not relieve SCE of its obligations.

In 2017, SCE characterized the bypass reach as "still viable habitat for wild trout" based on western pearlshell mussel presence. SCE 2017a at 4-6. Six years later, the 2023 monitoring report captured so few trout at the three bypass electrofishing sites that "confidence intervals could not be calculated." SCE 2024e at 14. SCE cannot now invoke "viable habitat" as a forward-looking status without contradicting its own most recent monitoring report.

SCE argues there is "no ongoing instream-flow-related effect to wild trout" because no native trout inhabit the project vicinity and the bypass reach has been isolated from the upper watershed since fish ladders were closed in 1997. SCE 2024d at E.4-9. SCE frames its analysis as evaluating only the "recreational trout fishery and cold-water habitat."

This framing ignores the abundant *wild* trout at Roads End in 2011. SCE 2012a at Tables 4, 6, and 7. It is also legally irrelevant. The license must protect beneficial uses as designated in the Basin Plan (COLD and WARM freshwater habitat, regardless of native status); Outstandingly Remarkable Values as recognized in the Wild and Scenic designation (the recreation ORV encompasses fishing—historically understood as the trout fishery); water quality objectives that apply to the water column itself (DO ≥ 8.0 mg/L, narrative temperature standard); and the fishery resources actually present and managed in the reach, which include both stocked and nonnative wild rainbow trout. None of these legal obligations turns on whether the trout are genetically native. A 97–99% population collapse in a managed fishery on a Wild and Scenic River is a resource failure that triggers agency action regardless of the population's provenance.

SCE's "Same Declines Upstream" Argument Fails

SCE has suggested that rainbow trout declines occurred "both below and above Fairview Dam" at similar rates, implying factors other than Project operations are responsible. SCE 2024a at 7-147 & 7-150. This framing is not supported by SCE's own data.

At the Above Fairview Dam site, rainbow trout densities were 28 fish/acre in 1998, rose to 38 in 2006, dropped during the drought (4 in 2016), and recovered to 29 fish/acre in 2023—essentially returning to the 1998 baseline. SCE 2024e at B-3, Table B-3.

SCE's "same declines upstream" framing relies on the Above Johnsondale Bridge station. In 2023, however, SCE's report documents concrete method departures that directly weaken comparability at the Johnsondale site: high flows prevented upstream mid-channel swims and made the right bank inaccessible, so only the portion of the site that could be surveyed was used for density/biomass estimates. The report acknowledges that unusually high upstream flows required method modifications at Johnsondale and that those modifications "may have affected sampling effectiveness," while the direct-observation estimator assumes "All fish present can be observed." The report describes these constraints specifically for the Above Johnsondale Bridge station; it does not describe the same limitations for the Above Fairview Dam station, which sits directly above the diversion. SCE 2024e at 6-7, 16, 18, B-3 & B-4, Table B-3.

Separately, Table B-3 notes that 1998–2016 densities are based on observed totals while 2023 densities are population estimates; this estimator change does not affect the bypass-reach conclusion, where the 97–99% decline is so large and consistent across three independent sites that it is robust regardless of estimator choice. SCE 2024e at Table B-3. As such, Johnsondale is the weaker upstream comparator in 2023 for attributing causes of change across sites.

When system-wide trout densities crashed in 2016, SCE's consultants attributed the decline primarily to the five-year drought. SCE 2017a at 44-45. But the critical difference is what happened after the drought: the Above Fairview Dam site recovered to pre-drought levels by 2023; the bypass reach sites did not. They remained at 2-3 fish/acre—a 97-99% decline from 1998 that has persisted across wet and dry years alike.

The upstream/downstream comparison does not exonerate Project operations; it strongly supports a project-effects inference. The managing agencies recognized this dynamic decades ago. The Final Environmental Impact Statement for the Kern's Wild and Scenic River designation found that "[t]he greatest change in trout habitat occurs below the [Fairview] diversion dam where reduced flows and warmer water temperatures have reduced the quality of trout habitat." USFS 1994a at Affected Environment - 84. That finding predates the current license term. Thirty years later, the problem has only intensified.

The 1995 multiagency Plan identified KR3 by name as the principal source of trout-fishery harm in the designated reach. The signatory agencies—USFS, NPS, and CDFW—found that "the water diversion with the greatest impact on the trout fishery" in Segment 1 (which contains the bypass reach) is the Fairview Dam diversion for KR3 generation. USFS et al. 1995a at V-3.

The Forest Service's own designation-era management direction had already named this harm. The 1988 Sequoia National Forest Plan identified water diversion for energy production among the "greatest historical impacts on fish habitat" on the Forest, describing the mechanism as "eliminat[ing] fish habitat by removing water from streams and piping it away." USFS 1988a at 3-19. The 1994 Comprehensive Management Plan reaffirmed that diversion is among the "greatest impacts" on fish habitat in the W&SR corridor. USFS 1994b at CMP - 48.

SCE has not demonstrated that WR-1 will halt or reverse the documented population collapse. To the contrary, WR-1 would maintain—and in summer months reduce—essentially the same flow regime under which trout populations declined 97-99%. SCE has not demonstrated that the small increases in the May and June MIF under WR-1—far smaller than CEFF or its own IFIM model call for—would meaningfully improve conditions. MIF WB at Hydro, Table 2; SCE 2026b.

B. Water Temperature Exceedances

Introduction. This analysis examines continuous dissolved oxygen and water temperature monitoring data collected by SCE at sites above and below Fairview Dam as part of the KR3 relicensing studies (Study WR-1). Daily logger data recorded at 15-minute intervals are compared against applicable Tulare Lake Basin Plan water quality objectives and SCE's own identified biological thresholds for rainbow trout. The analysis demonstrates that Project operations cause chronic, systematic exceedances of state water quality standards in the bypass reach during summer months, while the unimpaired river upstream—subject to identical climate, weather, and watershed conditions—remains largely in compliance. These exceedances of objectives adopted under Clean Water Act authority establish the factual basis for conditions in any water quality certification issued under CWA § 401 for the new license.

All data analyzed herein are drawn from SCE's own monitoring records as reported in Study WR-1 (SCE 2024b) and the accompanying logger data files (SCE 2024f). Detailed analytical methods are presented within each section to ensure transparency regarding metric selection, data exclusions, and compliance frameworks. We have filed and/or submitted an accompanying water quality analysis calculation and figure workbook to this filing ("KRB MIF WB"—hereafter "MIF WB"). All figures and tables presented are from the

MIF WB file and identified in the "sheet name // figure/table number" format. *We use "summer" to denote June through September—months characterized by potential high thermal stress.*

Data quality. The temperature and DO analytical sites used in this memorandum—Site 1 (control, above the dam), Site 3 (mid-bypass), and Site 4 (lower bypass)—are SCE's own water-quality monitoring locations, established by SCE for SCE's monitoring program. This analysis uses SCE's monitoring data exactly as SCE collected and reported it. All daily summary metrics (daily mean, daily maximum, daily minimum) are computed from 15-minute continuous logger records. SCE qualified all DO data collected prior to WY 2024 due to sensor fouling (SCE 2024a at 7-59); this analysis uses only the unqualified WY 2024 DO record. No independent calibration adjustments have been applied. All exceedance calculations use daily minimum dissolved oxygen and daily maximum (or daily mean, as specified) temperature values, consistent with the Basin Plan's applicable criteria. To the extent that data gaps—including the qualification of all pre-WY 2024 dissolved oxygen data, the absence of summer 2023 temperature monitoring, and the 31-day Site 4 sensor failure in WY 2024—limit the analytical record, those limitations are attributable to SCE's study design and implementation, not to any deficiency in the analysis presented here. Under the Federal Power Act, it is the applicant's burden to provide the Commission with adequate information to evaluate environmental effects. 18 C.F.R. § 5.18(b)(5); *see also* FPA § 10(a)(1). Ambiguities in a record the applicant controlled should not be resolved in the applicant's favor—particularly where, as here, particularly where the available data uniformly support the impairment finding.

Hydrologic context. The dissolved oxygen analysis uses WY 2024 data exclusively—the only year for which SCE provides unqualified DO data. WY 2024 was the 10th wettest year of 29 in this term, with mean annual inflow to Fairview Dam at 152% of median. MIF WB at Hydro, Table 5. The DO conditions documented herein therefore represent the project's impact under favorable hydrologic conditions; exceedances in drier years could be more frequent and more severe.

Summer temperature data are available for three water years: WY 2021 (critically dry, mean summer bypass flow 82 cfs), WY 2022 (drought, mean summer bypass flow 154 cfs), and WY 2024 (above normal, mean summer bypass flow 399 cfs). MIF WB at Hydro, Table 6. WY 2022 data extend only through July 19, when the last paired temperature data were recorded before the project went offline for the remainder of the summer. WY 2023 is excluded because SCE did not collect summer temperature data in the bypass reach. SCE 2024f. Days with diversion at or below 5 cfs (67 in summer 2022 due to hatchery flow suspension; none in summer 2021 or 2024) are excluded. FERC has authorized 5 cfs as the non-operational variance flow for "maintaining wet conditions on the equipment seals."

FERC 2023a at 3. The pattern of project-contributed thermal impairment holds across all three water years: exceedances reach 88% of summer days at the downstream end of the bypass reach in critically dry conditions, 80% in drought, and 55% in above-normal conditions.

Analytical framework. This analysis applies the compliance metric appropriate to each parameter's biological mechanism and regulatory standard: daily minimum for dissolved oxygen (Basin Plan §3.1.6: "shall not be less than"), daily mean for the 20°C chronic growth threshold, and daily maximum for the 24°C acute stress threshold (SCE 2007b, Att. I at 2: "*daily mean* temperature criteria were developed to assess whether temperatures would be suitable for fish growth and *daily maximum* temperature criteria were developed to assess conditions that would stress fish"). Each parameter is assessed through a paired-site design using two independent legal frameworks: the applicable numeric or narrative objective, and the Basin Plan's antidegradation policy.

Causation. Project causation is strongly supported by three independent and mutually reinforcing lines of evidence. *First*, the paired-site comparison: because the upstream control (Site 1) and the bypass sites experience identical watershed-scale meteorological conditions on identical days, the divergence between sites isolates the hydrologic effect of Project diversions. Some natural downstream warming occurs over the 8–16 mile reach even at unimpaired flows—quantified at approximately 0.5–0.8°C during high-flow periods when the Project diversion recedes as a percentage of inflow (§1.6). At MIF flows, however, the temperature delta expands to 2–5°C—three to six times the natural baseline—and the DO deficit widens from near-zero to 0.9 mg/L (median). The project-caused increment dwarfs the natural component, and the flow-regression (below) directly quantifies the relationship. When the site above the diversion is already stressed and the project further degrades conditions in the bypass, the antidegradation violation is independent of the natural baseline. *Second,* the flow–water quality regressions: the statistically significant inverse relationships between bypass flow and both temperature increase and DO deficit (§1.6, §3.6) directly quantify the mechanism by which diversion degrades water quality, independent of the paired-site comparison. *Third,* the seasonal compliance pattern: exceedances are absent during high-flow months when adequate incoming flows exceed project diversion capability but reach 100% when the project diverts the bulk of inflow. This temporal on/off correspondence between diversion and impairment is itself causal evidence. These three lines converge to support an inference of project causation.

Transparency and Reproducibility. The analyses in this memorandum rely on SCE's own monitoring data, SCE's own modeling outputs, and the methodology choices SCE itself adopted in the relicensing studies. Every computation in the accompanying workbook is performed by live formulas operating on the source data. Each cited finding can be traced

from the memorandum citation to the workbook tab, table, and underlying formula. Where SCE's filings present conclusions and summary statistics, KRB's accompanying workbook makes every calculation reproducible. The agencies and SCE are invited to verify any number reported here, and we will provide alternative analyses or sensitivity checks on request.

Monitoring Sites. SCE deployed continuous dissolved oxygen and temperature loggers at five locations along the North Fork Kern River:

Site	Location	River Mile	Role
Site 1	Above Fairview Dam	RM 19.0	Upstream control
Site 2	Below Fairview Dam	RM 18.5	Immediate below-dam
Site 3	Gold Ledge Campground	RM 10.9	Mid-bypass reach
Site 4	Above KR3 Powerhouse	RM 3.2	Lower bypass reach
Site 5	Below KR3 Powerhouse	RM 2.9	Below powerhouse return

SCE 2024b at WR-1 2.

Site 1 (above Fairview Dam) serves as the upstream control for all analyses. Sites 3 and 4 are the primary bypass reach monitoring stations. Because both the control and bypass sites experience identical regional meteorology on identical days, the paired-site comparison isolates the effect of Project diversions from ambient conditions.

Site 4 presents a data sufficiency limitation for dissolved oxygen: it recorded only 15 days of DO data during summer 2024, with limited coverage in July and August, including a 31-day continuous data gap from July 27 to August 26. See § III.C.8. The DO analysis therefore focuses primarily on the Site 1/Site 3 comparison, with Site 4 data referenced where available. Temperature data at Site 4 are more complete across all three analyzed water years, though a sensor failure in WY 2024 (Jul 27–Aug 26) reduces Site 4 paired days that year.

1.0 Temperature: 20°C Growth Threshold—Basin Objective and Antidegradation

SCE has identified trout's preferred temperature range as 15–18°C, both adult and juvenile, and a trout growth threshold beyond that range of 20ºC as a daily mean. SCE 2026e at AQ-2 Table 5-19; SCE 2007b at 2-3. The threshold-exceedance analysis below quantifies project-attributable contributions to that regime.

Finding:

The project causes or exacerbates 20°C growth-threshold exceedances on 75% of summer days at Site 4 and 64% at Site 3, using daily mean temperature across three water years. In July, the exceedance rate is 100% at Site 4 and 95% at Site 3. At Site 4, the 7-day rolling average remains at or above 20°C for **29 consecutive days** even in the above-normal year (WY 2024), terminating only at the Jul 26 sensor failure; at Site 3, **47 consecutive days** (Jul 5 – Aug 20, 2024). The upstream control's 7-day rolling average exceeds 20°C on **31% of summer days** across the three water years analyzed — substantially less often than the bypass sites and never in sustained streaks of comparable length or magnitude. MIF WB at Temp_20C_Sum_S3, Table 8; Temp_20C_Sum_S4, Table 7. The rainbow trout population in this reach has declined 97–99% over the license term (SCE 2024e).

1.1 Regulatory Framework

The governing Tulare Lake Basin Plan establishes two independent temperature protections for waters designated COLD or WARM. First, the narrative objective provides: “Natural temperatures of waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses.” Second, the antidegradation principle provides: “In instances where uncontrollable factors have already resulted in water quality objectives being exceeded, controllable factors are not allowed to cause further degradation of water quality.” CVRWQCB 2018a at §3.1.17 & Ch. 3 Preamble.

The bypass reach of the Kern River (within the “Above Lake Isabella” segment) is designated COLD, WARM, SPWN (spawning, limited to cold water fisheries), RARE, and WILD. Id. at Table 2-1. The KR3 Project’s diversion of up to 600 cfs of natural inflow constitutes a “controllable water quality factor”—the Basin Plan expressly recognizes that “manmade changes that alter flow regimes can affect water quality and impact beneficial uses.” CVRWQCB 2018a at 3-2.

1.2 Analytical Approach

This analysis uses daily mean temperatures from SCE’s monitoring network: Site 1 (above the point of diversion, control), Site 3 (mid-bypass) and Site 4 (low bypass). Data span June through September of WY 2021 (critically dry, mean summer bypass flow 82 cfs), WY 2022 (drought, mean summer bypass flow 154 cfs; data through July 19 only, after which no paired temperature data were recorded before the project went offline), and WY 2024 (above normal, mean summer bypass flow 399 cfs). MIF WB at Hydro, Table 6. Days with diversion at or below 5 cfs are excluded as non-operational. The 5 cfs threshold is anchored

to the FERC variance order that authorizes that flow level as the maintenance baseline during tunnel outage or hatchery suspension. FERC 2023a at 3. After exclusions, the analysis covers 245 paired summer days at Site 4 and 276 at Site 3 (Site 3 has additional days in WY 2024 when the Site 4 sensor was offline). MIF WB at Temp_20C_Sum_S4, Table 1; Temp_20C_Sum_S3, Table 1.

Each day is classified into one of three categories based on SCE's 20°C trout growth threshold (SCE 2007b, Att. I at 2-3):

(1) Narrative objective violation—Site 1 (control) is below 20°C; the bypass site exceeds 20°C. The project's temperature alteration causes the exceedance.

(2) Antidegradation violation—Both sites exceed 20°C. Control conditions already exceed the threshold; the project's additional warming constitutes further degradation by a controllable factor.

(3) No exceedance—Both sites are below 20°C.

Denominator. All percentages use the number of days with paired data as the denominator—not calendar days.

The 20°C threshold is set by SCE for trout growth. SCE 2007b, Att. I at 2-3. It also sits substantially above SCE's identified Sacramento pikeminnow optimum of 15°C. SCE 2012a at 30 (citing Bettelheim 2001). Days that exceed the trout-growth threshold therefore also exceed the pikeminnow optimum, by a wider margin.

1.3 Results: Site 3 (Mid-Bypass)

Fig. 1a. Daily-mean temperature ≥20°C — Site 3 (Goldledge), WY 2021 (Critically Dry)

82% of valid paired days (91/111) at or above the screen

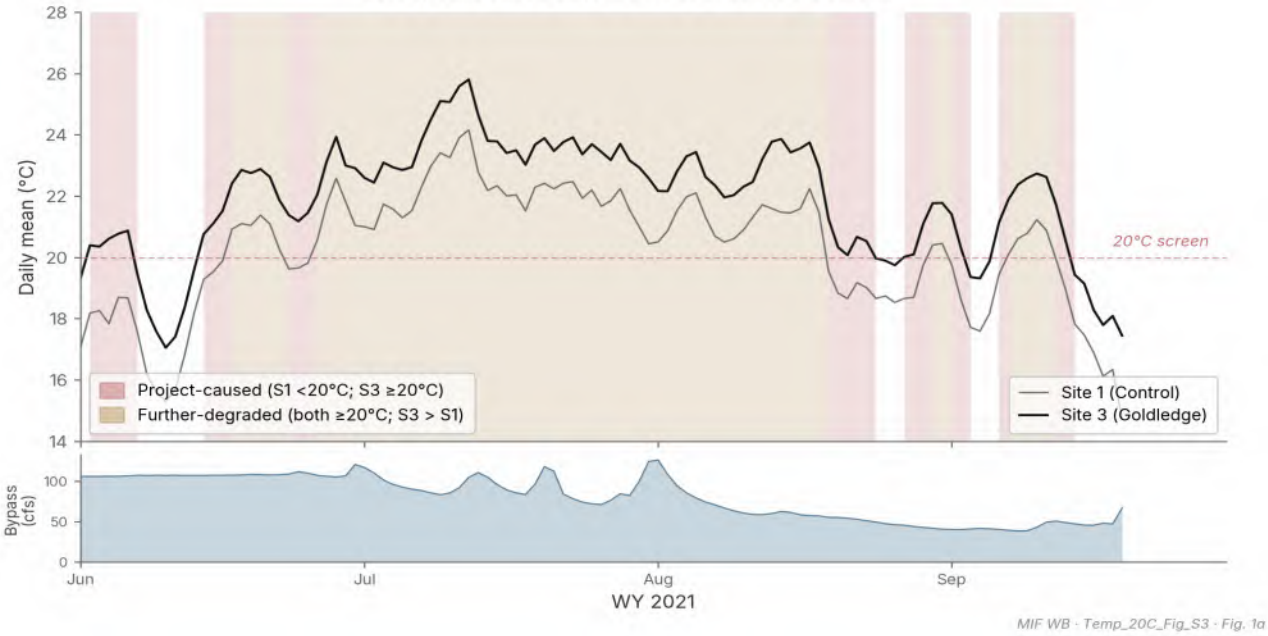
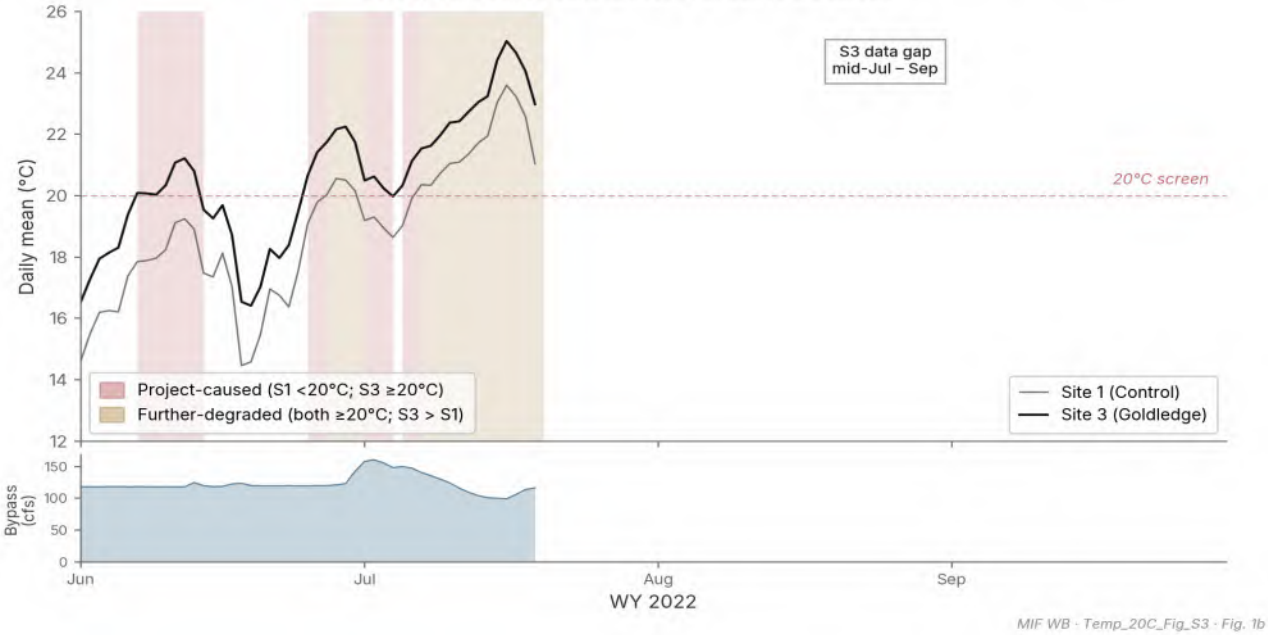
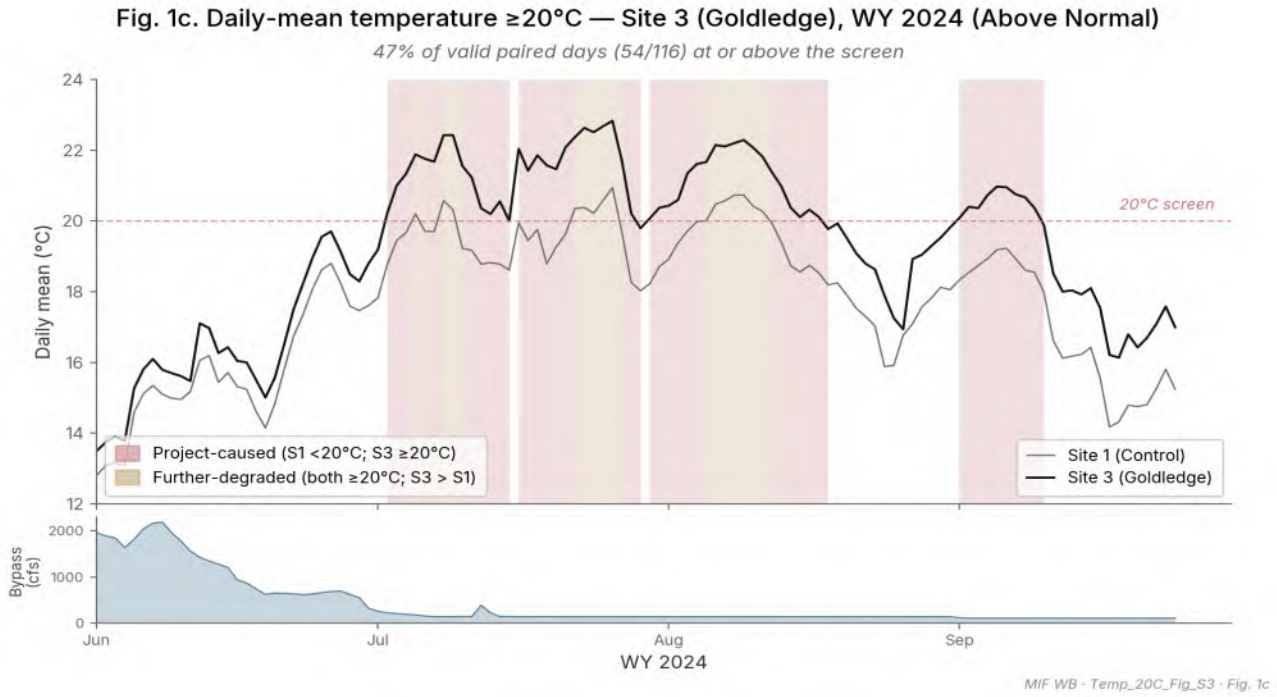


Fig. 1b. Daily-mean temperature ≥20°C — Site 3 (Goldledge), WY 2022 (Drought)

63% of valid paired days (31/49) at or above the screen





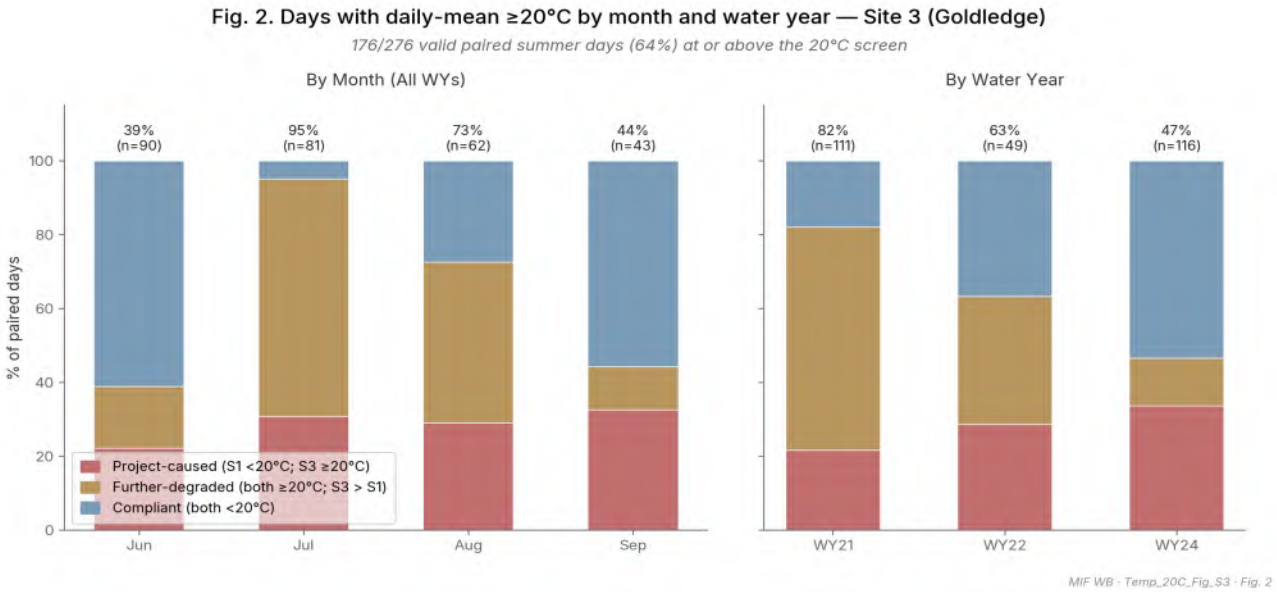
MIF WB at Temp_20C_Fig_S3, Figs. 1a-1c.

That data show that Site 3 exceeds 20°C as a daily mean on 176 of 276 summer days (64%) over three years. MIF WB at Temp_20C_Sum_S3, Table 1. Of these:

Narrative objective exceedances: 77 days (28%). MIF WB at Temp_20C_Sum_S3, Table 1.

Antidegradation exceedances: 99 days (36%). Id.

The following figure breaks down Site 3 exceedances by month and water year:



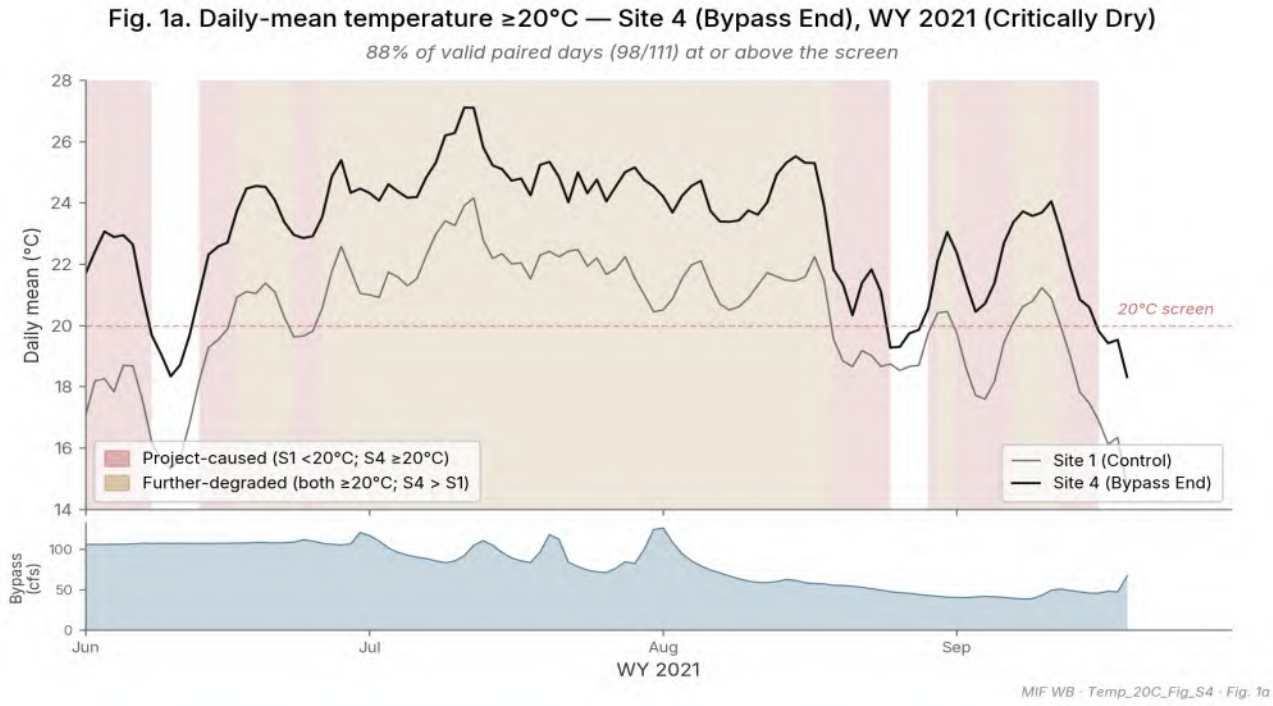
MIF WB at Temp_20C_Fig_S3, Fig. 2.

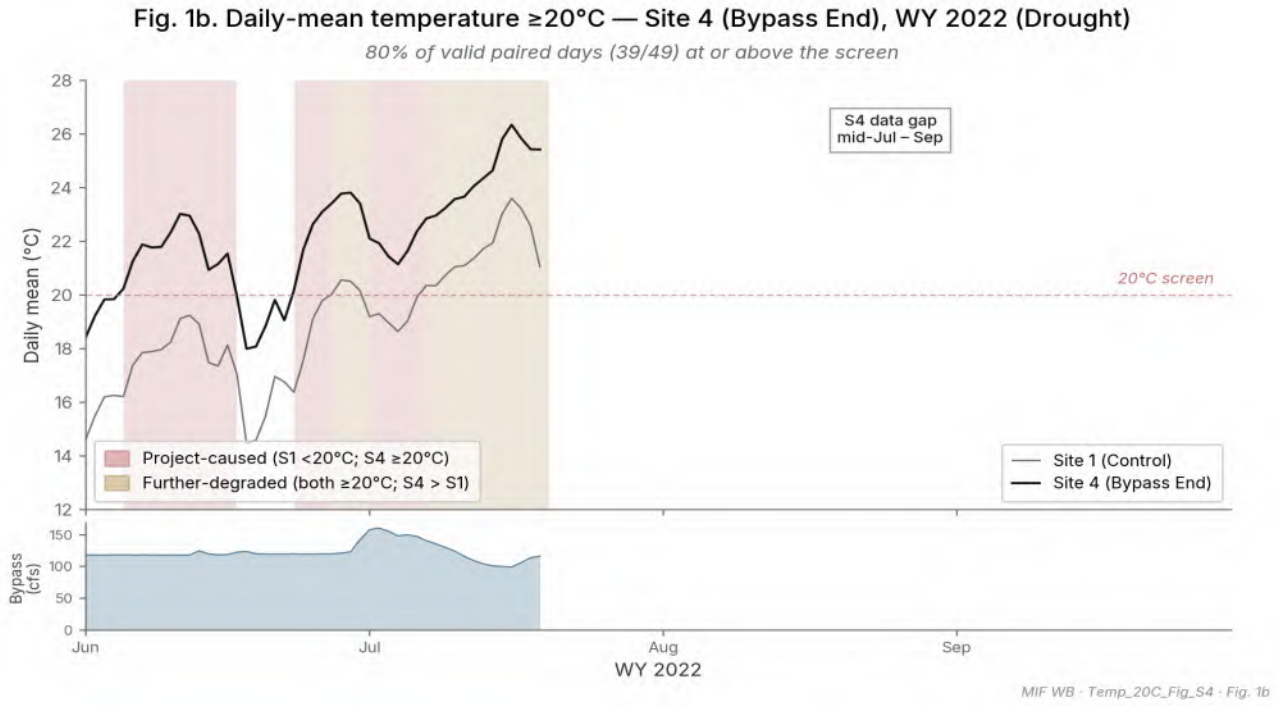
In July, the exceedance rate is 95%, in August, 73%. MIF WB at Temp_20C_Sum_S3, Table 1.

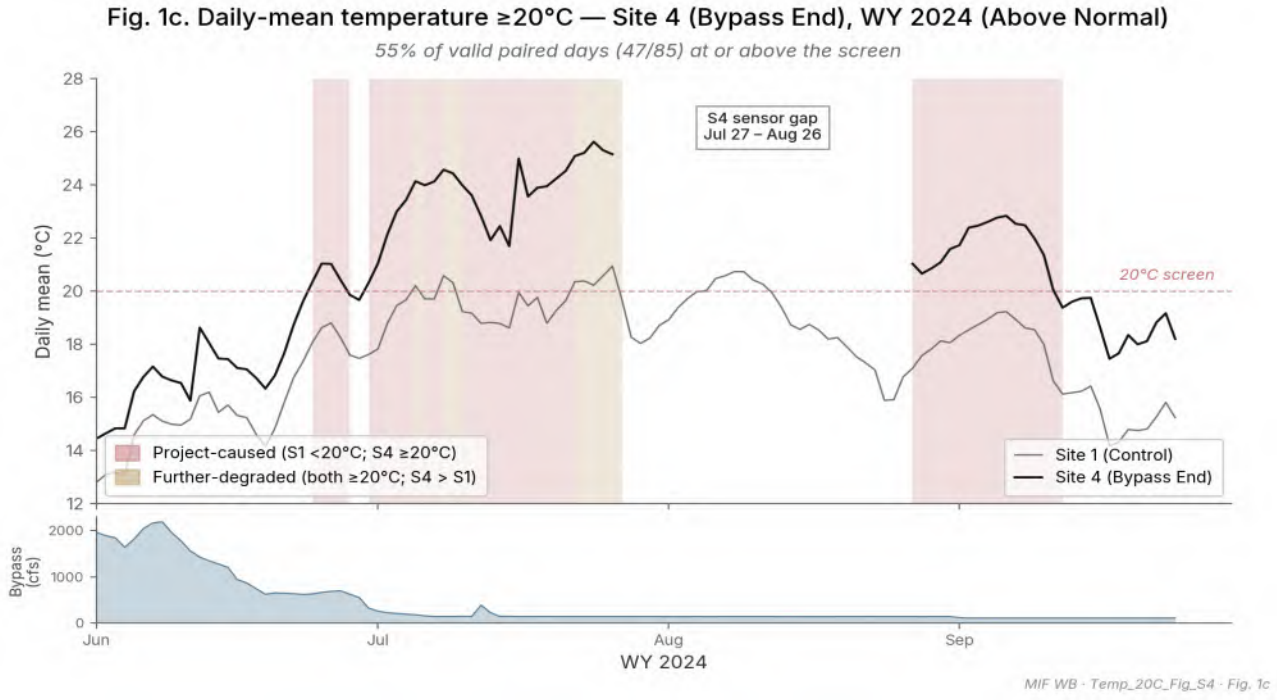
The pattern holds in critically dry (WY 2021: 91/111, 82%), drought (WY 2022: 31/49, 63%), and above-normal (WY 2024: 54/116, 47%) conditions. Id. at Table 2.

Persistence. Site 3 exceeded 20°C for 36 consecutive days in WY 2021 (Jun 14–Jul 19), 33 consecutive days later that summer (Jul 22–Aug 23), 27 consecutive days in WY 2024 (Jul 2–Jul 28), and 15 consecutive days in WY 2022 (Jul 5–Jul 19). MIF WB at Temp_20C_Sum_S3, Table 5.

1.4 Results: Site 4 (Low Bypass)







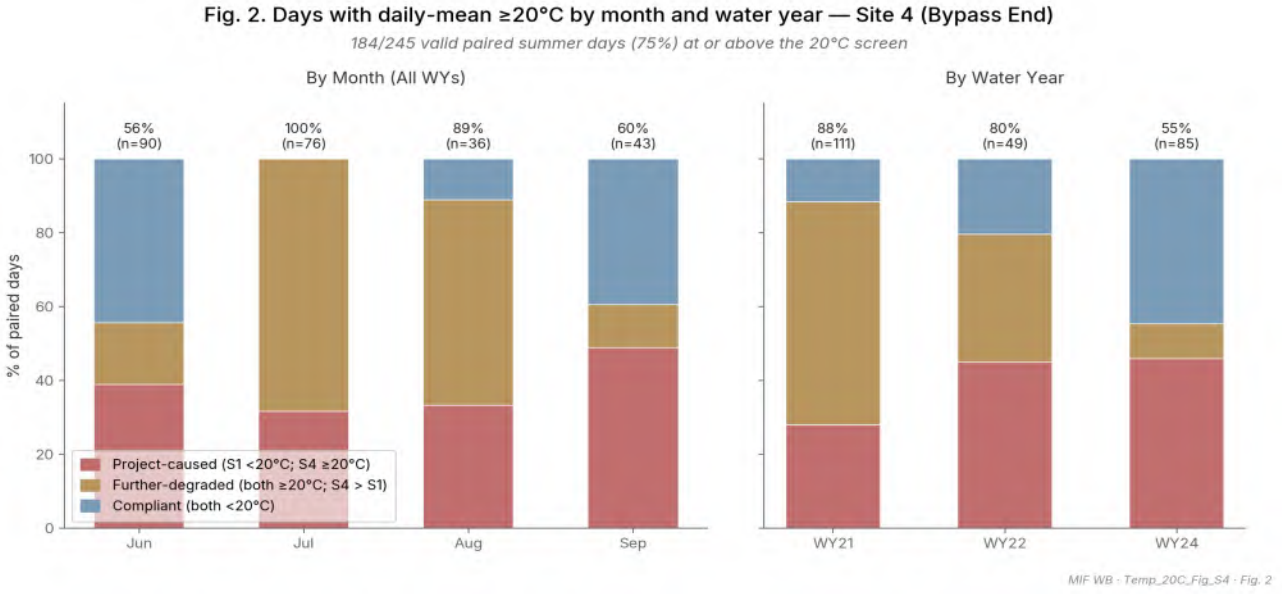
MIF WB at Temp_20C_Fig_S4, Figs. 1a-1c.

The pattern intensifies at Site 4, at the downstream end of the bypass reach. Site 4 exceeds 20°C on 184 of 245 summer days (75%). MIF WB at Temp_20C_Sum_S4, Table 1. Of these:

Narrative objective exceedances: 92 days (38%). Id.

Antidegradation exceedances: An additional 92 days (38%). Id. On 66 of these 92 days (72%), Site 4 exceeds the 24°C acute-stress threshold on a daily mean basis. Id. at Table 4.

The following figure breaks down Site 4 exceedances by month and water year:



MIF WB at Temp_20C_Fig_S4, Fig. 2.

In July, the exceedance rate is 100% across all three water years, in August, 89%. Temp_20C_Sum_S4, Table 1.

The pattern holds in critically dry (WY 2021: 98/111, 88%), drought (WY 2022: 39/49, 80%), and above-normal (WY 2024: 47/85, 55%) conditions. Id. at Table 2.

Persistence. Site 4 exceeded 20°C for 37 consecutive days in WY 2021 (Jun 13–Jul 19; peak 27.1°C), 34 consecutive days later that same summer (Jul 22–Aug 24), 27 consecutive days in both WY 2022 (Jun 23–Jul 19) and WY 2024 (Jun 30–Jul 26). Id. at Table 5.

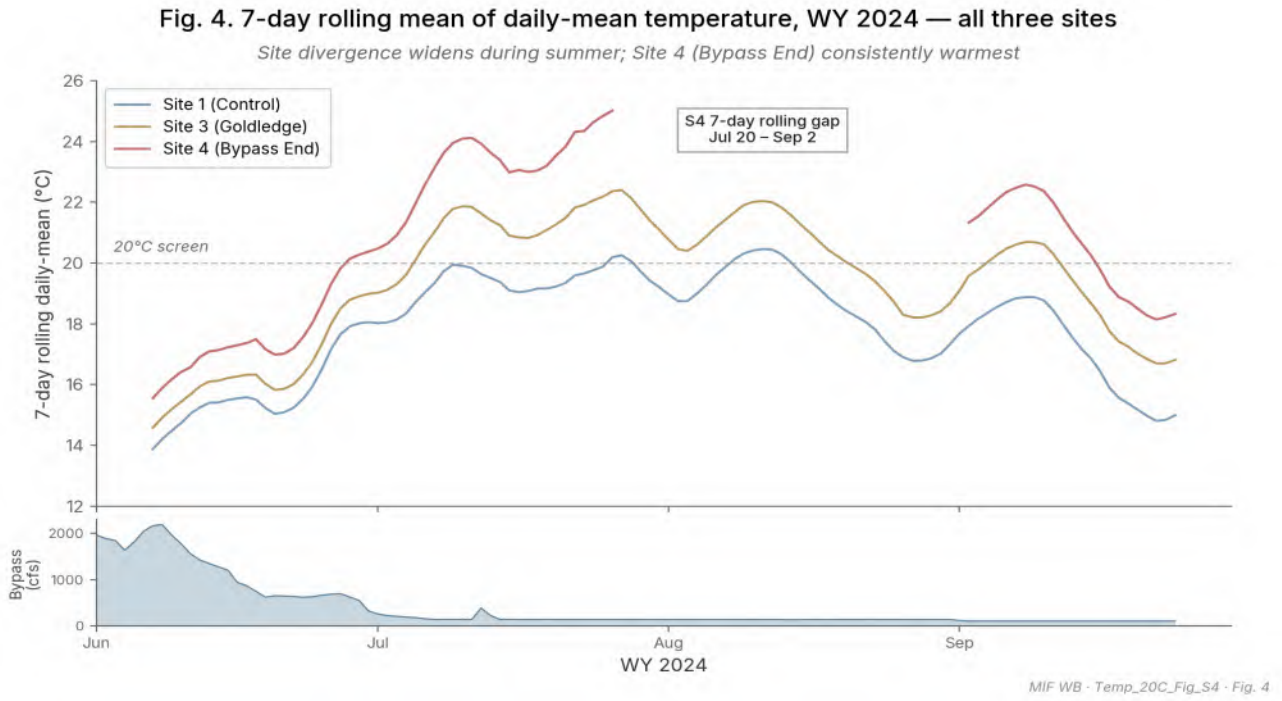
1.5 Section 3.1.17 Averaging Provision

Basin Plan §3.1.17 provides: "In determining compliance with the above limits, the Regional Water Board may prescribe appropriate averaging periods provided that beneficial uses will be fully protected." CVRWQCB 2018a. This provision warrants four observations.

First, the proviso's condition precedent is that "beneficial uses will be *fully* protected" (emphasis added). The COLD, WARM, SPWN, RARE, and WILD beneficial uses designated for this reach cannot be characterized as fully protected when the rainbow trout population has declined 97–99% (SCE 2024e). SCE's own literature review identifies 20°C (daily mean) as the threshold for growth impairment and 24°C (daily maximum) as the threshold for acute stress (SCE 2007b, Att. I at 2-3). The project causes or exacerbates exceedances of

the growth threshold on 75% of summer days at Site 4 and the acute stress threshold on 62% of summer days (daily maximum basis). MIF WB at Temp_20C_Sum_S4, Table 1; Temp_24C_Sum, Table 2. The averaging proviso contemplates minor, localized, or transient deviations that leave beneficial uses intact—not a regime of chronic thermal stress that, by SCE's own biological benchmarks, impairs growth on three-quarters of summer days and inflicts acute stress on nearly two-thirds (see below). No longer-average period applied to this record could satisfy the "fully protected" standard.

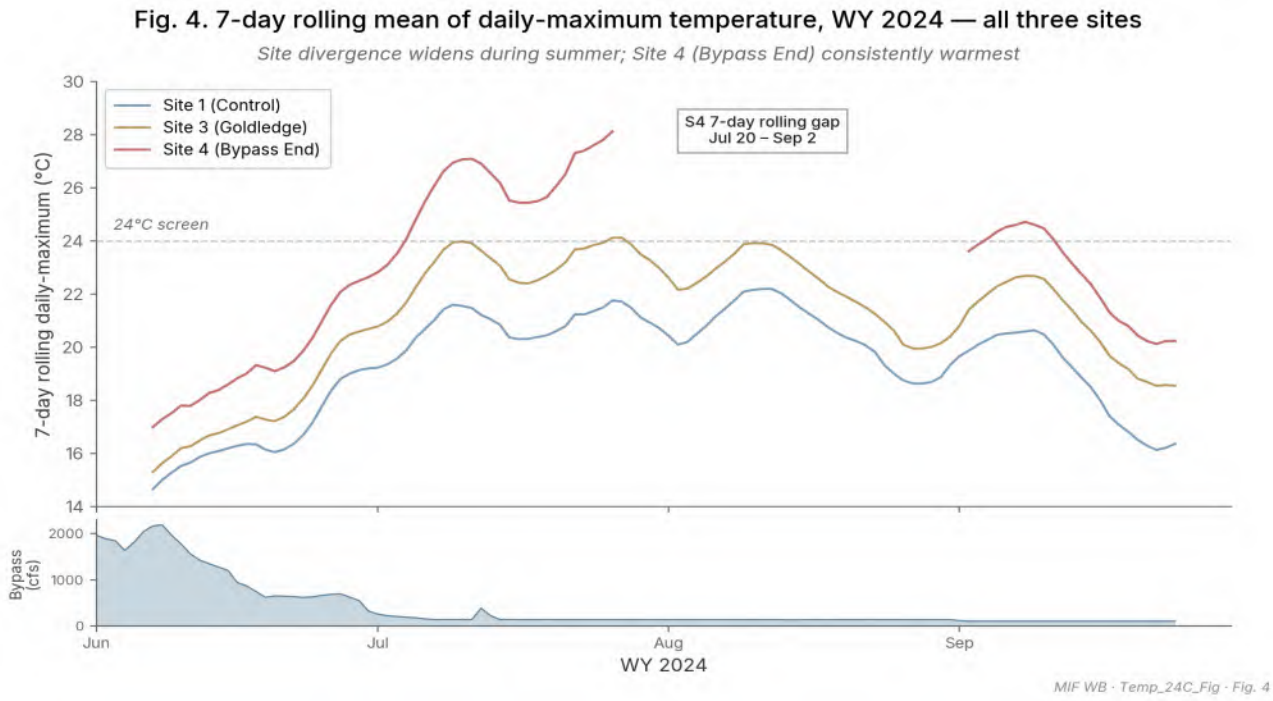
Second, the analysis presented here already uses an averaged metric—daily mean temperature—for the 20°C chronic threshold. This is itself a 24-hour averaging period. Even with this averaging, the project causes exceedances on 64% of summer days mid-bypass and 75% of summer days low-bypass. Longer averaging periods would not eliminate exceedances; they would merely smooth them. The following figures demonstrate this concretely for WY 2024—the most favorable year to SCE (above-normal hydrology):



MIF WB at Temp_20C_Fig_S4, Fig. 4.

For Site 3, the 7-day rolling average remains ≥20°C for **47 consecutive days** (Jul 5 – Aug 20, 2024). Site 4 rolling average remains elevated through peak summer for **29 consecutive days** (Jun 28 – Jul 26, 2024), terminating only at the sensor-failure gap. The control's 7-day rolling average is elevated above 20°C on **31% of summer days** across the three water years, and never approaches the persistence or magnitude observed at the bypass sites. MIF WB at Temp_20C_Sum_S3, Table 8.

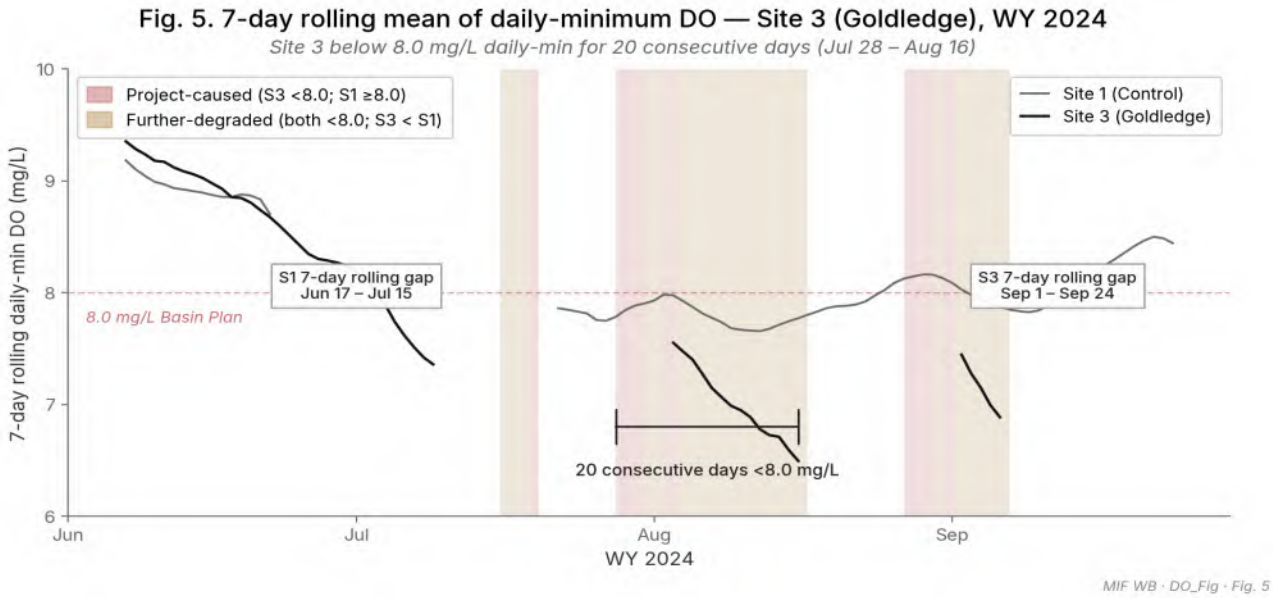
The same pattern appears in the rolling average of daily-maximum temperatures at Site 4:



MIF WB at Temp_24C_Fig_S4, Fig. 4.

Site 4 routinely exceeds 24°C across consecutive weeks, again notwithstanding data gaps; the control never reaches 24°C.

The same is true for daily-minimum dissolved oxygen at Site 3:



MIF WB at DO_Fig, Fig. 5.

Site 4 only returned 15 days of DO data—14 were below the standard. MIF WB at DO_Summary, Tables 3, 4.

The 7-day rolling averages confirm that these exceedances are not transient spikes. These results from a favorable water year (2024) demonstrate that no reasonable averaging period can satisfy the "fully protected" standard.

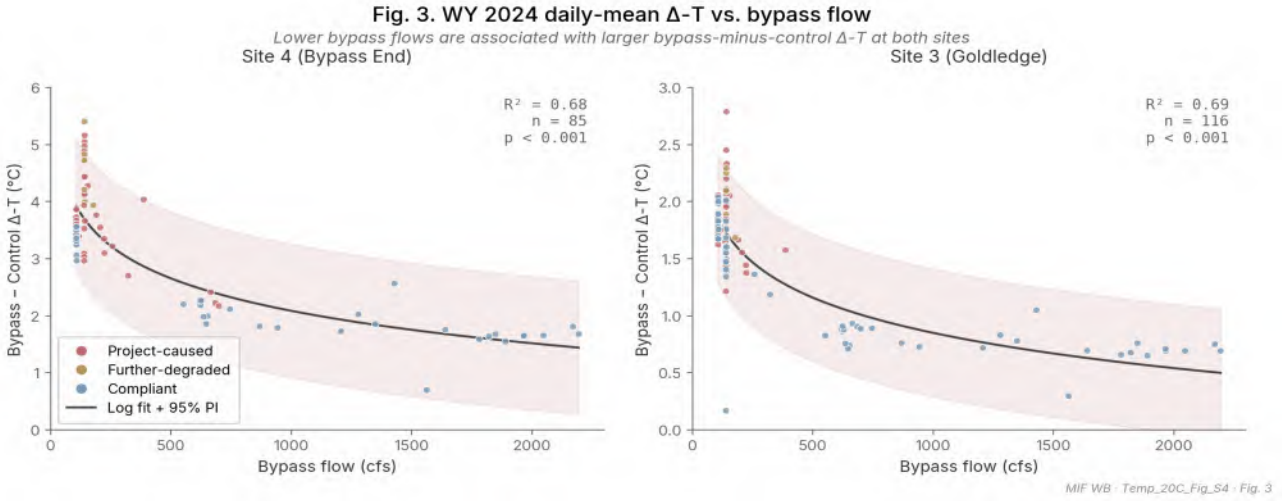
Third, the DO standard contains no comparable averaging provision. The language is absolute: DO "shall always meet or exceed" Table 3-1 values and "shall not be less than" 8.0 mg/L. CVRWQCB 2018a at §3.1.6. The daily minimum is therefore the only defensible compliance metric for DO. The contrast between the two provisions—temperature allows Board-prescribed averaging subject to a stringent proviso; DO allows none—underscores that the Basin Plan treats DO violations as per se impairment.

Fourth, SCE's own California Environmental Flows Framework ("CEFF") analysis independently confirms that beneficial uses cannot be characterized as "fully protected" under this or the proposed WR-1 flow regime. SCE's analysis found that the Project alters three of the five CEFF functional flow components: fall pulse flows, wet-season baseflows, and dry-season baseflows. SCE 2024b at WR-2 28–30, Table 5.2-4. Alteration of three of five functional flow components does not represent a marginal deviation; it is the alteration of more than half of the "aspects of a natural flow regime that sustain ecological, geomorphic, or biogeochemical functions, and that support the specific life history and habitat needs of native aquatic species." CEFWG 2021a at 3. Such a flow regime does not "fully protect" beneficial uses.

1.6 Natural Downstream Change and Paired-Site Design

The paired-site methodology compares bypass conditions (Sites 3 and 4) against the upstream control (Site 1). An important question is whether some of the observed downstream change would occur naturally—independent of the project—as the river travels 16 miles through the bypass reach. We address this transparently.

Temperature. Rivers naturally warm as they travel downstream due to solar heating, air-water heat exchange, and reduced gradient. However, the paired-site change in temperature between control and both bypass sites increases substantially as bypass flow decreases—a relationship visible in the scatter analysis below and consistent with the physical expectation that reduced flow means less thermal mass, slower transit, and greater surface-to-volume ratios:



MIF WB at Temp_20C_Fig_S4, Fig. 3.

The project's flow reduction thus increases the rate of downstream temperature change. Critically, our paired-site methodology controls for ambient weather—including the hotter air temperatures SCE identifies—because control and impact sites experience the same regional air-temperature regime on every paired day. Any seasonal increase in air temperature affects both sites equally. The regression above isolates the additional warming caused by reduced bypass flow, not by warmer air.

SCE's SSTEMP comparisons independently confirm this result: they isolate flow changes under shared meteorology and still predict 2.2-2.5°C of project-attributable cooling at CEFF flows in peak summer. See § III.D.

Sensitivity analysis: reclassification of exceedance categories. Some days classified as "narrative" (project-caused) exceedances may more properly belong in the "antidegradation" (project-worsened) category if natural downstream warming would have caused the bypass to exceed 20°C absent diversion. The precise magnitude of natural warming in this reach is uncertain and need not be resolved, because the analytical conclusion does not depend on it.

Critically, the combined exceedance rate does not change. Even if every narrative day were reclassified to antidegradation—an extreme assumption—the same 184 and 176 days would remain exceedance days under one or both regulatory frameworks. This is because the adjustment moves days between regulatory categories, not out of exceedance entirely. Both categories represent independent regulatory problems: narrative exceedances violate the water quality objective, while antidegradation exceedances violate the prohibition on further degradation by controllable factors. The biological harm to fish is the same in either category. The flow–temperature regression and SCE temperature monitoring establish that

reduced flow drives warming throughout the bypass reach, regardless of how the downstream delta is partitioned between natural and project components.

By plotting the paired-site temperature difference (ΔT = bypass site − Site 1) against bypass flow, the analysis removes meteorological variability and isolates the flow-dependent component of downstream warming. The logarithmic regression yields R^2 = 0.68 for Site 4 and R^2 = 0.69 for Site 3 (both $p < 0.001$). The ΔT is substantially greater at lower bypass flows than at higher flows, confirming that the project's diversion regime drives additional warming. This relationship is physically intuitive: less water in the channel means less thermal mass, slower transit, and greater surface-to-volume ratios, all of which amplify solar and ambient heating.

Dissolved oxygen. The natural downstream trend for DO in this reach is, at most, neutral: at high bypass flows (>500 cfs), Site 3 daily-minimum DO averages **0.10 mg/L above Site 1 (n = 22 paired days; mean absolute difference 0.17 mg/L)**—well within typical DO sensor measurement uncertainty, and consistent with no net natural downstream DO degradation in this reach. MIF WB at DO_Summary, Table 8. The project reverses this baseline. As flows approach the MIF, the reduced water volume heats more rapidly (suppressing DO through reduced oxygen solubility) and provides less turbulent energy for reaeration. See § III.C. The observed downstream DO deficit at lower flows is therefore project-caused: with no natural downstream DO degradation to attribute it to, the deficit can only reflect the project's flow-mediated effect on water column oxygen.

Summary. The paired-site design is one of three independent lines of evidence establishing project causation. The others are the flow–water quality regressions, which directly quantify the effect of diversion on temperature and DO, and the seasonal pattern, in which exceedances are absent during high-flow months and reach 100% when the project diverts the bulk of inflow. None of these lines depends on the assumption that downstream conditions would exactly match the upstream control absent the project.

1.7 Application to Beneficial Use Determination

Narrative objective. The narrative objective asks whether the project's temperature alteration "adversely affect[s] beneficial uses." CVRWQCB 2018a at 3-9. This standard applies to every day the project makes thermal conditions worse for fish—not just the days when the project causes a threshold crossing, but also the days when it widens an existing exceedance. The narrative objective contains no balancing test and no exception for hydroelectric generation. On all 184 exceedance days at Site 4 and all 176 at Site 3, the project's diversion makes bypass temperatures worse for COLD, WARM, SPWN, and RARE beneficial uses. MIF WB at Temp_20C_Sum_S4, Table 1; Temp_20C_Sum_S3, Table 1. The

97–99% decline in the bypass reach rainbow trout population (SCE 2024e) confirms that this alteration is biologically consequential.

Antidegradation policy (separate, independent standard). The Basin Plan's antidegradation policy provides a second, independent legal basis. On the subset of days when control conditions already exceed 20°C, the project—as a controllable factor—causes further degradation (median paired-site difference of 2.9°C at Site 4 on antidegradation days, pushing conditions above 24°C on 72% of such days). MIF WB at Temp_20C_Sum_S4, Table 4. As discussed in §1.6, accounting for any natural downstream warming would shift days from the narrative to the antidegradation category without reducing the combined exceedance rate.

An argument may be advanced that hydroelectric generation (HYDR) is itself a designated beneficial use, and that the antidegradation framework under Resolution 68-16 permits some degradation where it serves "maximum benefit to the people of the State." SWRCB 1968a at 1. This argument is limited in three respects. First, it does not reach the narrative temperature objective, which independently prohibits temperature alterations that adversely affect beneficial uses. The narrative standard's only exception is a demonstration—by the proponent, to the satisfaction of the Regional Water Board—that the alteration does not adversely affect beneficial uses. SCE has made no such demonstration, and the three of five CEFF functional flow component alterations, 97-99% trout population collapse, the documented temperature-mortality link in SCE's own studies, and the chronic exceedance of SCE's own thermal thresholds make any such demonstration impossible on this record. Second, the Basin Plan's DO standard contains no exception or demonstration mechanism. DO "shall always meet or exceed" the Table 3-1 values and 'shall not be less than' 8.0 mg/L. CVRWQCB 2018a at 3-4. Even if the HYDR-balancing argument could somehow excuse temperature exceedances—which it cannot, because the narrative standard contains no balancing test—it cannot reach the DO violations at all. Third, the 68-16 framework requires affirmative findings that the degradation is consistent with maximum public benefit. The Project operates at a net annual loss of $1.5–2.3 million (CAISO market data, 2024-2025) and holds just 0.020% of California's resource adequacy capacity (NQC)—the equivalent of less than two hours in an entire year. SCE 2024a at 9-5; CAISO 2025b; KRB 2026a. The Project's extended 16-month complete outage (2013–2014) illustrates that system reliability is not materially contingent on KR3. SCE 2024a at 7-268. The project's adverse effects degrade a congressionally recognized Wild and Scenic River serving Southern Californians and beyond. Given these facts, the factual predicates for a maximum-benefit finding are absent.

SCE's proposed WR-1 MIF would reduce July and August minimum instream flows from 130 cfs to 100 cfs. Given the demonstrated inverse relationship between flow and

temperature, this reduction would increase both the frequency and magnitude of threshold exceedances, further undermining any claim that the project's temperature alteration does not adversely affect the five habitat-related beneficial uses (COLD, WARM, SPWN, RARE, WILD) designated for this reach.

2.0 Temperature: 24°C Acute Stress—Daily Maximum Analysis

Finding:

Using daily maximum temperature—the metric SCE itself prescribed for acute stress assessment—Site 3 exceeded 24°C on 80 of 276 summer days (29%), and Site 4 on 152 of 245 days (62%). The project causes or worsens essentially all of these exceedances: the control exceeds 24°C on only 15 days across the entire three-year summer record. Daily mean detection misses 70 additional exceedance days at Site 3 and 82 at Site 4. The 7-day rolling average of daily maximum at Site 4 remains at or above 24°C for **23 consecutive days in WY 2024** (Jul 4 – Jul 26)—a hydrologically favorable year; the control never reaches 24°C on a rolling average basis. MIF WB at Temp_24C_Sum, Table 10.

2.1 Selection of Compliance Metric

SCE's own literature review for California rainbow trout explicitly prescribed different metrics for each threshold: "*Daily mean* temperature criteria were developed to assess whether temperatures would be suitable for fish growth and *daily maximum* temperature criteria were developed to assess conditions that would stress fish." SCE 2007b, Att. I at 2. Our 24ºC analysis, like our earlier 20ºC analysis, applies those metrics exactly as SCE specified.

SCE selected 24°C daily maximum as the threshold for short-term stress, based on Eaton *et al.* (1995), USEPA (1976), and upper incipient lethal temperature data. SCE 2007b, Att. I at 2-3. A fish that experiences even a few hours above 24°C sustains physiological damage regardless of the daily mean. Using daily mean for an acute threshold systematically understates stress exposure by averaging away the diurnal peaks that drive biological harm.

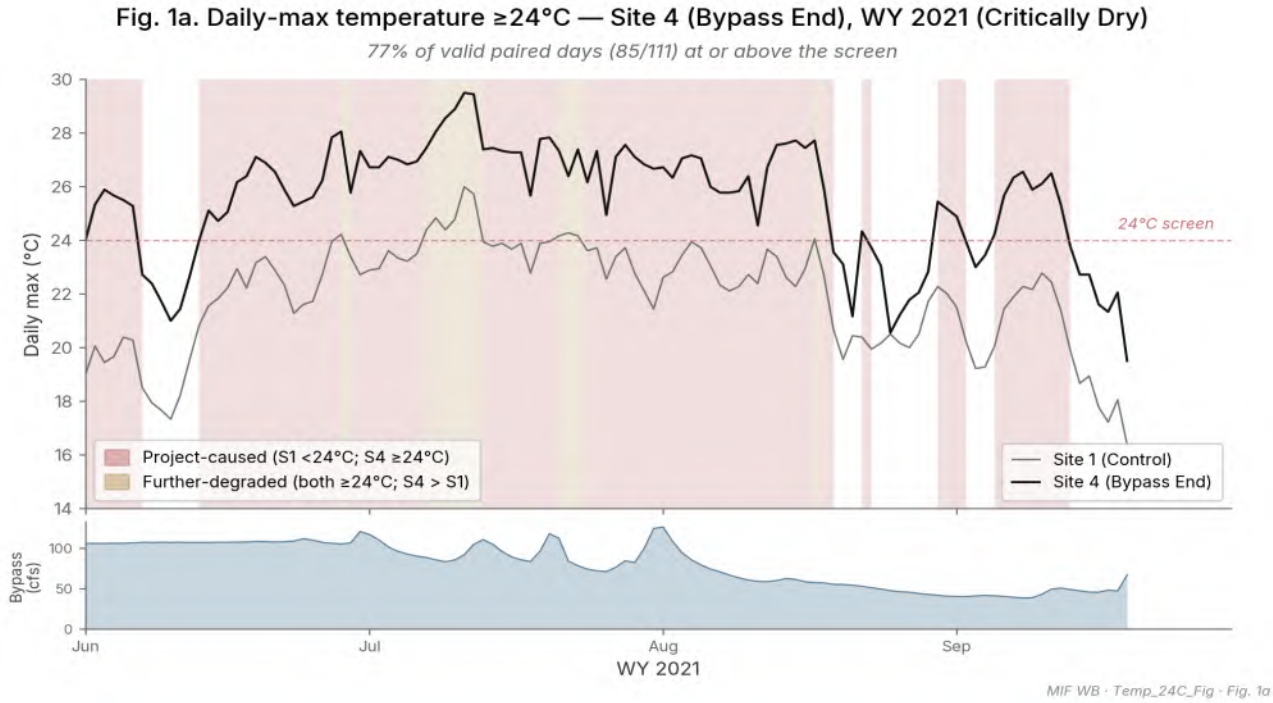
The 24°C daily maximum is the trout acute-stress threshold. It also sits near the upper bound of SCE's identified Sacramento sucker preferred range of 20–25°C. SCE 2026e at AQ-2 Table 5-19. As shown below, daily maxima at the bypass end (Site 4) reach 29.5°C on documented peak days—well above the sucker preferred upper bound, in addition to violating the trout threshold.

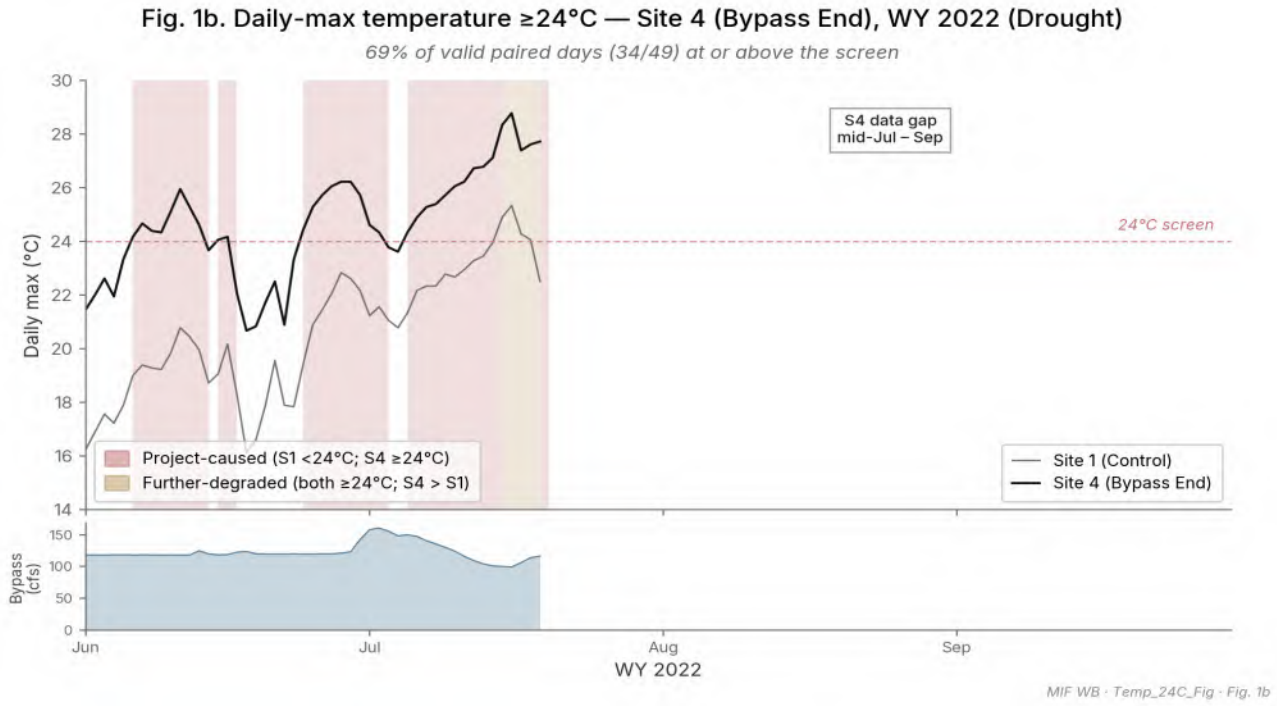
2.2 Results: Site 3 (Mid-Bypass)

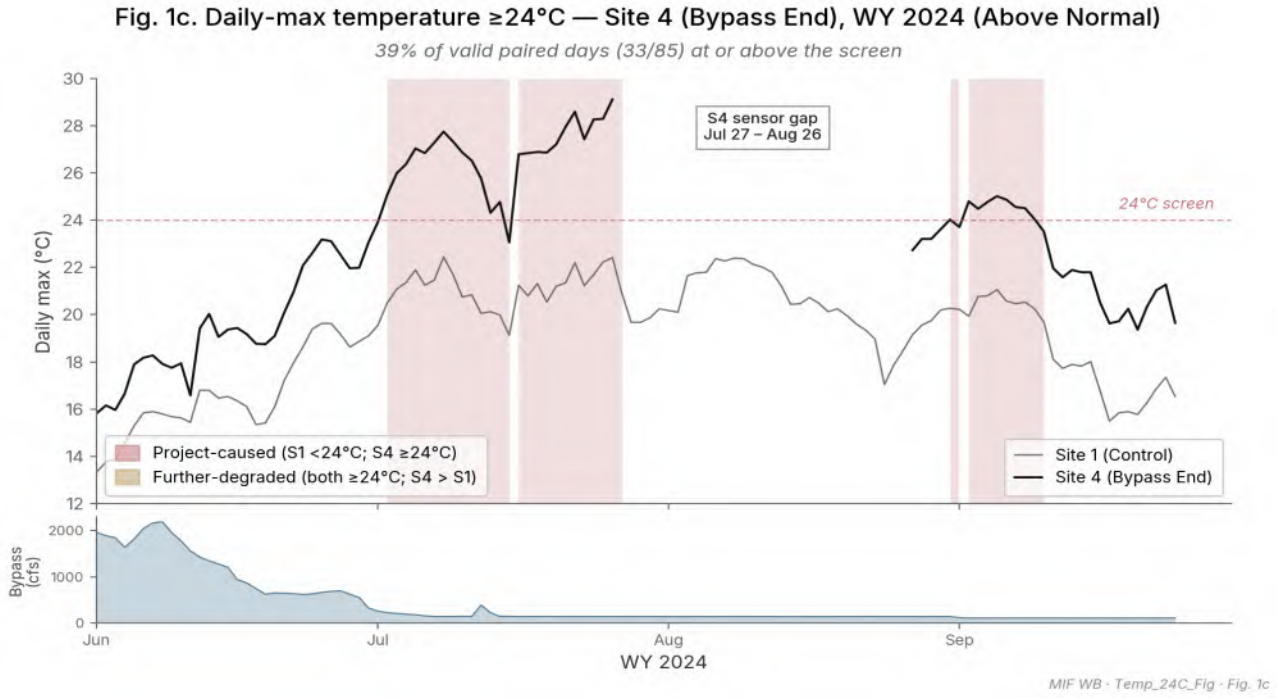
Site 3 has data for 276 paired summer days. The daily maximum exceeds 24°C on 80 of those days (29%): 65 narrative-objective (24%) and 15 antidegradation (5%). Even at the midpoint of the bypass reach, the project causes acute stress conditions on nearly one in four summer days. Daily mean detection would identify only 10 of these 80 days (13%)—missing 70 exceedance days. MIF WB at Temp_24C_Sum, Tables 4, 5.

2.3 Results: Site 4 (Bypass End)

The pattern intensifies downstream. Site 4 has 245 paired summer days. The daily maximum exceeds 24°C on 152 days (62%):





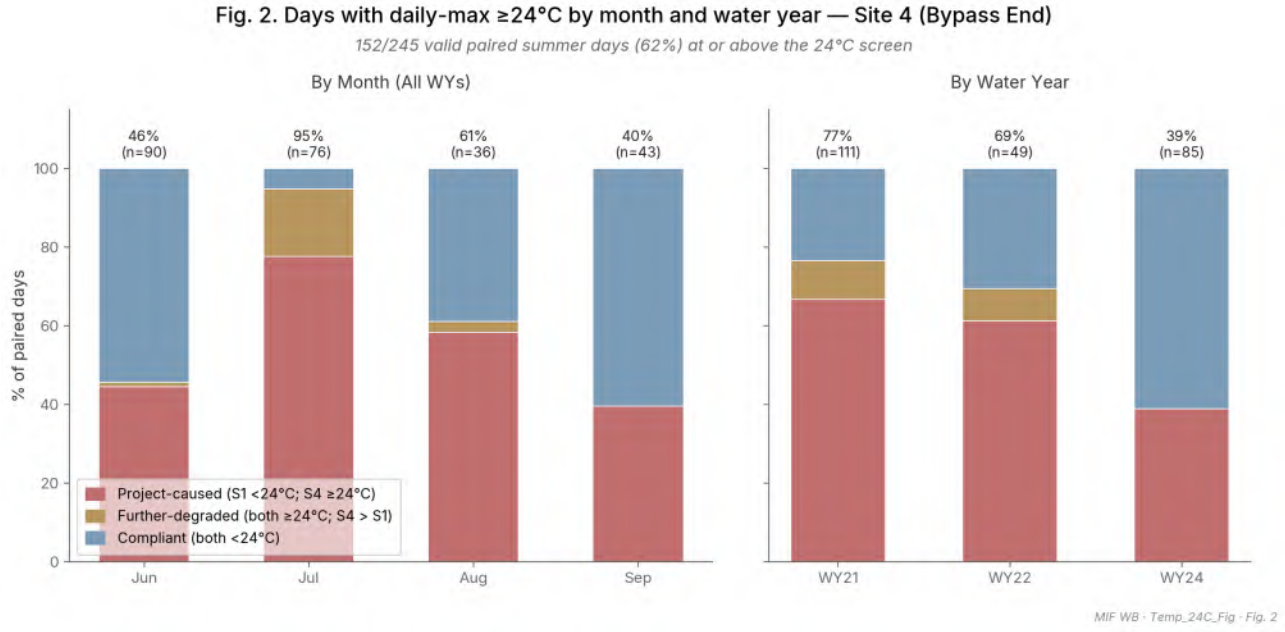


MIF WB at Temp_24C_Fig, Figs. 1a-1c.

Project-caused exceedances: 137 days (56%). The control's daily maximum stays below 24°C while Site 4 exceeds it. The median Site 4 daily maximum on these days is 26.1°C. MIF WB at Temp_24C_Sum, Table 8.

Antidegradation exceedances: 15 days (6%). The control site (Site 1) exceeded 24°C daily maximum on only 15 days across the entire three-year summer record (5.4% of days with data). At Site 4, the bypass end, the daily maximum exceeds 24°C on 152 days—a 10.1× project-driven amplification of acute thermal stress. MIF WB at Temp_24C_Sum, Table 7.

The following figure breaks down Site 4 exceedances by month and water year:



MIF WB at Temp_24C_Fig, Fig. 2.

In July, 95% of days with data show daily maximum temperatures above 24°C, in August, 61%. The pattern holds across all three water year types, though the frequency is highest in critically dry and drought conditions.

Persistence. Site 4 exceeded 24°C daily maximum for 37 consecutive days in WY 2021 (Jun 13–Jul 19; peak 29.5°C) and 28 additional consecutive days later that summer (Jul 22–Aug 18). In WY 2022, the longest streak was 15 consecutive days (Jul 5–Jul 19; peak 28.8°C). In WY 2024, 13 consecutive days (Jul 2–Jul 14; peak 27.8°C):

Site 4 Consecutive Day Streaks >24°C MaxTemp

WY	Start	End	Days	Max Temp (°C)
WY2021	Jun 13, 2021	Jul 19, 2021	37	29.5
WY2021	Jul 22, 2021	Aug 18, 2021	28	27.72
WY2021	Sep 05, 2021	Sep 12, 2021	8	26.56
WY2022	Jul 05, 2022	Jul 19, 2022	15	28.78
WY2022	Jun 24, 2022	Jul 02, 2022	9	26.22
WY2022	Jun 06, 2022	Jun 13, 2022	8	25.94

WY2024	Jul 02, 2024	Jul 14, 2024	13	27.75
WY2024	Jul 16, 2024	Jul 26, 2024	11	29.11
WY2024	Sep 02, 2024	Sep 09, 2024	8	25.02

MIF WB at Temp_24C_Sum, Table 6.

The control site (Site 1) exceeded 24°C daily maximum on only 15 days across the entire three-year summer record. MIF WB at Temp_24C_Sum, Table 7.

2.4 Daily Mean vs. Daily Maximum: Detection Gap

Reliance on daily means for an acute threshold substantially understates the project's thermal impact on rainbow trout:

Daily Mean v. Daily Minima, Sites 3 & 4

Metric	S3 Days ≥24°C	S3 Rate	S4 Days ≥24°C	S4 Rate
Daily Mean	10	4%	70	29%
Daily Maximum	80	29%	152	62%
Additional Detected	70	+25pp	82	+33pp

MIF WB at Temp_24C_Sum, Tables 2, 4.

The daily mean misses 70 exceedance days at Site 3 and 82 at Site 4. These are not marginal cases—the median daily maximum on project-caused exceedance days at Site 4 is 26.1°C, well into the range of acute physiological stress.

2.5 Application to Beneficial Use Determination

The daily maximum analysis reinforces the narrative objective violation established in Section 1. The control site (Site 1) rarely reaches 24°C (5%); bypass sites regularly exceed it.

The project's alteration of natural temperatures "adversely affect[s] beneficial uses" within the meaning of Basin Plan §3.1.17. Temperatures consistently above 24°C are associated with acute physiological stress, increased disease susceptibility, and direct mortality in rainbow trout. SCE 2007b, Att. I at 2-3. The 97–99% decline in the bypass reach rainbow trout population (SCE 2024e) is consistent with chronic exposure to these conditions.

SCE's proposed WR-1 alternative would reduce summer minimum instream flows from 130 cfs to 100 cfs. Given the demonstrated inverse relationship between flow and temperature, this reduction would increase both the frequency and magnitude of 24°C exceedances.

C. Dissolved Oxygen: 8 mg/L Daily Minimum—Basin Objective and Antidegradation

Finding:

In the most favorable year in the logger record (WY 2024, above-normal hydrology), the bypass reach exceeds the Basin Plan's absolute 8.0 mg/L DO standard on 35 of 57 paired summer days (61%) at Site 3, assessed using daily minimum—the only metric consistent with "shall not be less than." Exceedances are absent in June (0% at high flows) but reach 100% in July, August, and September once the project diverts the bulk of inflow. Site 3 daily minimum DO remained below 8.0 mg/L for 20 consecutive days (nadir 6.17 mg/L). On 26 of these days, the upstream control is itself below 8.0 mg/L, yet the Project further depresses DO below the control on every one (median additional deficit: 0.90 mg/L)—triggering the Basin Plan's absolute prohibition on further degradation (§3.1.6).

1. Regulatory Framework

Numeric objective (Table 3-1, p. 3-5). The bypass is assigned a minimum DO of 8.0 mg/L. CVRWQCB 2018a at 3-5. Section 3.1.6 provides that DO "shall always meet or exceed" these values and "shall not be less than" the tabulated minimums. CVRWQCB 2018a at 3-4. This establishes an absolute floor—any reading below 8.0 mg/L at any time constitutes a violation.

DO-specific antidegradation (§3.1.6, p. 3-4). "Where ambient DO is less than these objectives, discharges shall not cause a further decrease in DO concentrations." CVRWQCB 2018a at 3-4. This is separate from—and stricter than—the general antidegradation policy. It imposes an absolute prohibition: where ambient DO is already below 8.0 mg/L, controllable discharges shall not cause further decrease. The provision is categorical on its face.

General antidegradation (Ch. 3 preamble, p. 3-2). "In instances where uncontrollable factors have already resulted in water quality objectives being exceeded, controllable factors are not allowed to cause further degradation of water quality." CVRWQCB 2018a at 3-2. The Basin Plan expressly recognizes that "manmade changes that alter flow regimes can affect water quality and impact beneficial uses." Id.

Additional authority: EPA Gold Book (1986) recommends an 8.0 mg/L daily minimum for waters supporting coldwater early life stages. EPA 1986a at 216, Table 1. The bypass reach is designated COLD, WARM, SPWN, RARE, and WILD. CVRWQCB 2018a at 2-5, Table 2-1. SWRCB Resolution 68-16 independently prohibits degradation of high-quality waters. SWRCB 1968a at 1.

2. Analytical Approach

Data qualification. SCE qualified all DO data collected prior to October 2023 (i.e., before WY 2024) due to sensor fouling. SCE 2024a at 7-59. This analysis uses only WY 2024 DO data.

Compliance metric: daily minimum. Like the EPA Gold Book, the Basin Plan's DO standard is expressed as an absolute floor ("shall not be less than"). Compliance accordingly turns on the minimum DO concentration recorded during each day. This analysis uses daily minimum DO computed from 15-minute continuous monitoring data. Daily minimum is the correct metric because any period when DO falls below 8.0 mg/L constitutes a violation of the "shall always meet or exceed" standard.

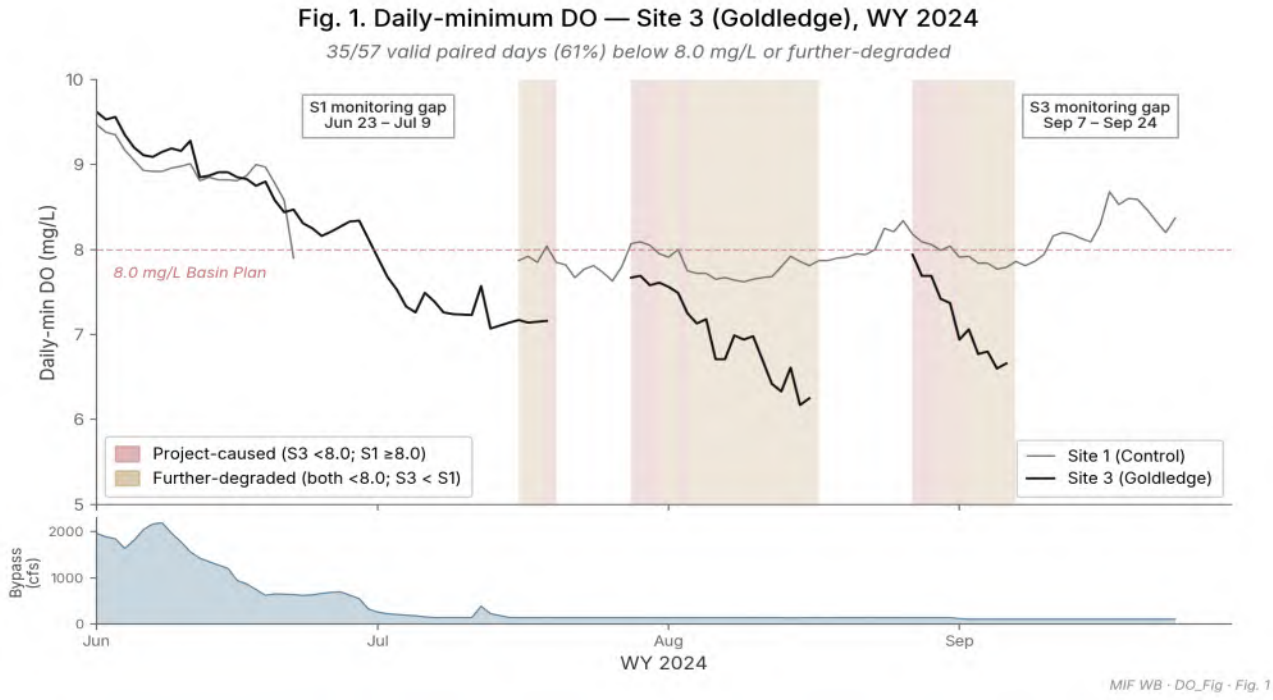
Paired-site design. Each day is classified using paired daily minimum DO at Site 1 (control, above Fairview Dam) and the bypass site:

(1) Numeric objective violation—Control ≥ 8.0 mg/L; bypass < 8.0 mg/L. The project causes the violation.

(2) Antidegradation violation—Both control and bypass < 8.0 mg/L. The §3.1.6 antideg provision and general antideg policy each independently prohibit further degradation.

(3) Compliant—Both sites ≥ 8.0 mg/L.

3. Results: Site 3 (Mid-Bypass)



MIF WB at DO_Fig, Fig. 1.

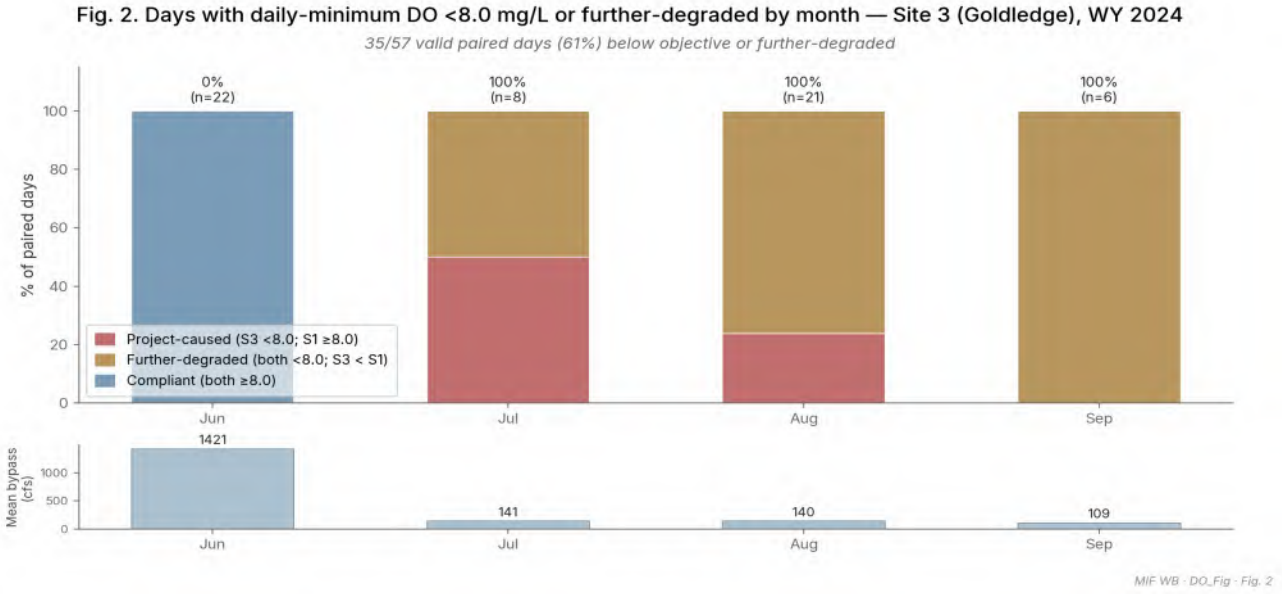
Site 3 has 57 paired summer days with valid WY 2024 DO data. Of these, 35 days (61%) show exceedances:

Site 3 (Mid-bypass): WY2024—8 mg/L DO Standard, Daily Minimum

Month	Days w/ Data	Numeric	Antideg	Combined	Rate	Mean Bypass
June	22	0	0	0	0%	1,421 cfs
July	8	4	4	8	100%	141 cfs
August	21	5	16	21	100%	140 cfs
September	6	0	6	6	100%	109 cfs
TOTAL	57	9	26	35	61%	—

MIF WB at DO_Summary, Table 1.

The seasonal pattern is stark: June's 0% exceedance rate reflects sustained high flows (mean 1,421 cfs). Once SCE diverts the bulk of inflow—reducing bypass flows to 109–141 cfs—exceedances reach 100% in every remaining summer month.

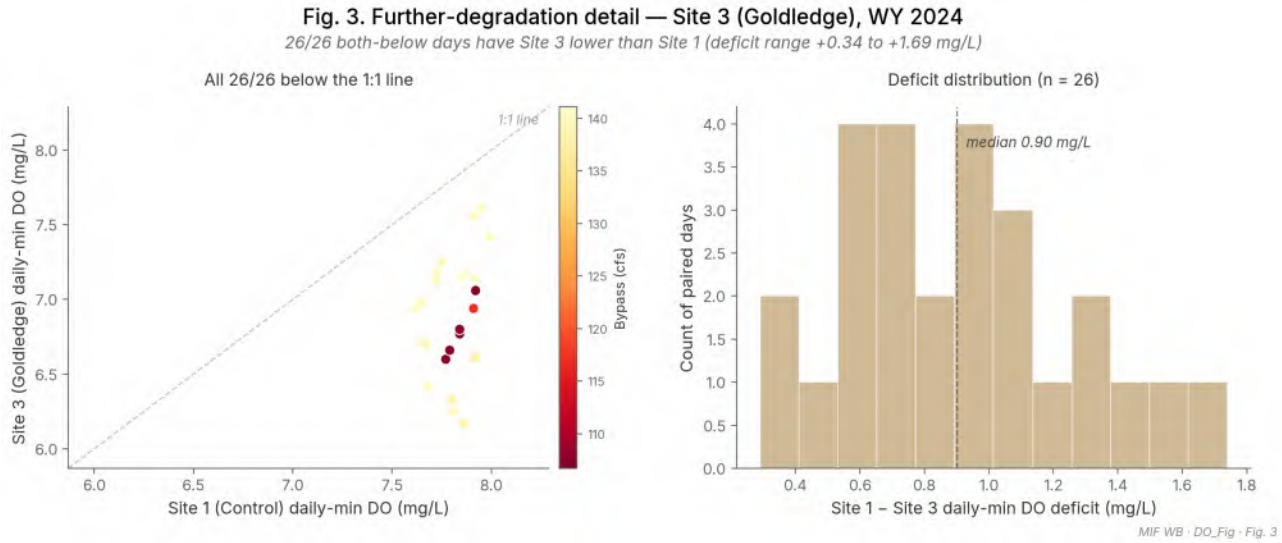


MIF WB at DO_Fig, Fig. 2.

Persistence. Site 3 daily minimum DO remained below 8.0 mg/L for 20 consecutive days (Jul 28–Aug 16, 2024; nadir 6.17 mg/L). Additional streaks: **Jul 1–19 (17 days below 8.0 mg/L within a 19-day window; two no-data days, Jul 10 and Jul 14)**and Aug 27–Sep 6 (11 days). MIF WB at DO_Summary, Tables 5 and 7. All told, 48 of 48 summer days after June had readings at Site 3 below 8.0 mg/L (35 paired). This is not an isolated spike—it is chronic, sustained oxygen depletion across the entire warm season.

4. Antidegradation Detail: Site 3

On 26 of the 35 exceedance days, the upstream control is itself below 8.0 mg/L, triggering the Basin Plan's absolute prohibition on further DO degradation by controllable factors (§3.1.6). On all 26 of these days (100%), the Project further depresses DO below the upstream control level. The median additional deficit is 0.90 mg/L; the maximum is 1.69 mg/L. MIF WB at DO_Summary, Table 2.



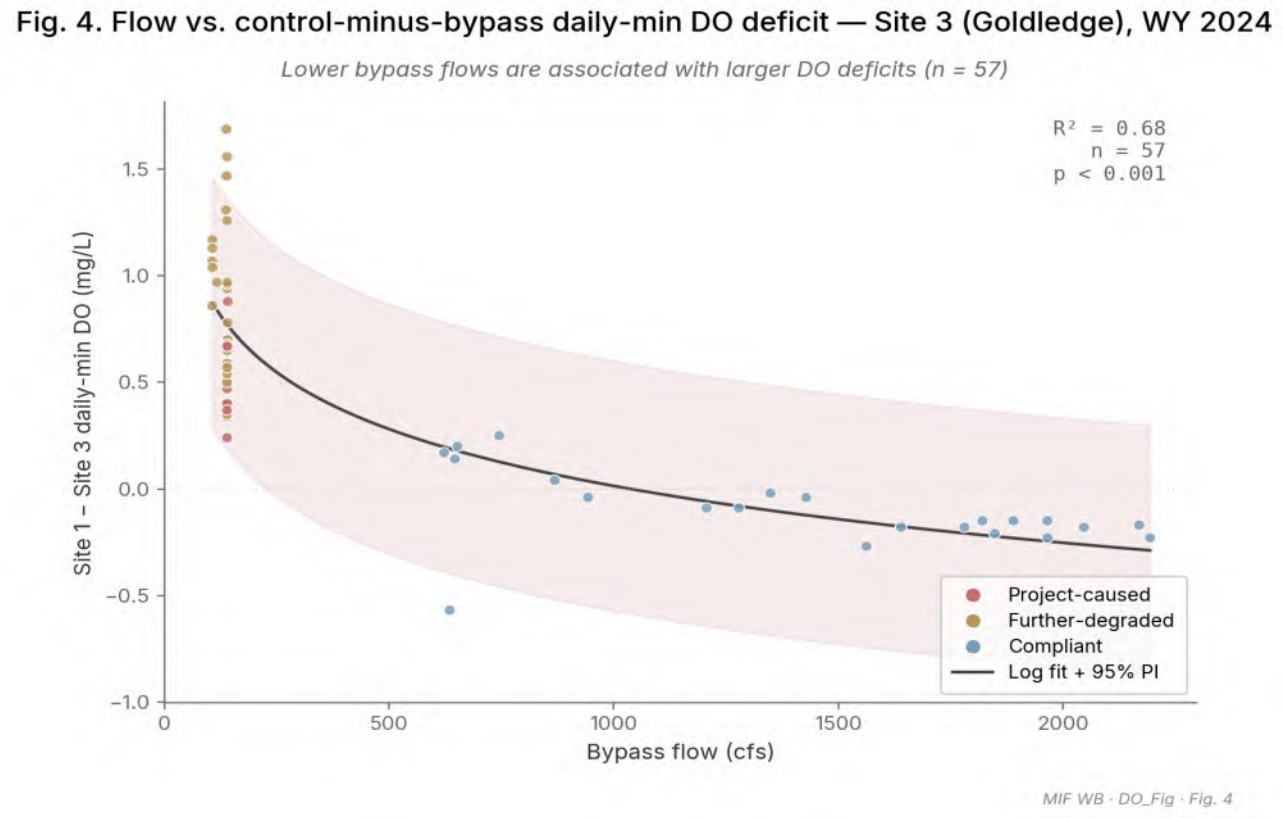
MIF WB at DO_Fig, Fig. 3.

5. *Results: Site 4 (Bypass End)*

Site 4 has only 15 paired summer days with valid WY 2024 DO data (limited by sensor deployment). Of these, 14 days (93%) show exceedances: 9 numeric (60%) and 5 antidegradation (33%). On all 5 antidegradation days, the project further depresses DO below control. MIF WB at DO_Summary, Tables 3 & 4. The downstream intensification pattern is consistent with temperature: conditions worsen progressively through the 16-mile bypass reach.

6. *Flow–DO Connection*

The inverse relationship between bypass flow and the DO deficit is physically direct. By plotting the paired-site difference (ΔDO = Site 3 − Site 1) rather than absolute DO, this analysis removes meteorological variability and isolates the project's flow-mediated effect on dissolved oxygen. Higher flows provide greater oxygen transport capacity, increased thermal mass, and enhanced turbulent reaeration at riffles and cascades.



MIF WB at DO_Fig, Fig. 4.

The logarithmic regression (R^2=0.68, p<0.001, n=57) confirms a strong, statistically significant relationship: as bypass flow decreases, the project-caused DO deficit widens. MIF WB at DO_Summary, Table 6.

On the 22 compliant days at Site 3 (all in June, when snowmelt sustained high flows), mean bypass flow was 1,421 cfs; on the 35 exceedance days (all in July–September, after diversion intensified), 135 cfs. MIF WB at DO_Summary, Tables 1 & 2. SCE's proposed WR-1 alternative would set a summer minimum instream flow of 100 cfs—well below the current mean on exceedance days.

7. Cumulative Assessment

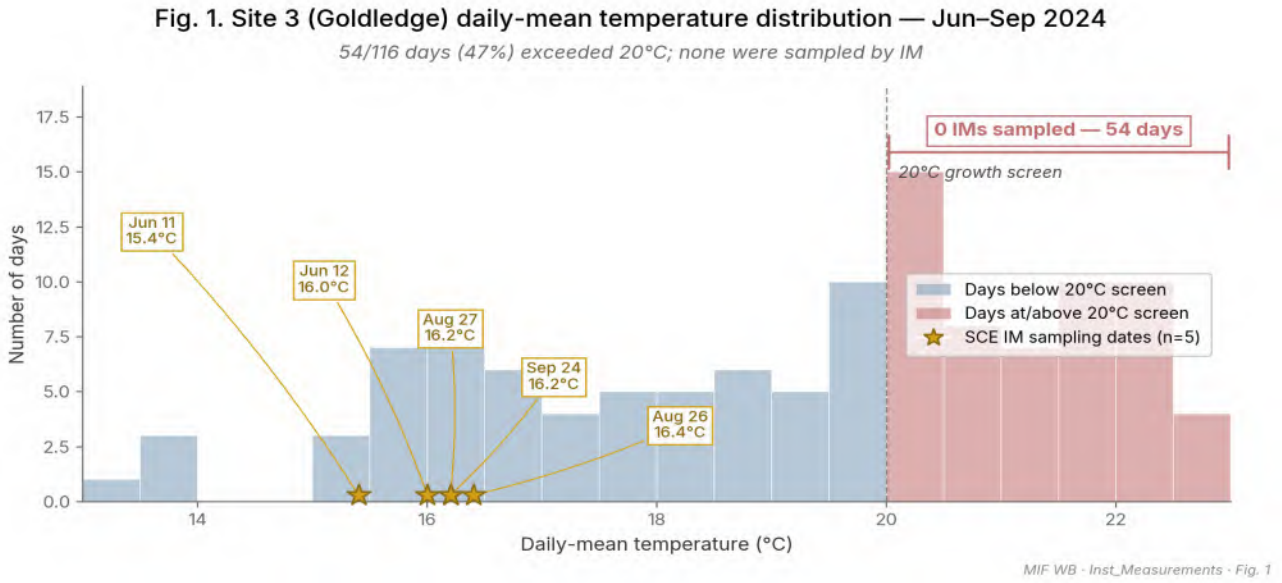
These water quality exceedances are not isolated metrics but biologically consequential impairments that correspond spatially and temporally with the documented 97–99% collapse of the bypass reach rainbow trout population (SCE 2024e) and the CEFF-confirmed alteration of three of five functional flow components (SCE 2024b at WR-2 28–30). Temperature exceedances at the growth threshold (20°C daily mean) occur on 64–75% of summer days; acute stress exceedances (24°C daily maximum) occur on 29–62% of summer days; dissolved oxygen exceedances (8.0 mg/L daily minimum) occur on 61% of summer days in the most favorable year on record. The 7-day rolling averages demonstrate

that these conditions persist for weeks or more at a time—not as transient spikes but as the sustained thermal and chemical regime driven by Project operations. The Project's diversion is a substantial proximate cause of both the thermal stress and the oxygen depletion documented herein—a conclusion supported by three independent lines of evidence: the paired-site comparison, the flow–water quality regressions, and the seasonal compliance pattern. Any new license that perpetuates comparable diversion ratios will perpetuate comparable water quality impairment.

8. SCE's Instantaneous Measurements Do Not Undermine the Logger Record

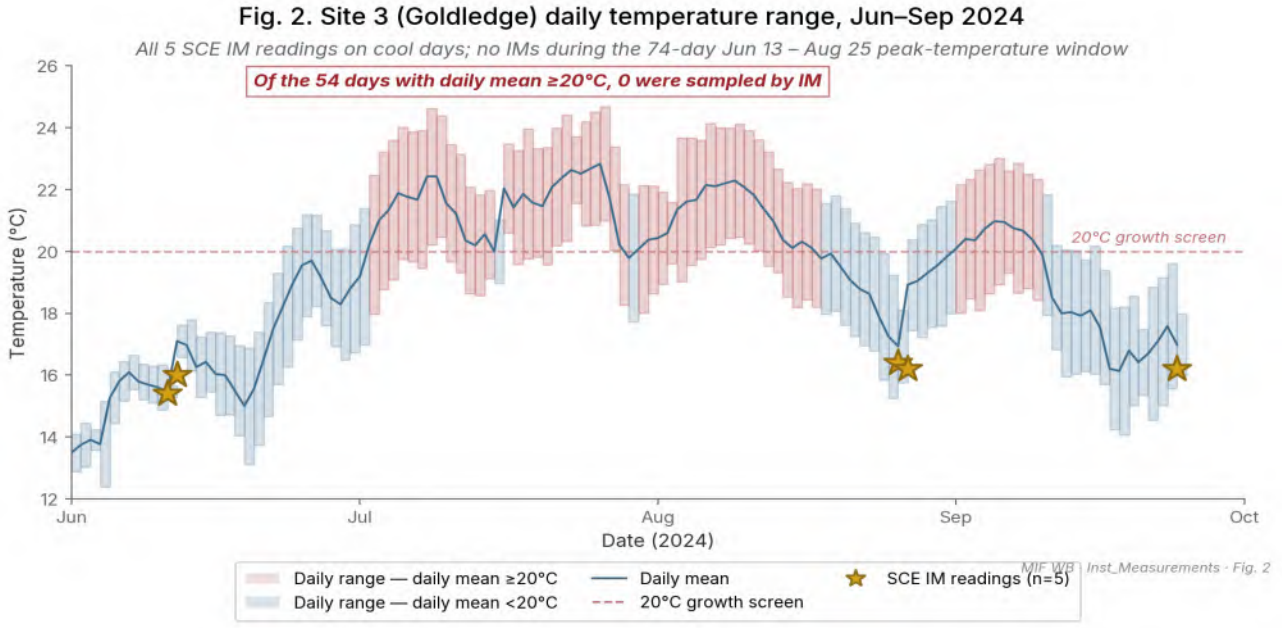
SCE has pointed to instantaneous field measurements ("IMs") taken between December 2023 and September 2024 as evidence that bypass water quality conditions comply with standards. SCE 2024a at 7-59 & 7-63. This argument should be rejected. The IMs are not inconsistent with the logger record in the values they record—on most IM dates, the IM temperature and DO values fall within the same-day logger range and are broadly consistent with the logger record. The IMs are also: too few, taken at the wrong times of year, taken at the wrong times of day, and explicitly characterized by SCE itself as logger-validation readings rather than compliance evidence. They cannot bear the weight SCE attempts to place on them.

First, the IM dataset provides no coverage of the summer's noncompliance days. Across the entire June–September 2024 period, SCE collected just five summer IM events at the compliance sites—on June 11, June 12, August 26, August 27, and September 24, 2024. SCE 2024b at WR-1 C-3, Table C-1. The five readings cluster on just three distinguishable sampling occasions (Jun 11–12, Aug 26–27, Sep 24)—a pattern of paired back-to-back visits consistent with scheduled logger-maintenance trips, *see* Appendix B.1, not independent compliance sampling. The Jun–Sep 2024 logger record at Site 3 identifies 54 days on which daily-mean temperatures equaled or exceeded the 20°C trout-growth screen—the summer's noncompliance days. SCE took zero IMs on any of them:



MIF WB at Inst_Measurements, Fig. 1

The longest gap between IM dates spans 74 consecutive days (Jun 13 – Aug 25, 2024), encompassing 45 of those 54 noncompliance days:



MIF WB at Inst_Measurements, Fig. 1

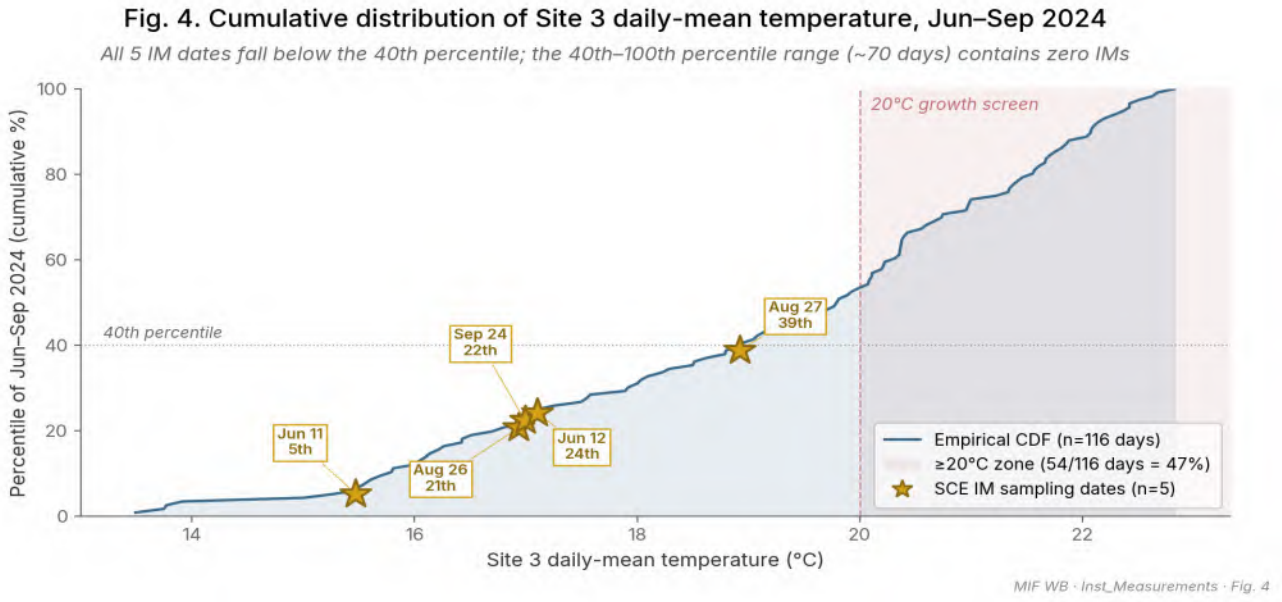
Second, the five summer IMs were taken on unusually cool days. The Site 3 daily-mean temperatures on the IM dates ranked at the 5th, 24th, 21st, 39th, and 23rd percentiles of the WY 2024 Jun–Sep Site 3 daily-mean logger record (n=116):

Site 3 Mean Temperatures on IM Days

IM Date	S3 Daily Mean Temp	Percentile
June 11	15.47	5th
June 12	17.10	24th
August 26	16.91	21st
August 27	18.92	39th
September 24	17.00	23rd

MIF WB at Inst_Measurements, Table 3.

All five IMs fell within the coolest 40% of the summer; four of the five fell within the coolest 25%:



MIF WB at Inst_Measurements, Fig.4.

Even under the framing most favorable to SCE—treating the five IMs as only three independent sampling decisions and scoring each pair at its warmer (higher-ranked) day rather than its cooler one—the joint probability that three randomly chosen sampling occasions in Jun–Sep 2024 would each, by chance, land at or below the ranks observed for SCE's IMs is approximately 2.3% (about 1 in 44). MIF WB at Inst_Measurements at Table 7. SCE may attempt to characterize this cool-day clustering as coincidence; these numbers cast

serious doubt on such an attempt. A joint probability of 1 in 44 is difficult to reconcile with random chance, and the complete absence of IMs from any of the 54 noncompliance days compounds the difficulty. Id. at Table 10.

Third, all of SCE's summer IMs were taken in the cool hours of morning. SCE provides no timestamps for its instantaneous measurements in either the WR-1 study report or the 2024 FLA. The timing is recoverable, however, from SCE's 15-minute logger records. SCE 2024f. Each summer IM date corresponds to a coincident gap in the Site 3 and Site 4 logger records when SCE crews removed and later redeployed the loggers for downloading and calibration. Every observable logger pull and redeploy event at the two compliance sites occurred between 08:15 and 11:30 in the morning:

Inferred IM Sampling Times—Logger Pull/Redeploy

Site	IM date	Logger pulled (last reading)	Logger redeployed (first reading)	Time-of-day window
Site 3	Jun 11, 2024	09:30	09:30 (Jun 12)	morning
Site 3	Aug 26, 2024	09:00	08:15 (Aug 27)	morning
Site 3	Sep 24, 2024	10:15	*(end of season)*	morning
Site 4	Jun 11, 2024	10:30	10:45 (Jun 12)	morning
Site 4	Aug 27, 2024	*Jul 26 Gap***	09:00 (Aug 27)	morning
Site 4	Sep 24, 2024	11:30	*(end of season)*	morning

***Last reading before 31-day gap: Jul 26, 23:45; first reading after re-deploy: Aug 27, 09:00.*

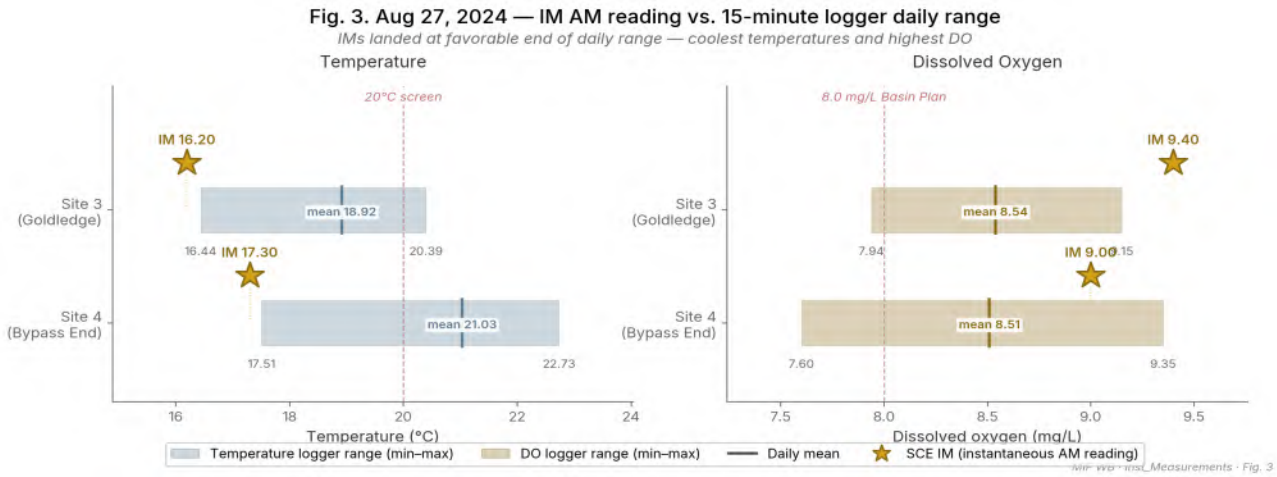
MIF WB at Inst_Measurements, Table 9.

SCE has confirmed the collection pattern: "[f]or each download, the loggers were removed from the river, taken back to the field office for downloading and calibration checks, then returned to the river later that day or the following day. When the removal/retrieval occurred on the same day, the measurements were taken several hours apart (e.g., one in the morning and one in the afternoon)." Appendix B.1.

The diurnal spread of stream temperatures is substantial: on August 26, 2024, SCE's IMs at Site 1 recorded 14.5°C at the morning logger removal and 17.7°C at the afternoon redeployment—a 3.2°C spread on a single day at a single site. SCE 2024b at WR-1 Table 1. *A single morning IM cannot represent a day's thermal conditions when those conditions vary by several degrees within the same day.* The compliance-site IMs SCE relies on captured only morning conditions; the afternoon peaks that the loggers continuously record are absent from the IM record. That SCE invokes five favorable-to-SCE morning readings against more than 11,000 continuous logger readings—without disclosing in either the FLA or the WR-1 study report that the IMs are morning readings—is itself a reason to reject SCE's reliance on them.

The Site 4 logger record discloses an even larger problem: a 31-day continuous data gap (July 26 23:45 – August 27 09:00) covering the back half of the 2024 summer. SCE has no logger record of any kind at the bypass-end compliance site for that entire month. The only Site 4 reading SCE places before the agencies for the August peak-heat period is a single morning IM taken at the moment of logger redeployment on August 27—the same morning the redeployed logger then went on to record a daily-mean temperature of 21.0°C and a daily-minimum DO of 7.60 mg/L. MIF WB at Inst_Measurements, Tables 8, 9; id. at SCE_Site4_Temp.

Fourth, even on the IM dates themselves, the continuous logger record captured exceedances that the morning IMs did not—and the IMs and loggers are broadly consistent in what each captured at the moments each captured it. For instance, on August 27, 2024, the loggers recorded a Site 4 daily-mean temperature of 21.0°C (above the 20°C trout-growth screen) and daily-minimum DO of 7.94 mg/L at Site 3 and 7.60 mg/L at Site 4 (both below the 8.0 mg/L Basin Plan standard). The morning IMs at both sites captured none of those afternoon temperature peaks or DO minimums:



MIF WB at Inst_Measurements, Fig. 3

The Aug 27 IM values fell at or near the favorable end of each site's daily logger range: at Site 3, the IM AM temperature of 16.20°C fell below the day's logger minimum of 16.44°C, and the IM AM DO of 9.40 mg/L exceeded the day's logger maximum of 9.15 mg/L. On other IM dates, the IM values fall within the same-day logger range. Id. at Table 8. The IMs are simply not inconsistent with the loggers. They are morning snapshots of relatively cool days, and they cannot capture the daily extremes that a spot measurement was never designed to capture.

Fifth, SCE itself acknowledges that the IMs were designed and employed solely "to confirm deployed data acceptability"—not as an independent assessment of water quality

compliance. SCE 2024b at WR-1 6-7. The IMs were a logger-validation protocol. They were never designed to substitute for the continuous record, and they cannot do so. And, as the record shows, the loggers are consistent with the IMs.

SCE bore the burden of developing an adequate evidentiary record of water quality conditions in the bypass reach. SCE deployed continuous loggers for that purpose; the loggers obtained more than 11,000 readings documenting sustained thermal stress and dissolved oxygen impairment. The five summer IMs SCE now invokes were collected to validate those loggers—to support the continuous record, not to substitute for it—as SCE's own WR-1 study report acknowledges. SCE 2024b at WR-1 6-7. The FLA's repurposing of those readings as compliance evidence rests on facts SCE never disclosed: that the five readings fell on the coolest days of the summer, and that they were taken at favorable-to-SCE morning hours of those days. The loggers' record cannot be displaced by validation readings whose disqualifying biases SCE never put before the agencies.

D. SCE Temperature Modeling Predicts Substantial Improvement Under CEFF-Level Flows

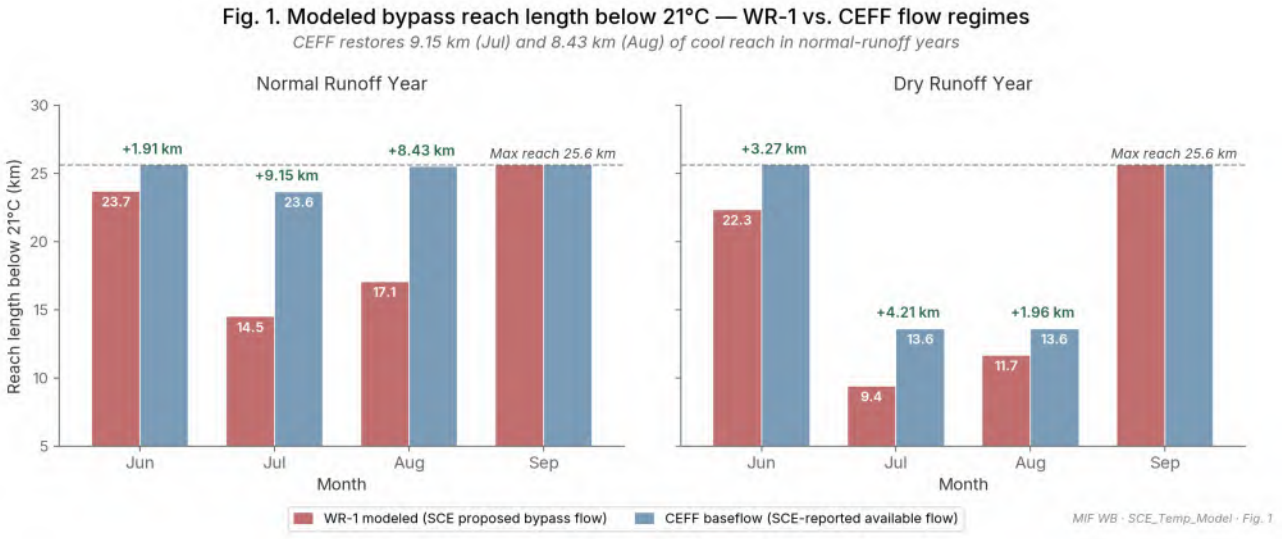
The data-logger record presented above is not the only evidence of project-attributable thermal impairment. SCE's own SSTEMP modeling—calibrated to 1989 field observations and extended at the State Water Resources Control Board's request in 1992—predicts similar impairments at the same locations. That modeling also predicts that CEFF release flows would cool the bypass 2.2–2.5°C in peak summer and restore approximately 9 km of trout habitat to below 21°C in normal-year July.

1.0 Reach Coverage: WR-1 Leaves 11+ km of the Bypass Reach Above 21°C in Peak Summer.

SCE used SSTEMP to test whether release flows can keep the 25.6 km bypass reach below 21°C—a threshold the State Water Resources Control Board specifically asked SCE to model. SCE 1993a at 1.

(The biologically operative trout-growth ceiling is 20°C, not 21°C. SCE 1991a at E-2-41; SCE 2007b at 2. SCE's use of the 21°C threshold at the water board's request thus understates project effects on biological condition. Under the 20°C threshold, WR-1 release flows would leave yet more of the bypass reach above the operative threshold than modeled.)

SCE's model produces, for each bypass flow examined, the river-kilometer downstream where the 21°C isotherm is reached. SCE 1993a at Tables 6-2 to 6-9; SCE 1991a Fig. 2-15. Interpolating between SCE's modeled flows yields the reach length below 21°C at WR-1 and CEFF release flows for each summer month and water-year type as follows:



MIF WB at SCE_Temp_Model, Fig. 1.

The same data in table form:

REACH LENGTH BELOW 21°C—WR-1 vs. CEFF (km)

Month	Year Type	WR-1 km <21°C	CEFF km <21°C	Δ km Restored
June	Normal	23.7	25.6 (full)	+1.9
July	**Normal**	**14.5**	**23.7**	**+9.2**
August	**Normal**	**17.1**	**25.5**	**+8.4**
September	Normal	25.6 (full)	25.6 (full)	0
June	Dry	22.3	25.6 (full)	+3.3
July	Dry	9.4	13.6**	+4.2
August	Dry	11.7	13.6**	+2.0
September	Dry	25.6 (full)	25.6 (full)	0

MIF WB at SCE_Temp_Model, Tables 1, 2.

***SCE's 1993a dry-year scenarios modeled release flows only up to the dry-year median above Fairview Diversion Dam—213 cfs in July, 134 cfs in August, 120 cfs in September. SCE 1993a*

at 9-10. The reach-coverage values shown are at SCE's highest modeled release for each month; SCE did not publish reach-coverage outputs for higher releases in dry years.

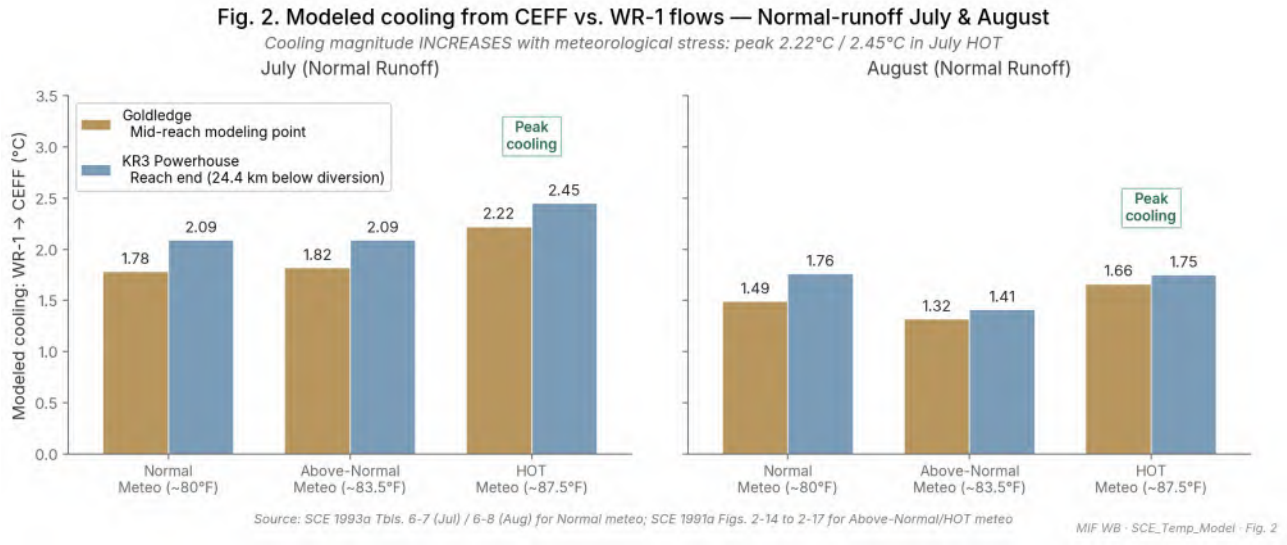
The headline normal-year findings are dispositive. WR-1 release flows would leave >11km of the bypass reach above 21°C in July (43% of the reach) and 8.5 km above 21°C in August (33% of the reach). Under CEFF release flows, SCE's model predicts ~23.7 km in July and ~25.5 km in August—restoring approximately 9 km of trout habitat to below 21°C in July and 8 km in August. SCE 1993a Tables 6-7, 6-8.

SCE's published SSTEMP outputs show the entire bypass reach below 21°C at all release flows modeled in September, in both normal and dry years. SCE 1993a Tables 6-5, 6-9. The model therefore does not produce a 21°C *reach-coverage* differential between WR-1 and CEFF flows for September; we do not extrapolate beyond what SCE published. The cooling-magnitude analysis in § 1.1, however, shows that CEFF flows continue to cool the bypass in September—by approximately 0.7°C at Goldledge and 0.9°C at KR3 over WR-1.

1.1 Cooling Magnitude: Up to 2.5°C in July Under Hot Meteorology

The reach-coverage analysis reflects SCE's outputs at fixed locations every 2-3 km along the reach. The cooling magnitude at any single point is the difference between SCE's predicted temperature at WR-1 and at CEFF for that point. We computed cooling at Goldledge (km 13.6, mid-bypass) and KR3 Powerhouse (km 25.6, low bypass), the two points closest to SCE's logger sites:

Cooling Magnitude: CEFF cooling at Goldledge and KR3 in peak summer



MIF WB at SCE_Temp_Model, Fig. 2.

TEMPERATURE COOLING (°C): CEFF FLOWS v. WR-1

Month	Runoff	Meteorology	Goldledge Cooling (°C)	KR3 Cooling (°C)
June	Normal	Normal	-1.3	-1.8
June	Dry	Normal	-1.2	-1.6
July	Normal	Normal	-1.8	-2.1
July	Normal	Above Normal	-1.8	-2.1
July	**Normal**	**HOT**	**-2.2**	**-2.5**
July	Low	Above Normal	-1	-1.2
July	**Low**	**HOT**	**-1.4**	**-1.6**
July	Dry (1993a)	Normal	-0.9	-1.0
August	Normal	Normal	-1.5	-1.8
August	Normal	Above Normal	-1.3	-1.4
August	**Normal**	**HOT**	**-1.7**	**-1.8**
August	Low	Above Normal	-0.9	-1.1
August	**Low**	**HOT**	**-1.22**	**-1.4**
August	Dry (1993a)	Normal	-0.3	-0.3
September	Normal	Normal	-0.7	-0.9
September	Dry (1993a)	Normal	-0.3	-0.3

MIF WB at SCE_Temp_Model, Tables 1, 2.

Under hot meteorology—the conditions on which threshold exceedance and biological stress are concentrated, *see* § III.B—CEFF flows would cool the bypass relative to WR-1 by 2.2°C at Goldledge and 2.5°C at KR3 in July, the peak thermal-stress month. SCE 1991a Fig. 2-15. The CEFF cooling effect grows precisely when biological exposure is greatest. Under SCE's "normal" meteorology, CEFF cooling at the same points is 1.3–1.8°C at Goldledge and 1.8–2.1°C at KR3 across June, July, and August. SCE 1993a Tables 6-6, 6-7, 6-8.

The climate trend further sharpens the comparison. SCE's modeled "hot" condition—87.5°F seven-day mean air temperature—was derived from 1980-1989 records. SCE 1991a at E-2-50. If regional summer air temperatures continue to rise, the frequency of conditions matching or exceeding SCE's "hot" boundary increases. SSTEMP cannot directly predict outputs beyond SCE's calibrated meteorological envelope; the trend within the modeled range, however, is one-directional, with CEFF cooling effects *increasing* as meteorology heats up.

1.2 SCE's Own Record Shows the WR-1 Rollback Contradicts SCE's Own Findings

SCE acknowledged in 1991 that augmented releases work in normal-runoff years:

> *Augmented releases could provide some downstream temperature benefit during normal and slightly higher than normal runoff periods. When runoff conditions*

> *are between normal and 25 percent above normal, a sufficient amount of 16 or 17°C water exists at the Fairview Diversion Dam for a controlled release to be effective in maintaining stream temperatures of 20°C or less within the diverted reach.*

SCE 1991a at E-2-62.

SCE further admitted that doubling the 1963 license release regime would extend the 20°C-or-less zone five miles further downstream:

> *The modeling also confirms that, in order to extend the influence of 20°C water temperatures another five miles downstream, the controlled release would need to be doubled.*

Id.

The implications for the present proceeding are direct, and adverse to SCE:

1. **1963 license:** 100 cfs in early July, 90 cfs in late July through August.
2. **1991 SCE recommendation:** doubling the 1963 release was needed to extend thermal-compliant habitat by five miles.
3. **1996 license:** SCE acceded to a partial doubling—July and August MIFs raised to 130 cfs based on the same SSTEMP modeling and the same biological concerns. FERC 1996b at 13-14, 41.
4. **2003 SCE conclusion (after 5 years of monitoring):** "Minimum instream flows of 130 cfs, ordered by the new license for the Project, for July and August provided the downstream water temperatures planned to protect beneficial uses. Therefore, SCE's recommendation is to maintain the current minimum instream flows contained in the license." SCE 2003a at 5-1.
5. **2026 WR-1:** SCE now proposes to roll the July and August MIFs back to 100 cfs—a 23% reduction below the 1996 license condition that SCE's own monitoring report endorsed. SCE 2024a at 7-46.

SCE has not—in the WR-1 record or anywhere else—identified any new evidence supporting a downward revision of the 1996 license condition that SCE itself endorsed in 2003. The proposed reduction is a regression without a record. In fact, CEFF summer release flows (265 cfs July, 230 cfs August) meet or exceed the approximate doubling SCE itself identified as necessary to extend thermal-compliant habitat across the bypass reach.

1.3 Dry-Year Context

In dry years, the reach-coverage analysis shows that even maximum-available flow above Fairview cannot keep the full reach below 21°C in July or August. SCE describes this directly:

> *"There is insufficient flow available during dry years for water temperatures to be kept under 21°C throughout the study reach during July."*

SCE 1993a at 26 (same finding for August).

This statement reflects supply-limited dry-year hydrology—conditions in which available cold water above Fairview Diversion Dam is too limited to keep the full bypass reach below 21°C, regardless of release flow. This bears on the dry-year scenario only. CEFF is a flow regime applied when flow is available; the supply-limited days SCE describes fall within the 33% of days for which CEFF analysis already concedes baseflows are not physically achievable. *See* § IV.C. The dry-year supply constraint does not negate the normal-year benefits set out in § 1.1 and § 1.2—restoring approximately 9 km of trout habitat to below 21°C in July and 8 km in August and cooling the bypass 2.2–2.5°C in peak summer.

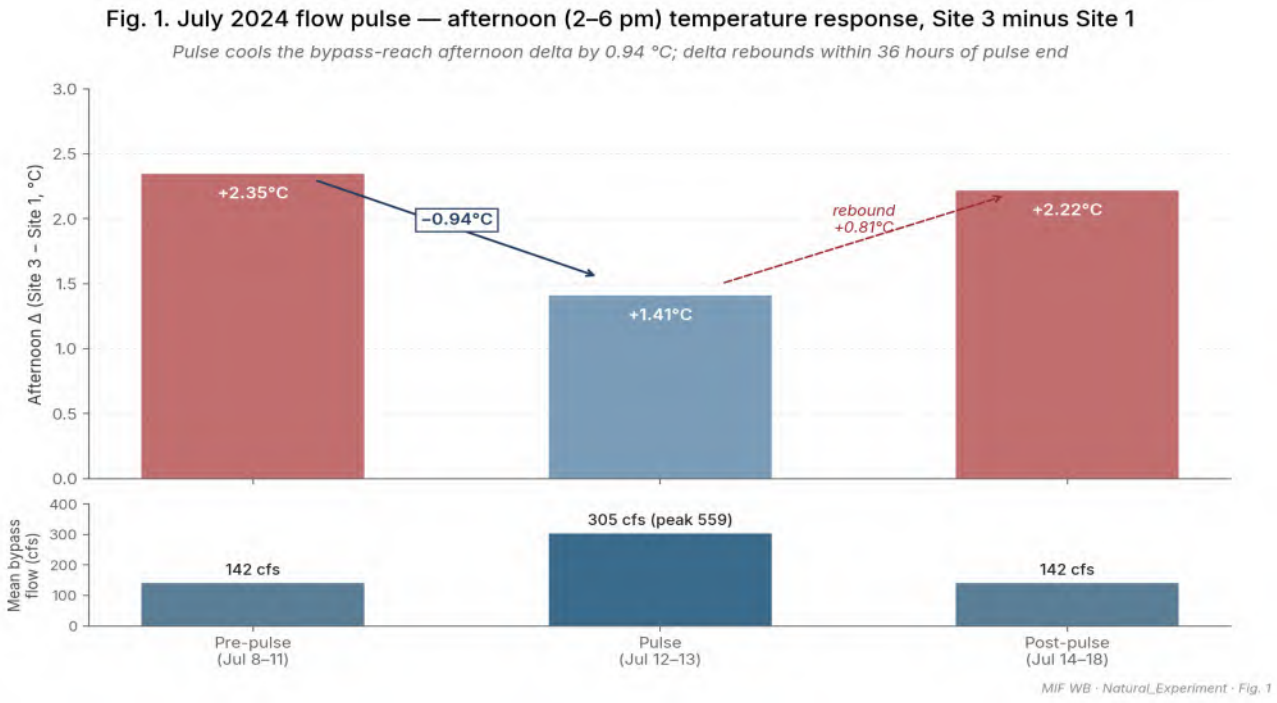
Within dry-year hydrology itself, the CEFF and WR-1 regimes diverge. CEFF baseflow targets exceed even the maximum dry-year supply above Fairview Diversion Dam—213 cfs in July, 134 cfs in August, 120 cfs in September—per SCE's own hydrology. SCE 1993a at 9. CEFF-direction operations would therefore pass the full available flow into the bypass on every dry-year day, delivering the maximum thermal benefit available under natural hydrology. WR-1 would cap bypass releases at 100 cfs in July and August and divert the surplus to the powerhouse—producing less than nature would have delivered to the bypass absent the diversion. The dry-year benefit shown by SCE's modeling—including +4.2 km of reach below 21°C in July and approximately 1°C of cooling at Goldledge and KR3—reflects this difference. MIF WB at SCE_Temp_Model, Tables 1, 2.

1.4 Methodology

The values reported above are interpolated from SCE's own published model outputs. For tabulated scenarios in SCE 1993a (Tables 6-2 through 6-9), values are read directly from the table. For figure-based scenarios in SCE 1991a (Figures 2-14 through 2-19, covering above-normal and hot meteorology), values are read from the published figures by graphical interpolation between SCE's labeled flow markers. Reading accuracy was cross-validated against tabulated 1993a values where the scenarios overlap, with reading error within ±0.1°C. MIF WB at SCE_Temp_Model, Tables 1, 2 (cross-validation results documented). The same SSTEMP/SOLAR/SHADE model is used in both 1991a and 1993a. SCE 1993a at 10. SCE field-monitored the bypass reach 1998-2002 under Article 408 of the 1996 license. SCE 2003a at 5-1.

E. The "Natural Experiment"—July 12-13, 2024 Bypass Flow Pulse

On July 12-13, 2024—during mid-summer peak thermal stress—bypass flows increased from 142 cfs to a peak of 559 cfs for 36 hours before returning to MIF levels. SCE 2026b. During afternoon hours (2-6pm), when thermal stress is most acute, the temperature delta between Site 1 and Site 3 (mid-bypass) contracted from +2.35°C down to +1.41°C—a 0.94°C reduction. When flows returned to the MIF, the delta rebounded to +2.22°C. SCE 2024f.



MIF WB at Natural_Experiment, Fig. 1. Note: DO logger data has a gap during the pulse period, precluding a parallel dissolved oxygen analysis.

This "natural experiment" provides quasi-experimental evidence—independent of statistical modeling—that bypass flow is a controllable driver of the Site 1/Site 3 temperature delta. The step-change and rebound are consistent with the mechanism CEFF-based flows would use on a sustained basis: moving operations out of the low-flow regime where warming is greatest.

The 0.94°C response to a brief pulse likely understates the equilibrium benefit of sustained higher flows. Thermal mass takes time to respond; a 36-hour pulse cannot achieve steady-state conditions. Caissie 2006a; Webb 1997a. SCE's own SSTEMP model predicts 1.8–2.2°C of cooling at Goldledge (mid-bypass) under sustained CEFF flows in July (normal to hot meteorology). SCE 1993a; MIF WB at SCE_Temp_Model, Tables 1, 2. The natural

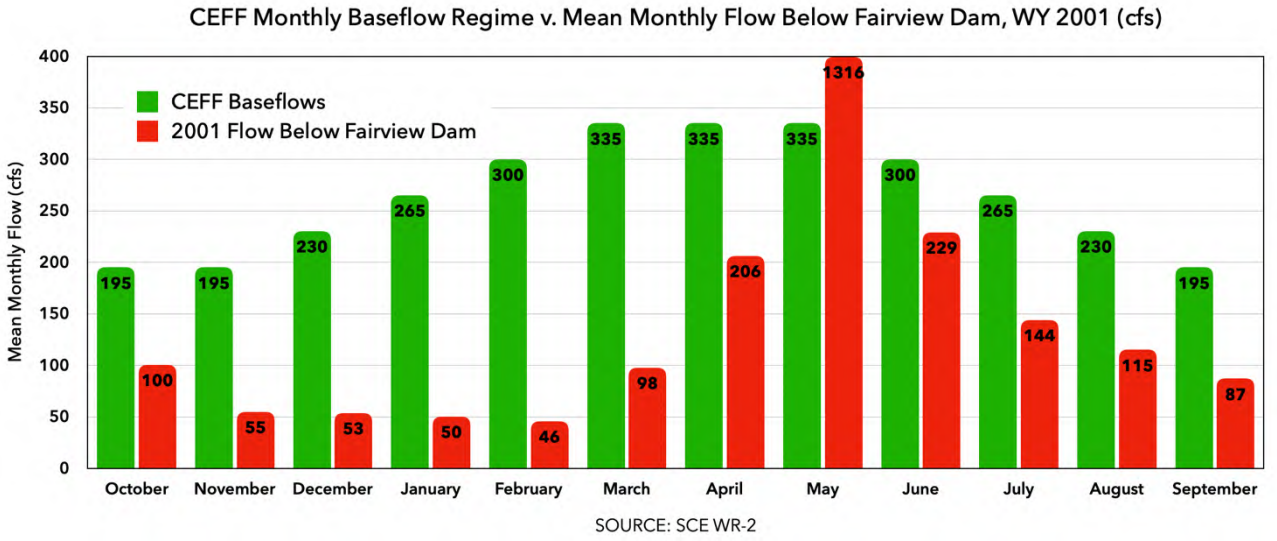
experiment's response is consistent with that prediction—demonstrating the same physics at work.

F. Sediment Accumulation Under Low Flows

SCE's KR3 sediment study (1997-2001) found that fine sediment problems in the bypass reach are associated with dry-year, low-flow conditions—precisely the conditions that SCE's proposed WR-1 MIF would perpetuate.

The study found that "in 2001, a dry water year, there was some increase in fine sediments in the riffle downstream of the sandbox," and concluded that "there is the potential that sand transport and deposition during dry year types adversely affects spawning habitat." SCE 2002a at 4-6 & xi.

In 2001—the "dry year" when the study observed sediment problems—mean flows below the dam remained below CEFF baseflow targets for 11 of 12 months, with eight months below 120 cfs. The regime SCE proposes under WR-1 would perpetuate and, in July/August, worsen these conditions.



**Y-axis capped to increase resolution; flow values provided.* SCE 2026b.

CEFF baseflows are substantially higher than the 2001 dry-year flows under which SCE documented fine-sediment accumulation; WR-1's 40–130 cfs schedule would perpetuate the low-flow regime the 2001 sediment finding implicates.

G. Benthic Macroinvertebrates

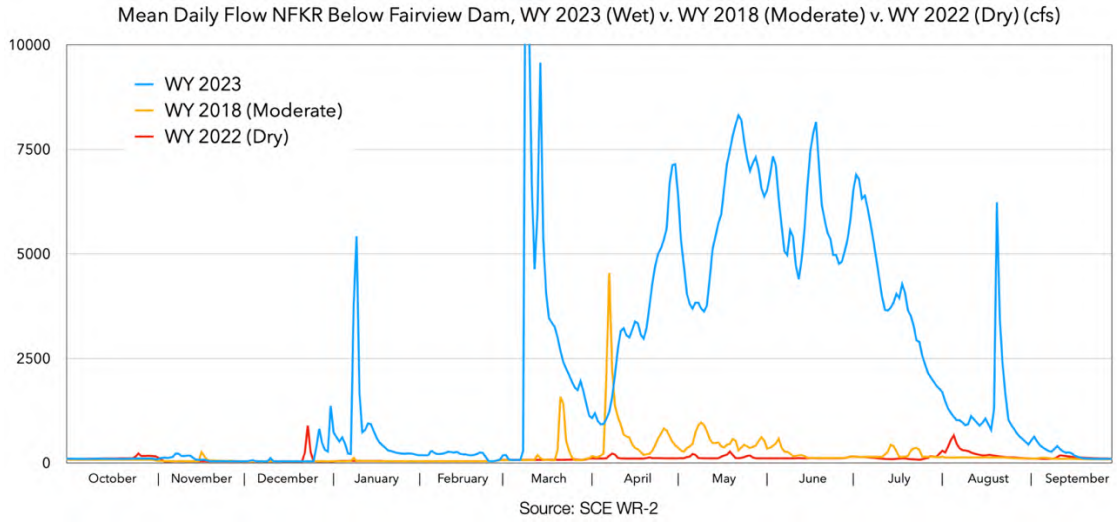
SUBSECTION FINDING

SCE relies on a single October 2023 BMI survey to claim minimal effect on aquatic ecosystems, but WY 2023 was the wettest year on record (2,116 cfs mean annual bypass flow vs. 96–152 cfs in preceding two years). A post-flood snapshot cannot characterize conditions during the moderate and dry years that dominate the historical record.

Source: SCE 2024a at 7-154; SCE 2024b at WR-2 19

SCE relies on a single October 2023 benthic macroinvertebrate (BMI) survey to assert that Project operations have "little influence" on BMI assemblages and aquatic ecosystem health. SCE 2024a at 7-154. That inference is materially stronger than the evidence supports.

WY 2023 was extreme: maximum mean daily flow of 15,641 cfs (March 10, 2023) was the second-highest recorded in the bypass reach, and mean annual flow of 2,116 cfs made WY 2023 the wettest year on record. SCE 2024b at WR-2 19. For context, mean annual flows in the immediately preceding years were 152 cfs (WY 2020), 96 cfs (WY 2021), and 108 cfs (WY 2022)—roughly 5–7% of WY 2023. Id. A single post-flood snapshot cannot characterize conditions under the moderate and dry water years that dominate the historical record and during which flow alterations most constrain habitat.



SCE 2026b (data).

All four sites—upstream control, two bypass-reach sites, and downstream of the powerhouse—returned CSCI scores in the "likely intact" category (≥0.92). SCE 2024a at 7-133, Fig. 7.4-18. That uniformity does not demonstrate benign operations. High-magnitude

flood years may cause reach-wide scouring, substrate reorganization, and recolonization from shared refugia, temporarily compressing site-to-site differences. SCE 2024d at E.4-76.

BMI results were "similar to one another" across sites. SCE 2024a at 7-112. For example, key assemblage metrics show tight ranges across all four sites (including control and bypass sites): taxonomic richness (28–33), percent EPT taxa (61–70), and percent intolerant individuals (39–57). Functional feeding-group composition is likewise broadly similar, including relatively low predator percentages (4–8%) and comparable shredder percentages (6–8%). SCE 2024c BIO-4 at C-1, C-2 & C-3. Those results are consistent with a reach-wide disturbance and reset (e.g., WY 2023 high flows causing scouring) followed by recolonization from shared sources/refugia, which can temporarily compress differences among sites.

SCE acknowledges that project water diversions, flow fluctuations, and Fairview Dam sandbox flushing "have the potential to directly affect environmental conditions within aquatic habitats by altering flow regimes and releasing sediment," and that these effects "have the potential to alter the distribution, abundance, and structure of the BMI communities." SCE 2024a at 7-155. These mechanisms are precisely the effects that manifest in moderate and dry years—when minimum flows constrain wetted area, fine sediment accumulates, and thermal stress persists. A snapshot closely following a year when bypass flows were at their 40-year highs cannot discount pathways SCE itself identifies.

H. What Improved Project Reliability Means for the Future

The historical record of observed project effects likely understates future Project effects. SCE's WR-2 study reports that KR3 experienced 2,239 days of "extended outages" during WYs 2005–2023—32% of the study period. SCE 2024b at WR-2 38. SCE acknowledges that these outages "resulted in less-than-authorized flows diverted to the water conveyance system and concurrently greater-than-MIFs flows remaining in NFKR." Id. at 9. SCE developed a "theoretical hydrology" dataset that excludes extended outages, reassigning flows to the conveyance system up to authorized capacity and reducing bypass flows commensurately. Id. at 9–10. SCE's recreation analysis follows the same logic: SCE excluded "times when SCE was not diverting due to maintenance or other operational outages" from boating-opportunity calculations. SCE 2024a at 7-266 n.36. The observed bypass-flow record incorporates substantial outage-period relief from project diversions.

The largest outage was a major capital rehabilitation, not routine maintenance. From August 2013 to mid-December 2014—sixteen months—the Project was offline for "upgrades and repairs at Fairview Dam and along water conveyance system." SCE 2024a at 7-269. The water conveyance system is the Project's largest component: 13 miles of buried

concrete-lined arched tunnels, covered and open concrete box flumes, a metal siphon, forebay, and penstocks. Id. at 5-23 to 5-25. Other reduced-generation periods on the same page reflect similar discrete capital events: a new cooling water system installation in spring 2005; automation upgrades from September 2010 to February 2011; Unit 1 repairs in fall 2022. Id. at 7-269. These are non-recurring upgrades to core Project infrastructure—not the operational relief periods that should be assumed to occur during the next license.

SCE's hydro fleet operates at 86.6% equivalent availability fleet-wide, with capital improvements credited as having "been effective in improving the performance of SCE's Generation fleet." SCE 2023a at 14–16 & n.18. The agencies should not assume that the current license's 32% extended-outage rate—inflated by the dam and conveyance rehabilitation and other discrete capital events—represents future operations. As Project reliability returns to fleet norms, diversions will increase and bypass flows will decrease. The flow alteration documented by CEFF analysis and the fish and water quality impairments documented above will persist longer or worsen—not improve—under more reliable future operations. The record accordingly argues for stronger protections, not weaker ones.

IV. HYDROLOGY—MEANINGFULLY IMPROVED CONDITIONS ARE POSSIBLE

SECTION SUMMARY

Inflow at Fairview Dam satisfies CEFF baseflows on 67% of days; observed bypass flows meet them on only 31%—a 36-percentage-point gap attributable to diversion. SCE's WR-1 would meet CEFF baseflows on only 23% of days, increasing the gap to 43 points.

The bypass reach is underwatered because the Project makes it so—not because inflow is absent. This is an allocation problem, not a supply problem.

Source: MIF WB at Hydro, Table 2; SCE 2025a.

Meaningful improvement of bypass-reach conditions does not require restoration of natural inflows. It requires reallocation of water already arriving at Fairview Dam. SCE's own CEFF analysis, hydrological dataset, and 1995 multiagency planning record all confirm that the dam routinely receives flows substantially exceeding the bypass MIF. A recent public statement attributed to CDFW Central Region Program Manager Gerald Hatler—that '[e]ven if you took the Fairview Dam out entirely, it wouldn't improve the native fishery that much' (Henry 2025a)—is contradicted by that record. We address the evidentiary basis because the statement has surfaced in this proceeding.

Our CEFF-based MIF proposal is fundamentally an allocation question at the diversion point, not a claim that CEFF baseflows are universally available in all years. But the premise of any "not enough water" argument—that increased flows would not improve conditions—is refuted by SCE's own studies and monitoring data.

A. A Cold-Water Fishery Can Exist Here

The 1995 Upper Kern Basin Fishery Management Plan—to which CDFW is a signatory, reaffirmed in the 2005 amended settlement—stated unequivocally: "The Kern River in this reach is capable of producing a self-sustaining wild trout fishery when water temperature and flows are improved." USFS et al. 1995a at IV-4.

The CEFF framework provides the scientific methodology to quantify what "improved flows" means. SCE's own CEFF analysis confirms that the bypass reach is operating in an altered condition for three of the five functional flow components that define a healthy river—wet-season baseflow, dry-season baseflow, and fall pulse magnitude. SCE 2024a at 7-129 to 7-132, 7-137. By definition, restoring those metrics toward natural conditions through ecologically adequate environmental flows and other measures established by CEFF would reduce flow alteration and improve ecological function. CEFWG 2021a at 9.

The evidence below shows that the claim 'removing the dam wouldn't improve the native fishery that much' is not a scientific proposition but a policy position—and one that contradicts the Department's own prior findings, SCE's own CEFF analysis, and the basic logic of the CEFF framework. If diversion alters a majority of flow metrics that support ecological function, then reducing that alteration will improve conditions.

B. SCE's Own Hydrology Supports a CEFF-Based MIF

SCE's CEFF analysis makes this distinction explicit. SCE compares (a) modeled natural flow, (b) observed "unimpaired" flow (i.e., flow expected in the river system absent diversion), and (c) observed bypass flow below Fairview Dam. SCE 2024a at 7-45 & 7-128 fn. 21. That is exactly the hydrologic question at issue here: when inflow meets CEFF baseflows or fall pulses but the bypass does not, the difference is not a lack of water—it is diversion.

SCE notes that CEFF natural functional flow metrics are not, by themselves, "flow recommendations." SCE 2024a at 7-127. SCE further identifies the CEFF functional flow components applicable to the NFKR, including fall pulse flow, wet-season baseflow, and dry-season baseflow. SCE 2024a at 7-128. Critically, SCE then acknowledges that since Fairview Dam has no meaningful storage and a diversion capacity of 600 cfs, observed flows below the dam appear similar to modeled natural flows for some metrics. However:

- "the diversion at Fairview Dam reduces the summer and winter base flows relative to modeled natural flows," and reduces the magnitude of some smaller fall-pulse flows. SCE 2024a at 7-129.
- The wet-season baseflow and dry-season baseflow components are lower than modeled natural flows and identified as altered. SCE 2024a at 7-130 to 7-132, 7-137.

In other words, SCE's own CEFF analysis supports the core hydrologic premise of a CEFF-based MIF: the bypass reach is frequently operated in a baseflow-depleted condition relative to the natural/unimpaired water arriving at the dam. Reallocating a portion of inflows to the bypass can produce meaningful change.

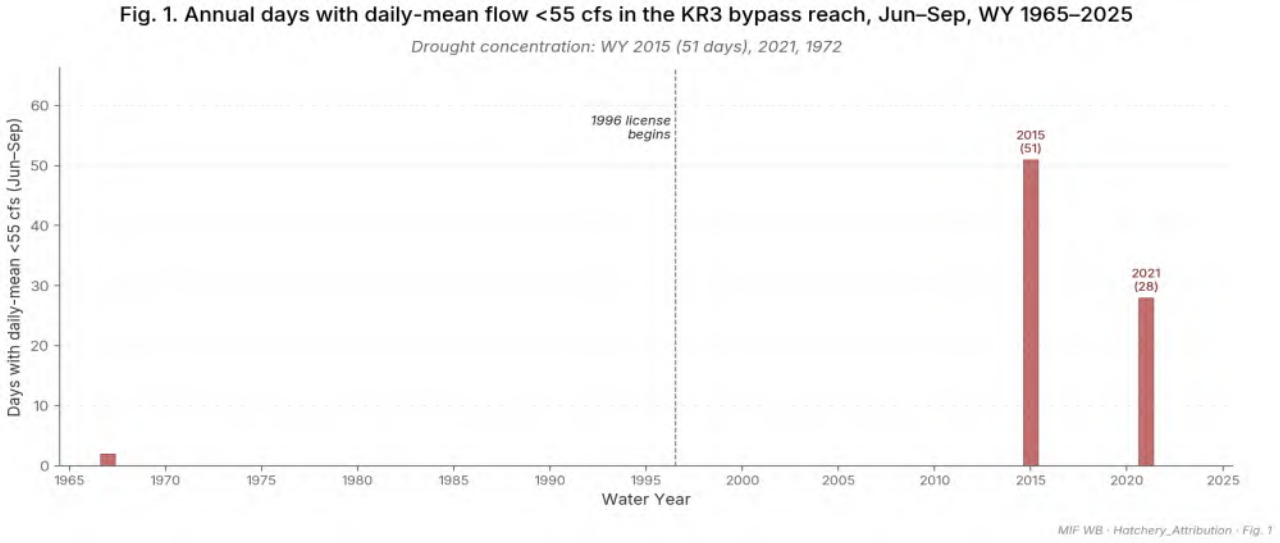
The hydrologic signature of the post-1996 hatchery-flow increase is visible in the historical record. Prior to 1996, the project operated under a regime where it diverted 20 cfs for hatchery operations—a quantity that was not sufficient for generation. SCE 1991a at E-3-7. In 1996, that figure was increased to 35 cfs—and expanded again to 40-45 cfs in 2004—specifically to permit generation by providing flows above the hydraulic minimum. FERC 1996a at 5; SCE 2024a at 5-26, 5-36. The resulting decrease in bypass flows produced a significant increase in extreme low-flow summer days in the bypass. In the 32 years before 1996, mean daily bypass flows fell below 55 cfs on just two Jun–Sep days, both in 1967. In the 29 years since, that figure has risen to 79 days from two years—51 in 2015 and 28 in 2021:

Jun–Sep Days Below Threshold, NF Kern Bypass Reach (USGS 11186000):

Period	Years	<65 cfs	<60 cfs	<55 cfs	<50 cfs	<45 cfs	<40 cfs
Pre-1996 license (WY 1965–1996)	32	63	31	2	1	1	1
Post-1996 license (WY 1997–2025)	29	98	90	79	74	62	46

MIF WB at Hatchery_Attribution, Section A.

The following figure presents the numbers of days per year mean bypass flows dropped below 55 cfs from 1965 to 2025:



MIF WB at Hatchery_Attribution, Fig. 1.

In the post-1996 record, every Jun–Sep day where bypass flow fell below 55 cfs coincided with simultaneous KR3 conveyance diversion of at least 41 cfs. Avoiding these extreme summer low-flow days is therefore an allocation question, not a question of available water.

C. The CEFF "Missed Opportunity" Analysis

Substantial water routinely arrives at Fairview Dam when the bypass is held at low flows: In six of twelve months, more than half of median inflows are diverted; in three others, the diversion locks bypass flows at the current MIF:

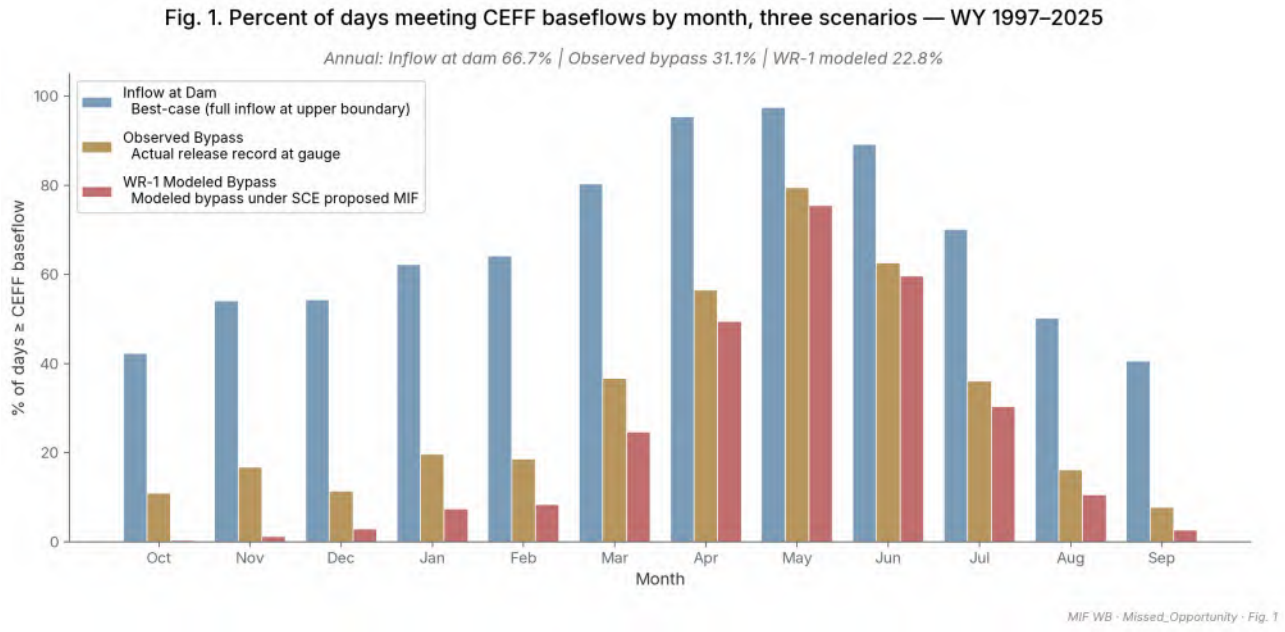
Median Monthly Flows, WY 1997-WY 2025

Month	Median Inflow	Median Bypass	Median Diversion	% Diverted
Oct	169	98	42	25%
Nov	219	61	106	48%
Dec	242	54	166	69%
Jan	297	57	209	70%
Feb	349	62	279	80%
Mar	563	205	307	55%
Apr	912	507	510	56%
May	1644	1220	558	34%
Jun	1131	671	493	44%
Jul	446	155	259	58%
Aug	230	142	61	27%
Sep	160	113	42	26%

MIF WB at Hydro, Table 1.

This is the hydrologic fingerprint of a diversion-dominated system. Bypass flows are low because the Project makes them low, not because inflow is absent.

Missed Opportunities: CEFF Compliance Analysis. The following figures show the percentage of days per month that daily mean flows satisfy CEFF baseflows, based on the hydrology of the current license term (WY 1997–2024), for three flow series: (1) unimpaired inflow to Fairview Dam, (2) observed flow below Fairview Dam, and (3) SCE's proposed WR-1 scenario applied to historic inflows:



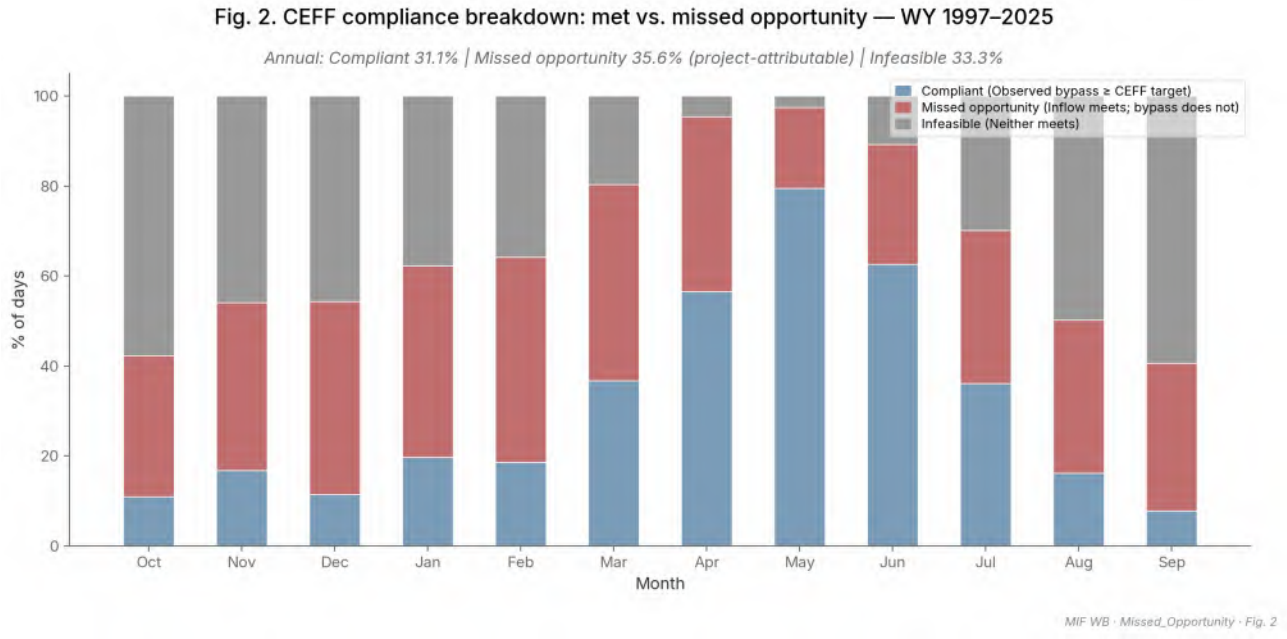
MIF WB at Missed_Opportunity, Fig. 1.

The delta between (1) and (2) or (3) represents "missed opportunities"—times CEFF baseflow targets could have been met in the past (or in the future under WR-1) but were not met due to allocation decisions, not natural hydrology:

Days Mean Flows Satisfy CEFF: Inflows, Bypass Observed, Bypass WR-1 Modeled

Month	CEFF Target (cfs)	n days	Inflow %	Observed %	WR-1 %	Gap (Obs)	Gap (WR-1)
Oct	195	899	42%	11%	0%	**31%**	**42%**
Nov	195	870	54%	17%	1%	**37%**	**53%**
Dec	230	899	54%	11%	3%	**43%**	**51%**
Jan	265	899	62%	20%	7%	**42%**	**55%**
Feb	300	819	64%	19%	8%	**46%**	**56%**
Mar	335	899	80%	37%	25%	**44%**	**56%**
Apr	335	870	95%	57%	49%	**39%**	**46%**
May	335	899	97%	79%	75%	**18%**	**22%**
Jun	300	870	89%	63%	60%	**27%**	**30%**
Jul	265	899	70%	36%	30%	**34%**	**40%**
Aug	230	899	50%	16%	11%	**34%**	**40%**
Sep	195	870	41%	8%	3%	**33%**	**38%**
ANNUAL	**—**	**10592**	**67%**	**31%**	**23%**	**36%**	**44%**

MIF WB at Missed_Opportunity, Table 1.



MIF WB at Missed_Opportunity, Fig. 2.

All told, across WY 1997–2025, inflow at Fairview Dam satisfies CEFF baseflows on 67% of days, while observed bypass flows meet them on only 31% of days—a gap of 36 percentage points attributable to diversion allocations.

SCE's WR-1 Proposal Would Increase Missed Opportunities. Missed opportunities will increase under WR-1's proposed reduction in summer MIFs. SCE proposes lowering July and August flows from 130 cfs to 100 cfs—a 23% reduction during the hottest, most flow-limited

period of the year. SCE 2024a at 7-46. It does little for increasing bypass flows in May and June, months when snowmelt typically overwhelms diversion capacity, causing bypass flows to greatly exceed the MIF. Median bypass flow in May is 1220 cfs, and in June it is 671 cfs. MIF WB at Hydro, Table 1.

Further, the project experienced extended outages on 32% of days between 2005 and 2023. SCE 2024b at WR-2 38. During outages, water that would otherwise be diverted passes through the bypass reach, temporarily improving conditions. If plant reliability improves in the next license term, bypass conditions will become more persistently constrained than the historical record suggests.

D. Higher Flows Would Meaningfully Improve Conditions

The evidence presented in Section III demonstrates that additional flow would produce measurable ecological benefits. Every flow-sensitive line of evidence in SCE's record points in the same direction: higher bypass flows would materially improve temperature, dissolved oxygen, habitat, and sediment-transport conditions.

Dissolved oxygen. The flow-DO relationship is strong and systematic ($R^2 = 0.68$). At summer WR-1 flows (100-130 cfs), the bypass reach carries a DO deficit of 0.3-0.8 mg/L relative to the upstream control; at CEFF flows (200-335 cfs), the regression supports a substantially reduced deficit. Higher flows would meaningfully reduce the frequency and severity of Basin Plan exceedances that currently occur on 61% of summer days—reaching 100% every month from July through September. *See* § III.C.

Water temperature. The flow-temperature relationship is equally robust ($R^2 = 0.68$-0.69). *See* § III.B. Under SCE's published modeling, CEFF release flows would restore approximately 9 km of trout habitat to below 21°C in normal-year July and 8 km in August—and would cool the bypass 2.2°C at Goldledge and 2.5°C at KR3 in July under hot meteorology, when biological thermal stress is greatest. SCE 1991a Fig. 2-15; SCE 1993a Tables 6-7, 6-8; *see* § III.D.

Fish habitat. SCE's IFIM model shows that adult trout habitat increases steeply with flow up to approximately 200-300 cfs, then plateaus. CEFF baseflows (195-335 cfs) sit on that plateau; WR-1 flows (40-130 cfs) occupy the steep, limiting portion of the curve—providing far less habitat than the channel could support. *See* § II.E.

Sediment transport. SCE's own sediment study identifies fine sediment accumulation as a recurring problem during dry-year, low-flow conditions—precisely the regime WR-1 would perpetuate. CEFF baseflows and the proposed fall pulse provide substantially higher flows than the dry-year regime under which SCE documented sediment accumulation; WR-1 does not. See § III.F.

The Mechanism of Recovery. CEFF flows do not work by some general invocation of "more water"; they operate through specific, identifiable mechanisms. Higher bypass flows directly lower water temperature (SSTEMP predicts 2.2-2.5°C of cooling in peak summer), raise dissolved oxygen (the flow-DO regression confirms the dependency), and increase successful sediment transport. Cooler water with adequate DO restores conditions where trout can grow rather than thermally stress. Greater wetted area expands available habitat—moving operations off the steep, limiting portion of the IFIM habitat curve and onto the optimum plateau. Sustained baseflows enable longitudinal connectivity between thermal refugia, allowing fish to move between cooler microhabitats during peak stress. Adequate flows transport fine sediment that otherwise smothers spawning gravels, restoring substrate for reproduction. Each of these effects is documented in SCE's own studies. Together they address the chronic flow bottleneck that SCE's record strongly implicates in the population collapse, providing the hydrologic foundation necessary for trout and the wider aquatic food web to recover.

SCE's own studies confirm that higher flows would meaningfully improve conditions. On this record, SCE has not shown that WR-1 remedies the impairments those studies document.

E. Hatchery Flow Precedence Drives Sub-MIF Days and WR-1 Does Not Address It

The post-1996 record establishes that hatchery flow precedence over the bypass MIF is the dominant mechanism producing extreme low-flow summer days in the bypass. See § IV.B (79 post-1996 Jun–Sep days in two drought years with mean bypass flow below 55 cfs, compared to two such days in the entire 32 years before 1996; every post-1996 sub-55-cfs day coincided with simultaneous hatchery diversion of at least 41 cfs). The depletion concentrates in the hottest periods of the driest years—exactly the conditions in which the bypass already shows chronic temperature exceedances (Site 4 daily maximum above 24°C on 62% of summer days; Site 3 daily mean above 20°C on 64% of summer days, see § III.B) and chronic DO violations (100% of Jul–Sep paired days at Site 3 below 8.0 mg/L, see § III.C). The precedence structure pushes the bypass below its nominal MIF in precisely the windows where the bypass is least able to absorb the reduction.

CDFW stocks the bypass annually with hatchery-raised rainbow trout to support the put-and-take fishery. SCE 2024c at ANG-1 22; USFS 1994a at Affected Environment - 83 (designation-era characterization of "a hatchery supported catchable trout fishery"). When operational, CDFW uses the hatchery as a planting base. SCE 2024a at 5-36. However, the stocking program is itself temperature-limited: CDFW halts stocking when water temperatures exceed 75°F (24°C). SCE 2017a at 4-5. The Site 4 daily-maximum record shows the bypass exceeds the 24°C stocking-cutoff threshold on 62% of summer days; the 24°C threshold is the same one § III.B documents as the acute-stress threshold. The

precedence structure therefore depletes bypass flow during the same hot-dry periods that already shorten the stocking window—undermining the conditions the hatchery's own product needs both to survive release and to remain available for stocking in the first place.

On the present record, no party has demonstrated that hatchery flow precedence is necessary in the form it currently takes. SCE's own 2016 recommendation contemplated investigation and implementation of measures to reduce hatchery diversions, on the express ground that those measures "would potentially increase flows in the NFKR below Fairview dam, especially during the critical summer months when natural inflow is less than 135 cfs." SCE 2017a at 5-3 to 5-4. WR-1 includes no such measure. The managing agencies have authority—independent of the question of whether the present MIF is adequate—to address the precedence structure that, on the present record, materially aggravates the bypass-reach impairments documented above.

F. Conclusion: This Is an Allocation Problem, Not a Supply Problem

SCE acknowledges that diversion reduces summer and winter baseflows relative to modeled natural flows, and that baseflow components are identified as altered in the bypass reach. The missed-opportunity analysis translates that admission into the most decision-relevant metric for a CEFF-based MIF: the frequency of days when baseflows are physically achievable at the dam but are not delivered to the bypass reach.

Those missed opportunities occur across the entire current license term, including in the very seasons where baseflow support is most needed to avoid chronic, Project-induced low-flow conditions. They will increase under SCE's license proposal—not just due to the likelihood of improved project reliability, but because WR-1 reduces summer flows in favor of spring flows that already exceed the MIF due to snowmelt overwhelming the project's diversion capacity.

A CEFF-based MIF would convert a substantial share of existing inflow days from diversion to instream flow, producing material hydrologic change below Fairview Dam with predictable, concrete benefits.

V. SCE'S PROPOSAL FAILS TO PROTECT PUBLIC TRUST RESOURCES

SECTION SUMMARY

WR-1 ignores SCE's own scientific findings:

- CEFF analysis: 60% of functional flow components are altered
- IFIM model: WR-1 flows on steep, limiting portion of habitat curve
- SSTEMP model: CEFF flows would cool river 2.2-2.5°C in peak summer

WR-1 proposes to deliberately warm the river to benefit hardhead—a species not detected since 1998. WR-1 reduces July-August flows from 130 to 100 cfs during peak thermal stress.

Source: SCE 2024a-d; Section III.

SCE's proposed Measure WR-1 would establish minimum instream flows for the next license term that are generally unchanged from—and in key respects worse than—the regime that has governed this river for sixty years. SCE justifies WR-1's reduction in the July/August MIF as benefiting aquatic resources by "providing flows that mimic the natural conditions to which native species are adapted." SCE 2024a at 7-138. This justification is contradicted by SCE's own studies. It is also inconsistent with the river's Wild and Scenic designation and contrary to decades of agency management direction.

A. WR-1 Ignores SCE's Own Scientific Findings

SCE's relicensing studies document a river in ecological collapse: trout populations down 97-99%, dissolved oxygen below Basin Plan objectives on 61% of summer days—reaching 100% every month from July through September—water temperatures chronically exceeding growth-stress thresholds, and three of five CEFF functional flow components—the essential ingredients for a healthy river—altered. *See* § III. WR-1 responds to none of this. SCE proposes essentially the same flow regime (far below CEFF baseflows) that produced these outcomes—and in summer, even lower flows than the current license requires.

SCE has not identified any record-based hydrologic scenario in which WR-1 achieves Basin Plan compliance, and the available record indicates WR-1 would fail under even favorable hydrologic conditions. A natural test of WR-1's adequacy is to ask: under what hydrologic

conditions, if any, would WR-1 produce Basin Plan compliance? The record does not identify any.

WY 2024 was the 10th wettest year in the 29-year record, with mean annual inflow at 152% of median. Even under that favorable hydrology, paired-day data show DO objective exceedances on 61% of summer days at Site 3 (mid-bypass) and temperature exceedances on 75% of summer days at Site 4 (low-bypass). See §§ III.B, III.C. The flow-DO regression ($R^2 = 0.68$, $p < 0.001$) and flow-temperature regression ($R^2 = 0.68–0.69$, $p < 0.001$) establish that lower flows produce worse water quality—a relationship corroborated by SCE's SSTEMP model and by direct observation during the July 2024 flow pulse. See §§ III.B, III.C, III.E.

WR-1 reduces July–August minimum flows from the current 130 cfs to 100 cfs—below the 135 cfs mean bypass flow already observed on DO exceedance days. *See* § III.C. SCE itself predicts that under WR-1, "water temperatures in August would increase up to 1°C." SCE 2024a at 7-140. SCE's SSTEMP modeling establishes the inverse: CEFF release flows would cool the bypass 2.2–2.5°C at Goldledge and KR3 in July under hot meteorology and would restore approximately 9 km of trout habitat to below the 21°C threshold the State Water Resources Control Board itself directed SCE to model. *See* § III.D. WR-1 fails that threshold across 11+ km of bypass reach in normal-year July; CEFF satisfies it across nearly the full reach.

WR-1 will therefore likely increase both the frequency and magnitude of exceedances already documented at current flows—a worsening SCE itself has acknowledged. SCE has not identified a hydrologic scenario in which WR-1 achieves compliance with applicable water quality standards. A flow regime that fails under favorable conditions cannot become protective under unfavorable ones.

On SCE's own component-level findings, WR-1 leaves each of the three altered CEFF functional flow components uncorrected:

Altered CEFF component	SCE's alteration finding	WR-1 response
Dry-season baseflow	56 cfs observed median; 71% below 195 cfs natural median	No remedy. WR-1 sets dry-season MIFs at 40–100 cfs and reduces July–August from 130 cfs to 100 cfs.
Wet-season baseflow	91 cfs observed median; 73% below 335 cfs natural median	No remedy. WR-1's May–June 130 cfs target is well below 335 cfs; winter MIF remains 40 cfs.
Fall pulse magnitude	200 cfs observed median; 60% below 506 cfs natural median	No remedy. WR-1 contains no enforceable fall pulse pass-through.

A flow proposal that does not reach any of the components SCE's own analysis identifies as altered—and that further reduces the July–August floor during peak thermal stress—cannot be characterized as a CEFF-responsive remedy. SCE 2024b at WR-2 28–30; SCE 2024a at 7-129 to 7-130.

SCE's own monitoring track record falsifies its 2017 expectation that trout would rebound under improved hydrology. The 2017 fish monitoring report stated: "Survival and recruitment of rainbow trout should increase when more favorable hydrologic and environmental conditions return spawning and rearing habitat to a more normal condition." SCE 2017a at 5-1. WY 2017–2019 and WY 2023 produced favorable hydrology. Rainbow trout did not recover. SCE itself now characterizes the pattern as "monitoring has shown declining recruitment of rainbow trout in recent years." SCE 2024d at E.4-58. SCE's own predicted trajectory has been falsified by its own subsequent monitoring. WR-1 nevertheless rests on the premise that operationally similar conditions, with summer flow further reduced, will be adequate. That premise is not supported by SCE's prior predictive track record on this reach.

B. SCE's "Natural Hydrograph" Justification Is Misplaced

SCE claims WR-1 would "enhance conditions for native species by shifting the timing of greater MIFs from the summer months of July and August to the spring months of May and June to align with the spring snowmelt and the natural hydrograph." SCE 2024a at 7-138. This argument fails on multiple grounds.

Mimicking shape is meaningless when magnitude is inadequate. The natural hydrograph has higher flows in spring and lower flows in late summer—but it also has far higher baseflows than WR-1 proposes in every season. CEFF analysis shows natural wet-season baseflow is 335 cfs; WR-1's wet-season baseflow months (March–May) range from 80 to 130 cfs. Natural dry-season baseflow is 195 cfs; WR-1's dry-season baseflow months (September–November) range from 40 to 100 cfs. *See* § II.B. Rearranging inadequate flows to better match the seasonal shape of the natural hydrograph does nothing to address the magnitude deficit that drives the impairment documented in Section III. *See* § III.

The bypass reach already experiences seasonal flow patterns through natural spill. In most years, spring inflows exceed KR3's 600 cfs diversion capacity, producing uncontrolled spill that naturally elevates bypass flows during May and June. Median observed bypass flows during the current license term already reach 1,220 cfs in May and 671 cfs in June—five to nine times the proposed 130 cfs MIF, and seven to twelve times the current 100 cfs. MIF WB at Hydro, Table 1; *see* § IV.C. WR-1's nominal "spring increase" therefore rarely binds. By contrast, July and August median bypass flows are 155 cfs and 142 cfs respectively—within or just above SCE's operational buffer over the current 130 cfs MIF, indicating that the current MIF is the binding constraint in those months. Id.

Holding operational assumptions constant for both regimes—each running at MIF + 10 cfs buffer, empirically validated against SCE's compliance practice during the current license period (WY 1997–2025), MIF WB at Hydro, Table 9—WR-1 grants SCE additional July–August diversion authority at a rate of more than two days for every one day it raises May–June bypass: a 2.6× ratio of expanded summer diversion to constrained spring diversion. MIF WB at Hydro, Table 7. WR-1 is, in operational substance, a 30 cfs swap: expanded summer diversion when bypass thermal stress is greatest, in exchange for a nominal spring MIF increase the bypass already routinely exceeds.

SCE's own CEFF analysis contradicts the "mimic natural conditions" claim. SCE's CEFF Section A analysis found three of the five CEFF functional flow components for the bypass reach are "likely altered"—fall pulse magnitude, wet-season baseflow, and dry-season baseflow. SCE 2024a at 7-129 to 7-132 & 7-137. Spring peak flows and spring recession—the two components WR-1 purports to "align with the natural hydrograph"—were not classified as altered. Id. That is unsurprising: in most years, snowmelt inflow exceeds KR3's 600 cfs diversion capacity, and uncontrolled spill carries spring flows past Fairview Dam regardless of the MIF. WR-1's promise to "shift greater MIFs" to May and June therefore targets components that are not impaired, while doing nothing for the three components SCE itself classifies as altered. A flow regime that produces "likely altered" conditions across three of five components is not "mimicking" anything natural. WR-1 would perpetuate those alterations for another fifty years.

C. WR-1 Trades Documented Cold-Water Harm for Speculative Native-Fish Benefit

The premise of WR-1 is that warming the bypass will benefit the native fish assemblage. On SCE's own data, the premise fails species by species:

Species	SCE's WR-1 rationale	Empirical record under current bypass conditions	KR3 species-specific modeling
Hardhead	Named individually as the warming beneficiary; "transitional zone" species. SCE 2024a at 7-79, 7-140, 7-150.	Not observed in the bypass since 1998. SCE 2024a at 7-99, Table 7.4-2; Id. at 7-150.	None. SCE has produced hardhead PHABSIM only in the parallel KR1 record (adult WUA peak 150 cfs). SCE 2026d at 7.4-4 to 7.4-5.
Sacramento pikeminnow	Native cyprinid characterized as having "higher water temperature preferences than trout or Sacramento suckers." SCE 2012a at 30.	Densities have been "consistently low under the current license period." SCE 2024a at 7-150.	None.
Sacramento sucker	Numerically "dominant species across all sites" in 2023. SCE 2024a at 7-100.	Biomass at Hospital Flat declined approximately 98% across the current license period. SCE 2017a at 4-3, Table 4-5.	None. SCE 1991a's IFIM modeled rainbow and brown trout only. SCE 2024d at E.4-10 to E.4-11.

The bypass is already routinely warmer than the trout cold-water criterion of 20°C in July and August. *See* § III.B. As such, hardhead, pikeminnow, and suckers should be thriving. SCE's own fish monitoring data shows the opposite. The species individually touted as the warming beneficiary is not there. The other named native cyprinid has been consistently low. The numerically present native (suckers) is biomass-collapsed.

WR-1's stated rationale for warming the bypass is the latest in a series of shifting characterizations SCE has applied to flow regimes that justify operations near current scale. SCE retrospectively characterizes the existing 1996 MIF as "developed to balance the needs of trout and native hardhead." SCE 2024a at 7-124. But the contemporaneous 1991–1996

record uniformly disagrees. It characterized the schedule as a trout-fishery and cold-stream-temperature measure. SCE 1991a at E-2-62 (existing flows adopted "to provide adequate water temperatures during summer for the maintenance of a put-and-take trout fishery"); Id. at E-3-6 (releases "designed to alleviate agency concerns over the availability of adequate fishery habitat and over the potential for elevated instream temperatures"); FERC 1995a at 25–26; FERC 1996a at 24–25; FERC 1996b at 14. SCE's 2024 "balance" assertion specifically identifies IFIM results for rainbow trout and brown trout as support—but no hardhead, no other warm water species. SCE 2024a at 7-124. The broader pattern of shifting justification is addressed at § IX.C.

1. The species individually named as the warming beneficiary has not been observed in the bypass since 1998

The FLA passages that justify WR-1's contemplated warming consistently identify a single species as the temperature beneficiary—hardhead. SCE 2024a at 7-79 ("WR-1 would enhance water temperatures for native fishes, namely hardhead (*Mylopharodon conocephalus*)"); Id. at 7-140 ("expected to benefit native transitional zone fish species, particularly hardhead"); Id. at 7-150 (extended hardhead temperature-preference discussion as the centerpiece of WR-1's warming logic). The FLA's parallel discussion of WR-1's flow-*timing* rationale is broader, naming "Sacramento pikeminnow and hardhead" together. Id. at 7-153. But on the question of warming, hardhead is the one species SCE invokes.

SCE's own data confirm hardhead's absence from detection. SCE 2024a at 7-99, Table 7.4-2 (distribution shown as "O"—historical observations only, no current detections); Id. at 7-150 ("hardhead have not been observed in the Fairview Dam Bypass Reach since 1998"). SCE offers no reintroduction plan in WR-1 or anywhere else in the FLA. The agencies cannot give weight to SCE's "benefit to native transitional zone species" rationale when the species individually invoked as the beneficiary has not been detected in the reach since 1998.

SCE itself has set the evidentiary threshold for a bypass warming: "Before reasonable recommendations can be made regarding the management of native fisheries in the NFKR, there must exist comprehensive, reliable data on the abundance, biomass and age-structure of all species present." SCE 2017a at 5-2. WR-1 fails that threshold on its central species. SCE has no current abundance, biomass, or age-structure data for hardhead.

SCE has demonstrated its methodological capability to model hardhead habitat when the species is present. In the parallel KR1 record, SCE evaluated hardhead habitat suitability and identified maximum WUA at 150 cfs. SCE 2026d at 7.4-4 to 7.4-5. The KR3 record contains no equivalent effort. SCE has not modeled flow reductions as a benefit nor as a curse for hardhead; the proposition that WR-1's reduced July and August flows would

theoretically benefit hardhead, if they were here, is asserted, not demonstrated. Indeed, the bypass routinely exceeds SCE's generic hardhead growth temperature threshold and regularly reaches their optimal range. *See* SCE 2024a at 7-140; § III.B. The benefits of additional warming in those two months on this record also remain asserted and unproven.

2. SCE's other native-species claims do not support warming

Sacramento pikeminnow. Sacramento pikeminnow densities have been "consistently low under the current license period" SCE 2024a at 7-150. SCE has produced no KR3-specific habitat-flow analysis for pikeminnow. The lower bypass—where pikeminnow occur—already meets the temperature envelope for pikeminnow occurrence (18–28°C) during July and August. *See* SCE 2024a at 7-150; § III.B. The benefits of additional warming are again asserted and unproven.

Sacramento sucker. SCE characterizes Sacramento sucker as "the dominant species across all sites" in 2023. SCE 2024a at 7-100. Yet sucker biomass at Hospital Flat declined approximately 98% across the current license period. SCE 2017a at 4-3, Table 4-5. SCE's 2023 surveys do not characterize that trajectory as reversed. SCE 2024e at B-4, Table B-3. SCE acknowledges "very poor recruitment to the existing population." SCE 2007a at 17. SCE earlier attributed the decline partly to the 2002 McNally Fire and characterized the 2006 results as "transitory." SCE 2007a at 42–43. But the decline began before the fire and continued through 2016. SCE 2017a at 4-3, Table 4-5. SCE has produced no alternative non-flow explanation.

In the parallel KR1 proceeding, SCE identifies the sucker preferred temperature range at just 20–25°C. SCE 2026e at AQ-2 50, Table 5-19. Yet the KR3 FLA discusses WR-1's warming effects without mentioning that sucker's preferred range is already met or exceeded by current bypass summer temperatures.

SCE's "may be impairing" rationale is hedged speculation. The closest SCE comes to a causal claim connecting current MIFs to native-fish status is this single sentence: "It is *possible* that the existing MIF release schedule in the summer months, designed to cool water for trout, may be impairing conditions for native fishes." SCE 2024a at 7-150 (emphasis added). That hedged speculation is the entire empirical foundation for WR-1's warming proposal. SCE separately stated in 2017 that "[t]here is no evidence that the absence of hardhead and the reduced densities of rainbow trout and Sacramento sucker are attributable to KR3 Project operations." SCE 2017a at 5-1. SCE cannot have it both ways: if there is no evidence Project operations are causing the declines, there is no basis for claiming Project-induced warming would reverse them.

3. Cold-water management remains the proper goal; WR-1 harms cold and warm fish

Historical management has consistently favored cold-water species. The Wild and Scenic designation for the North Fork Kern recognized fishing as part of the recreation Outstandingly Remarkable Value—historically understood as the cold-water trout fishery. USFS 1994a at Affected Environment - 61 (Segment 4 ORVs); Id. at Affected Environment - 83; *see also* SCE 2024a at 7-291 ("native cyprinids are generally not targeted by anglers"). The multiagency 1995 Upper Kern Basin Fishery Management Plan recommended that the agencies "Manage the [pikeminnow] population to reduce the abundance of large predatory fish and restore fish communities to a more natural balanced population." USFS et al. 1995a at 2. The Plan separately identified hardhead as a predator that "could consume small trout" at large sizes and noted that "[n]on-salmonid fishes appear to be doing well, in part due to alterations in habitat caused by man." Id at B-2. The 1995 Plan's framework was unambiguous: warm-water natives in the Kern—including both cyprinids WR-1 now invokes as warming beneficiaries—were to be managed in ways that supported the cold-water trout fishery, not the reverse.

The Forest Service recently reaffirmed that the 1995 Plan continues to guide its management of the bypass. USFS 2023a at 190. CDFW's 2022 Strategic Plan for Trout Management commits the Department to improving flows at dam-impaired trout waters. CDFW 2022a at 28–29. The Forest Service in 2022 stated that 130 cfs "is not sufficient because the 20°C threshold was crossed" and that it may be necessary to increase the MIF during extreme heat. USFS 2022a at 4. WR-1 proposes the opposite of those directions.

SCE elsewhere disclaims responsibility for setting management goals. SCE 2024d at E.4-62 ("SCE does not set the management goals for the river"). The disclaimer cuts against WR-1: a measure that proposes to deliberately warm the bypass for the benefit of "native transitional zone species" (SCE 2024a at 7-140) is itself a management proposal. SCE's own filings, across 33 years and continuing into the current FLA, repeatedly admit that the bypass is managed as a trout fishery. SCE 1991a at E-3-2; SCE 2024a at 7-147 to 7-148; SCE 2024d at E.4-76.

The "naturally transitional" characterization does not excuse project-caused degradation. SCE may yet advance a more refined warming argument: that the bypass reach is near the downstream limit for trout and near the upstream limit for warm-water species, and that project effects merely shift a naturally transitional reach along a gradient that was already marginal. Even accepting that characterization, it does not help WR-1. A naturally transitional reach is precisely the kind of habitat most vulnerable to incremental degradation. WR-1 converts the reach into one that fails cold-water standards more often while continuing to provide a depressed habitat for the warm-water cyprinid populations the assemblage is now nominally being managed to favor. The legal framework does not ask whether the reach is "naturally transitional." It asks whether the project's alteration

adversely affects beneficial uses (Basin Plan § 3.1.17), whether DO falls below 8.0 mg/L (§ 3.1.6), and whether the project degrades Wild and Scenic ORVs (WSRA § 7). The answer to each is yes.

The dual COLD/WARM beneficial use designation does not authorize cold-water degradation. The bypass reach is designated for both cold freshwater habitat (COLD) and warm freshwater habitat (WARM) under the Basin Plan. CVRWQCB 2018a at III-2.00, Table III-1. SCE may argue this permits deliberate warming that favors transitional-zone species over cold-water species. That argument fails. The Basin Plan's 8.0 mg/L DO minimum applies to all waters designated for cold-water beneficial uses, regardless of concurrent warm-water designation. Id. at 3-4. The Basin Plan's narrative temperature objective separately prohibits temperature alterations that adversely affect beneficial uses. Id. at 3-9. These standards are conjunctive, not alternative. Any policy shift toward warm-water management would be a decision for the agencies to make if §7 of the WSRA permits—not a justification for SCE to degrade cold-water habitat. *See* § V.I.

WR-1 harms the stocked trout fishery SCE concedes will continue. CDFW maintains a put-and-take stocked trout fishery in the bypass reach. SCE 2024c at ANG-1 22 ("CDFW stocks the bypass reach annually with hatchery-raised rainbow trout helping to ensure a quality sport fishery"). SCE characterizes WR-1's impact on trout as "minor, local, short-term (seasonal), adverse." SCE 2024a at 7-140. That characterization is not supported by the observed record. Trout populations have collapsed 97–99% under flows more favorable than those WR-1 would establish; the bypass exceeds the 20°C growth threshold on 75% of summer days at Site 4 and falls below the Basin Plan 8.0 mg/L DO objective on 61% of summer days at Site 3; flow regimes that fall far short of CEFF baseflows have been in place for six decades. *See* §§ III.A, III.B, III.C. SCE's own characterization of the predicted effects—"up to 1°C" August warming (SCE 2024a at 7-140) and "less than 0.2 mg/L" DO decrease (SCE 2025a at 34)—describes incremental degradation layered on a baseline that already exceeds the applicable thresholds. The "short-term (seasonal)" framing obscures function: WR-1 establishes an annual mechanism that recurs every July and August for fifty years. SCE itself acknowledges that under WR-1, stocked trout "would likely be forced to migrate farther upstream within the Fairview Dam Bypass Reach during the warm summer months." SCE 2024a at 7-140. That is recurring annual displacement of the species the fishery depends on.

WR-1 also harms the warm-water natives SCE invokes as warming beneficiaries. Sacramento sucker—the warm-water native present in the bypass in numbers—has a preferred range for growth and activity of 20–25°C. SCE 2026e at AQ-2 50, Table 5-19. Current bypass conditions during July and August already include daily maxima within *and above* sucker's preferred range. See § III.B. WR-1's modeled additional 1°C of August warming pushes the lower bypass further past sucker's upper preferred bound. WR-1 also reduces July–August

baseflow from 130 cfs to 100 cfs—further reducing the habitat the sucker biomass collapse trajectory points to as flow-driven. SCE has modeled neither effect.

Conclusion. Whether the goal is cold-water or warm-water fishery management, WR-1 fails. If the management goal remains cold-water fishery protection—as the Wild and Scenic designation, the 1995 Plan, the Forest Service's 2022 staff position, and the Basin Plan's COLD designation indicate—WR-1's deliberate warming is directly contrary. If management priorities shift toward warm-water species, the species individually invoked as the warming beneficiary has not been detected since 1998; the only other named native cyprinid SCE characterizes as "consistently low" through the current license period; and the dominant remaining native is biomass-collapsed. There is no evidence that bypass temperatures are too low or flows too high in July and August. To the contrary, SCE's own CEFF analysis identifies the dry-season baseflow as altered. SCE 2024a at 7-132. Restoring them would "support the specific life history and habitat needs of native aquatic species." CEFWG 2021a at 3. WR-1 would not.

D. SCE Minimizes the Significance of Altered CEFF Baseflows

A healthy river depends on *five functional flow components*: fall pulse flow, wet-season peak flows, wet-season baseflow, spring recession flow, and dry-season baseflow. CEFWG 2021a at 3. CEFF assesses each component through multiple metrics, and the framework's diagnostic rule is plain: a component "should be considered *altered* if any of its functional flow metrics are likely altered." Id. at 53. SCE's own analysis identifies three of five components as altered in the bypass reach: fall pulse, wet-season baseflow, and dry-season baseflow. SCE 2024a at 7-129 to 7-130.

The altered components define the ecological baseline. The two altered baseflow components—wet-season and dry-season—are the sustained conditions on which aquatic life depends during the majority of the year. CEFF identifies dry-season baseflow as "critical for maintaining aquatic habitat for native species through the summer period"—when habitat contracts and thermal stress intensifies. CEFWG 2021a at 23. The third altered component, fall pulse flow, provides the seasonal cue that flushes fine sediment and triggers spawning migrations. Id. at 9. SCE attributes the baseflow alterations directly to Project operations: "Current Project operations affect the magnitude of flow in the Fairview Dam Bypass Reach, and consequently likely alter observed baseflows during the wet and dry seasons." SCE 2024a at 7-129. The three altered components yield a hydraulic and thermal baseline that lacks ecological function and integrity.

SCE's claimed CEFF Section C application produces a result inconsistent with its own diagnostic findings. SCE claims to have completed "most of Section C" of the CEFF framework by balancing ecological flow criteria against management goals. SCE 2024d at E.4-10. SCE's

proposed MIFs (40–130 cfs) remain 49-87 percent below the CEFF baseflows (195–335 cfs) its own analysis identifies as ecological flow criteria. SCE 2024a at 10-1; SCE 2024b at WR-2 28–30. Rather than addressing the three altered components, WR-1 makes no provision for the altered wet-season baseflow, fall pulse, or dry-season baseflow—in fact, it reduces the dry-season MIF from 130 to 100 cfs—thus weakening the dry-season baseflow component that is altered. In exchange, it raises the spring MIF in months when wet-season peak flows and spring recession are unaltered according to CEFF and typically exceed the proposed floor several-fold through natural snowmelt spill, increasing SCE's capacity to divert in the process. *See* § V.B.

SCE's own framing of the CEFF results is internally contradictory within the FLA itself. In one passage, SCE states that "since there were no non-flow limiting factors identified in the reach, the natural functional flow metrics identified in Section A would be carried forward as ecological flow criteria into future analysis." SCE 2024d at E.4-6 to E.4-7. In another passage of the same response matrix, SCE states that "[t]he CEFF natural functional flow metrics do not represent effects or flow recommendations." SCE 2024d at E.4-72. The two positions cannot both stand. If the natural functional flow metrics carry forward as ecological flow criteria—because no non-flow limiting factors apply—they are flow criteria for this reach. SCE's later disclaimer to the contrary functions as a methodological containment device: SCE applied CEFF because the FERC-approved Study Plan required it, and then narrowed the framework's normative force when its results would otherwise inform flow conditions. The inconsistency is itself an admission that the CEFF results properly bear on flow criteria.

E. WR-1 Reduces Summer Flows When They Are Most Needed

The July-August MIF operates as a binding constraint on the diversion in most water years; the May-June MIF does not. That means shifting the 130 cfs months from the former to the latter will increase KR3's net diversion. We have modeled inflows at Fairview Dam from SCE's WR-2 hydrology data with both the current 1996 MIF schedule and the proposed WR-1 schedule, applying identical operational rules (MIF plus a 10 cfs compliance buffer empirically observed in SCE's WY 1997–2025 record). MIF WB at Hydro, Tables 8 & 9. The proposed WR-1 increases SCE's diversion capacity on 65% of July-August days—days when the current 130 cfs MIF is what limits how much water SCE can divert. MIF WB at Hydro, Table 7. Conversely, the WR-1 May-June raise limits the diversion (increasing bypass flow) on only 26% of May-June days; on the remaining 74% of those days, snowmelt produces inflows large enough that bypass flow already exceeds the proposed 130 cfs MIF. Id.; *see* § V.B.

WR-1 reduces flows during the most physiologically stressed months of the year when temperatures and dissolved oxygen chronically violate cold-water standards. See §§ III.B,

III.C. The trade also imposes warming and DO depression—SCE acknowledges up to 1°C in August under low-runoff and hot conditions and an estimated DO reduction of less than 0.2 mg/L derived from that temperature change—on top of the temperature and DO exceedances documented in §§ III.B and III.C. The temperature figures are from SCE's 1991 modeling; SCE applies no separate DO modeling. SCE 2024a at 7-140, 7-292, 7-83 to 7-84, 7-89.

The proposed reduction also runs against the Forest Service's own scoping-era position. In its January 2022 PAD comments, the Forest Service identified evidence that "the minimum flow of 130 cfs is not sufficient because the 20°C threshold was crossed," and stated "it may be necessary to increase the minimum flow requirement during periods of extreme heat." USFS 2022a at 4. The Forest Service further observed that "with more warm days, it will probably be necessary to increase the minimum low flow on the hottest days to stay within the desired parameters for DO." Id. WR-1 does the opposite: it reduces the summer MIF the Forest Service had already flagged as inadequate, during the period of maximum thermal stress.

F. WR-5 and the Fall/Winter Silence Do Not Cure WR-1's Failure to Address the Altered Components

SCE pairs WR-1 with WR-5—a proposed 10-day diversion shutoff during the spring climbing limb of the hydrograph—and presents the combination as an integrated flow management package. This framing does not survive scrutiny, for it is silent on the three CEFF functional flow components SCE's own analysis identifies as altered, and WR-1 makes the dry-season baseflow alteration worse. *See* § V.D.

WR-5 targets wet-season peak flows—a CEFF component that SCE itself classifies as unaltered. SCE 2024a at 7-129. A 10-day shutoff during the spring ascending limb adds water to the bypass during a temporal window of an unaltered CEFF component, while the three altered components SCE's analysis identifies—wet-season baseflow, dry-season baseflow, and fall pulse—operate in temporal windows the climbing limb does not reach. The intervention is also structurally inadequate to shift any baseflow percentile. Wet-season baseflow and dry-season baseflow are sustained conditions measured as percentiles of daily flows across multi-month seasons (10th/50th percentile for wet; 50th/90th for dry). CEFWG 2021a at 9, 23; SCE 2024a at 7-129 to 7-130. Those percentiles are determined by the lower-flow portion of the seasonal distribution; raising flows on 10 climbing-limb days at the upper end of the wet-season distribution produces a negligible shift in the 10th and 50th percentiles. SCE offers no analysis showing that WR-5 would move the wet-season baseflow component toward an unaltered classification, and the structural relationship makes such a shift implausible. The fall pulse component is event-based and could in principle be addressed by a brief intervention, but WR-5 does not extend to the fall pulse

period. WR-5 therefore does not reach any of the three altered components—temporally, in distribution position, or in SCE's own analytical demonstration.

The fall pulse silence is notable. SCE attributes fall-pulse alteration directly to Project operations: "late summer and early fall storm run-off is typically not initially diverted under current Project operations in order to protect Project infrastructure. . . . However, diversion of some of these events reduces the magnitude of these flows downstream of Fairview Dam." SCE 2024a at 7-129. SCE thus concedes that the fall pulse alteration is the consequence of Project-operational choices SCE itself makes, not natural hydrologic variability. WR-1 makes no proposal to address this admitted Project-caused alteration; WR-5 does not extend to fall flows. The integrated package SCE offers therefore consists of one measure (WR-1) that weakens the binding summer floor on the altered dry-season baseflow (*see* § V.D) and one measure (WR-5) that adds flow to an unaltered CEFF component during a temporal window the altered components do not occupy—while the remaining altered components that SCE acknowledges are Project-caused receive no provision.

The current and proposed fall and winter MIFs sit far below natural baseflow magnitudes. SCE's CEFF analysis identifies natural wet-season baseflow medians of 335 cfs. SCE 2024b at WR-2 28–30. Median monthly inflows during the wet season run from 219 cfs in November to 349 cfs in February. MIF WB at Hydro, Table 1. At 40 cfs, the current MIF is a small fraction of natural inflow; SCE diverts the remainder during the November–February period. Id. WR-1's silence on these months perpetuates two of the three CEFF-altered components: SCE's analysis identifies the wet-season baseflow as altered and the fall pulse magnitude as altered (SCE 2024a at 7-129 to 7-130), and WR-1 makes no provision for either. SCE itself attributes the wet-season and dry-season baseflow alterations to Project operations: "Current Project operations affect the magnitude of flow in the Fairview Dam Bypass Reach, and consequently likely alter observed baseflows during the wet and dry seasons." SCE 2024a at 7-129. WR-1 leaves these admitted Project-caused alterations unaddressed.

G. WR-1 Is Inconsistent with Wild and Scenic Protection

The bypass reach lies within the federally designated Wild and Scenic North Fork Kern River, designated in 1987. The river's Outstandingly Remarkable Values are categorized as scenic, recreation, and wildlife (USFS 1994a at Purpose and Need - 2); the listing of values at Affected Environment - 61 includes "fishing, camping, picnicking, Whitewater boating, hiking, driving for pleasure, and enjoying the scenic beauty." Fishing was historically understood as the cold-water trout fishery. USFS 1994a at Affected Environment - 83 (designation-era characterization of "a hatchery supported catchable trout fishery between the Bridge and Isabella Lake").

The Wild and Scenic Rivers Act constrains Forest Service action on the proposed relicensing. Section 7(a) prohibits Forest Service assistance to any in-corridor water resources project if that project would have a "direct and adverse effect on the values for which such river was established," 16 U.S.C. § 1278(a); Section 10(a) requires the managing agency to administer the river "in such manner as to protect and enhance" the designated values, 16 U.S.C. § 1281(a). The current flow regime has presided over a 97–99% decline of the rainbow trout population in the bypass reach (*see* § III.A), chronic Basin Plan exceedances of cold-water dissolved oxygen and temperature standards (*see* §§ III.B, III.C), and disappearance of native species the FLA itself identifies (*see* § V.C). WR-1 perpetuates that regime and reduces summer flows further during the period of greatest physiological stress (*see* § V.E).

For the §401 certification proceeding before the State Water Resources Control Board, the WSRA framework reinforces the cold-water management direction the Basin Plan COLD designation independently establishes: the bypass reach is, at minimum, a protected cold-water resource under state law (with additional WARM, SPWN, WILD, and RARE designations addressed at § V.H), and its federal Wild and Scenic management history reinforces that cold-water/fishing value.

The Forest Service's own 1994 Comprehensive Management Plan operationalizes Wild and Scenic protection as a binding management objective for the corridor: "secure favorable conditions of water flow" alongside preservation and enhancement of "water quality and aquatic values." USFS 1994b at CMP - 46. The Plan thereby links flow quantity, water quality, and aquatic values as a single managed objective—not three separable concerns.

H. WR-1 Is Inconsistent with State Water Quality Law

The bypass reach is designated for COLD freshwater habitat (and where applicable SPWN). CVRWQCB 2018a at III-2.00, Table III-1. The Basin Plan's DO standard requires that DO "shall not be less than" 8.0 mg/L. CVRWQCB 2018a at 3-4. Where DO is already below 8.0 mg/L, the Basin Plan separately prohibits any controllable reduction. CVRWQCB 2018a at 3-4 (§3.1.6). The narrative temperature objective prohibits temperature alterations that adversely affect beneficial uses unless the proponent demonstrates otherwise to the Regional Board. CVRWQCB 2018a at 3-9 (§3.1.17). None of these provisions allows the licensee to avoid the applicable cold-water DO and temperature protections by invoking generalized benefits to warm-water species or project economics.

The Regional Board's 2009 KR3-specific Water Quality Certification reinforces the flow dependency of beneficial-use protection. The Board found that the Basin Plan beneficial uses for the Kern River above Lake Isabella include "hydropower generation, contact and non-contact recreation, warm and cold freshwater habitat, wildlife habitat, and rare,

threatened or endangered species habitat," and that "protection of instream beneficial uses requires the maintenance of adequate instream flows as well as effluent limitations and other limitations for discharges of pollutants." SWRCB 2009a at 7. The flow-DO and flow-temperature regressions documented in this memorandum confirm what the 2009 KR3 certification anticipated.

The monitoring record demonstrates chronic, project-caused exceedances. Site 3 fell below the 8.0 mg/L DO floor on 61% of paired summer days, including 100% of days in July, August, and September. *See* § III.C. On 26 of the 35 paired exceedance days at Site 3 in the assessment record, the upstream control site was itself below 8.0 mg/L, yet the Project further depressed DO on each of those days (median additional deficit: 0.90 mg/L)—each an independent §3.1.6 antidegradation violation. Id. The bypass reach exceeds SCE's own 20°C trout growth threshold on 64–75% of summer days at Sites 3 and 4 across three water years, compared to 36% at the upstream control site. SCE 2007b, Att. I at 2-3; *see* § III.B. The flow-DO and flow-temperature relationships ($R^2 = 0.68$ and 0.68–0.69 respectively) confirm the impairments are flow-dependent and project-caused. Id.; *see also* § III.C. SCE has made no demonstration that the temperature alterations do not adversely affect beneficial uses; the §III.B(1.7) analysis details why such a demonstration cannot be made on this record, and the Resolution 68-16 maximum-public-benefit framework provides no escape from the underlying standards. *See* § III.B(1.7).

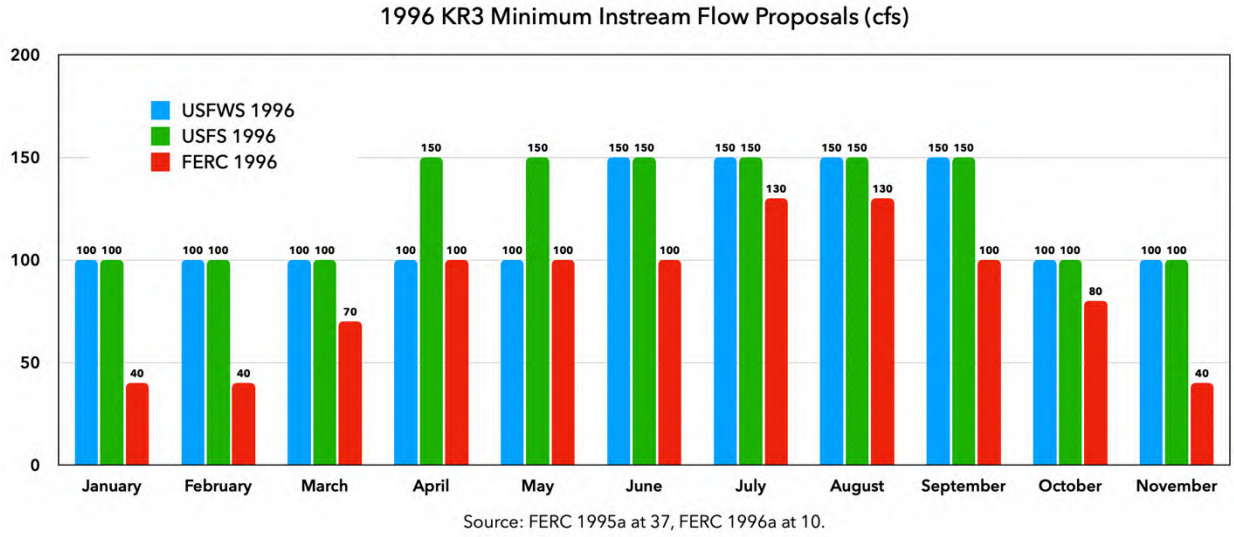
WR-1 would not remedy the violations; it would deepen them. By reducing the July–August MIF from 130 cfs to 100 cfs—a 23% reduction during the most thermally challenging days of the year—WR-1 would move bypass conditions further from compliance, not toward it. SCE's own modeling predicts up to 1°C additional August warming under low-runoff and hot conditions and an estimated DO reduction of less than 0.2 mg/L derived from that temperature change, layered on top of the chronic exceedance baseline. SCE 2024a at 7-140, 7-292, 7-83 to 7-84.

The Regional Board's §401 certification analysis must address these record facts. Certifying that WR-1 will comply with the Basin Plan's cold-water DO and temperature standards—when SCE's monitoring data show the current regime already produces chronic violations and WR-1 proposes to reduce flows further during the violation period—would lack a rational basis in the record.

I. The 1995/2005 Settlement Has Been Fulfilled

During the 1996 relicensing proceeding, the United States Forest Service and the United States Department of Interior (encompassing both the United States Fish and Wildlife

Service and National Park Service) proposed minimum instream flows substantially higher than ultimately adopted, as illustrated below.



FERC 1995a at 24, 37, Table 2.

Interior also recommended that Edison "release flows, up to the entire undiverted streamflow, to maintain temperature at or below the 20°C standard for a distance of 6 km downstream from the dam." Id.

The agencies accepted lower minimum flows in exchange for a $2.5 million fisheries trust fund. SCE 2006a at 2-3, 10 & 11.

The trust fund has been funded. The trust fund operates independently of any flow regime adopted in the next license. The mitigation was offered as compensation for impacts during the present license term, not as ongoing justification for continued low flows over the next 50 years.

The trust fund is not consideration for the next license term. SCE has confirmed that the Upper Kern Fishery Resource Enhancement Trust Fund "is protected from obsolescence" and "will continue to be used to carry out fishery enhancement measures in the Upper Kern River Basin" following expiration of the Project's license. SCE 2019a at 3-4. USFWS and CDFW have concurred in writing. SCE 2019a at 2, 7. The Fund therefore exists independently of any flow regime adopted in the next license—it will continue whether flows are 40 cfs or 335 cfs. SCE cannot offer the Fund as consideration for inadequate flows going forward. SCE has now expressly conceded the point in the current FLA. SCE 2024d at E.4-58 to E.4-59 (response to KRB-12) ("SCE concurs with KRB's statement that the Trust Fund has no bearing on this relicensing proceeding and SCE has not included provisions for its continuance as part of the new FERC license"; "the Trust Fund will continue independent of the outcome of the current relicensing proceeding").

The 1996 license findings have been empirically refuted. When FERC approved the 1995 settlement and issued the current license, it found that the prescribed flows "will benefit resident trout by improving adult habitat, juvenile habitat, and water temperatures during the summer." FERC 1996b at 13–14. The agencies stipulated that the settlement "will not jeopardize the continued existence of any species in this reach of the Kern River." Id. at 14. Those statements were predictions. The 30-year record provides the test. Monitoring under the prescribed flows has produced a 97–99% rainbow trout population collapse, SCE 2024e; chronic project-caused dissolved oxygen and temperature exceedances, MIF WB at DO_Summary, Table 1, and Temp_20C_Sum_S4, Table 1; and the effective extirpation of hardhead from the bypass reach, SCE 2024a at 7-99 (no detections over multiple monitoring periods). The current flow regime has measurably failed against FERC's own 1996 predictions and against the agencies' own 1996 stipulations. WR-1 proposes essentially the same regime—and reduces summer flows further. FERC should not extend a regime presiding over the adverse resource impacts in this record without explaining what about WR-1 or the next 50 years will produce different results. SCE has offered no such explanation.

The 1996 agency proposals (100-150 MIF; diversion cessation on temperature threshold) should be understood as a floor—the minimum the agencies believed necessary thirty years ago, before the fishery collapsed and before CEFF provided a rigorous methodology for determining ecological flow requirements. CEFF has raised that floor substantially. The agencies should not settle for less than what their predecessors proposed in 1996, and the science now supports considerably more.

J. Adaptive Management Cannot Substitute for Adequate Flows

Adaptive management is not a substitute for issuance-time compliance. SCE or the managing agencies may argue that WR-1 should be approved with monitoring and adaptive-management provisions to address any continuing impairment. Adaptive management is appropriate to refine a flow regime through bounded adjustments as new information emerges, or to verify recovery once a protective baseline is established. It is not a substitute for compliance where the existing record already documents the harm. *American Rivers v. FERC*, 201 F.3d 1186, 1195–96 (9th Cir. 1999) (license conditions must rest on best available information at time of issuance).

The bypass-reach impairment is not speculative or contingent on future study. SCE's own monitoring data document chronic Basin Plan exceedances; SCE's own SSTEMP modeling predicts CEFF flows would alleviate them; SCE's own IFIM modeling shows CEFF flows optimize trout habitat; SCE's own fish surveys document a 97–99% population collapse. See §§ II.E, III.A–D. The flow regime necessary to address these impairments is identifiable from SCE's own record today. Deferring that determination to post-license adaptive review—

under a license that locks in WR-1 for fifty years—would license a known-failing regime in reliance on speculative future correction. That posture cannot be reconciled with the FPA's requirement that the licensee carry the burden of demonstrating that the proposed license protects the affected resources.

Adaptive provisions are appropriate to monitor for continued impairment and trigger formal review; they are not authorization to defer adequate baseline protection.

K. Conclusion: WR-1 Fails on this Record

WR-1 fails the record component-by-component. SCE's CEFF analysis identifies three of the five functional flow components as altered: dry-season baseflow, wet-season baseflow, and fall pulse magnitude. SCE 2024a at 7-129 to 7-132, 7-137. WR-1 does not remedy any of them. Its 40–130 cfs schedule sits far below the CEFF baseflow medians SCE itself reports (195 cfs dry-season; 335 cfs wet-season). Its July–August reduction from 130 to 100 cfs moves summer flows further from the altered dry-season baseflow component, not closer. Its silence on fall pulses leaves the altered fall pulse component uncorrected. WR-5's reservation of October flow lifts a single month and does not address wet-season baseflow alteration through the rest of the wet season. See §§ V.A, V.D, V.G.

WR-1 also fails the daily-scale water quality record SCE itself produced. SCE's monitoring shows strong relationships between flow magnitude and both dissolved oxygen and temperature in the bypass reach (R^2 = 0.68–0.69). Higher bypass flows reduce both Basin Plan DO and temperature exceedances. WR-1 reduces the only summer floor that binds in the record—the 130 cfs Jul–Aug MIF—and substitutes a 100 cfs floor that increases the frequency and magnitude of those exceedances. See §§ III.B, III.C, V.E. MIF WB at Hydro, Table 4.

Under CEFF, the bypass would meet ecological flow requirements whenever natural inflow permits—67% of days, up from 31% under current operations and 23% under WR-1. MIF WB at Missed_Opportunity, Table 1.

Against this record, SCE's representation that "[a]dverse effects identified have been addressed in SCE's Proposed Measures," SCE 2024d at E.4-58 to E.4-59, does not survive review. The Proposed Measures expand SCE's operational discretion—over binding minimum flows and sediment flushing—in ways that can increase adverse ecological effects. See §§ V.B–F. The agencies should reject WR-1 and require an enforceable flow regime that addresses the altered flow components and documented impairments. CEFF baseflows are the only such regime supported by this record; if the agencies decline CEFF, they should identify the enforceable alternative they will adopt instead.

VI. ADDITIONAL PUBLIC INTEREST BENEFITS

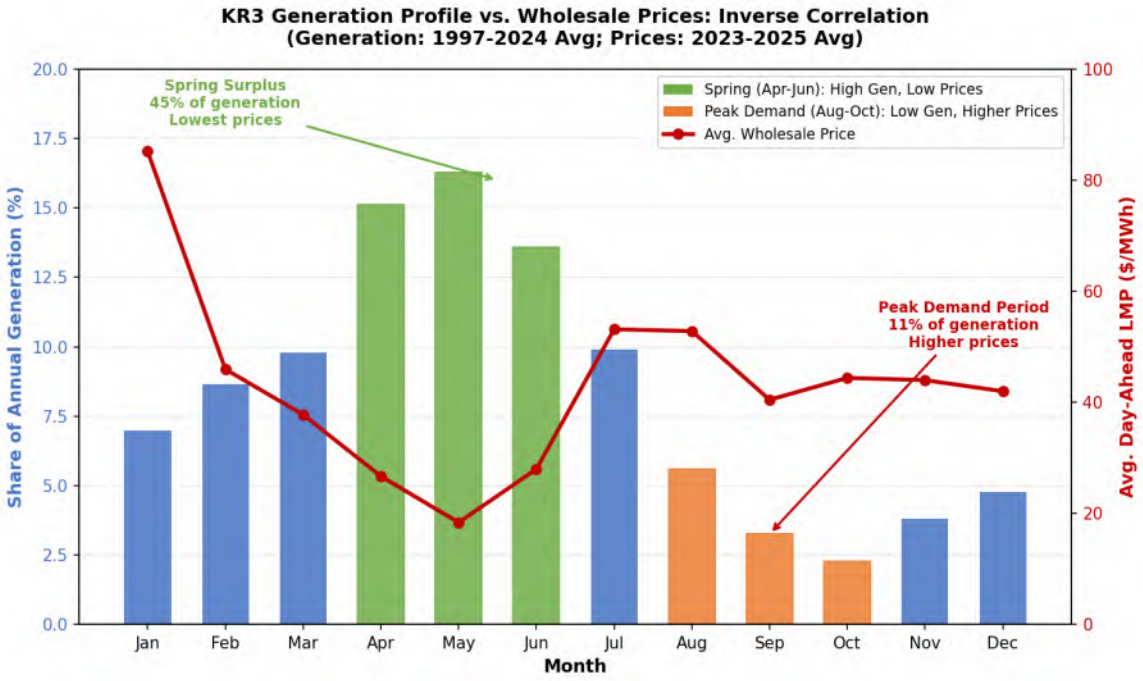
The foregoing analysis is independently sufficient to require improved minimum instream flows. The benefits described in this section are supportive, not foundational: they confirm that CEFF-based flows would also serve broader public interests that FERC must weigh under the Federal Power Act.

A. Grid Reliability and Generation Value

The KR3 Project's contribution to electricity supply is small, poorly timed, and economically marginal—factors the Commission must weigh against the substantial environmental costs documented in this Memorandum.

Capacity value is minimal. Under the CAISO/CPUC resource-adequacy counting framework, KR3's four-year average Net Qualifying Capacity (2023-2026) is 12.5 MW, a fraction of its 36.8 MW potential capacity. KRB 2026a at 3-8. That 12.5 MW represents 0.020% of California's resource adequacy net qualifying capacity (61,962 MW). KRB 2026a; CAISO 2025b; *see also* CAISO 2026a (program portal). CAISO does not credit KR3 with Effective Flexible Capacity in the cited compliance years, so it provides no counted Flexible RA value in the grid-services framework that commands premium value in modern electricity markets. KRB 2026a at 3-8.

Generation is seasonally misaligned with demand. KR3 generates 45% of its annual energy April through June—the spring snowmelt period when wholesale electricity prices are at their lowest and California routinely curtails renewable generation. Conversely, the Project generates only 10% of its energy during August through October—the peak-demand, grid-stress period when electricity is most valuable and supply most constrained.



KRB 2026a at 4 (citing SCE PAD Table 5.2-1; CEC QFER; CAISO OASIS LMP).

California's grid is regularly oversupplied during the spring snowmelt period when KR3 operates at peak capacity. In 2024, CAISO curtailed 1.78 million MWh of renewable generation during April-June 2024 alone, concentrated in daytime peak-solar hours but layered on seasonally depressed spring demand across the diurnal cycle. CAISO 2025a.

The Project operates at a loss. SCE's own developmental analysis shows that KR3 has lost more than $1.5 million per year under current market conditions. Under a generation-weighted analysis that accounts for the mismatch between spring peak KR3 generation and summer peak grid demand, losses reach $2.3 million per year (2024-2025). KRB 2026a at 9-10.

Local reliability does not depend on KR3. The project sustained a 16-month complete outage for dam and tunnel rehabilitation a decade ago. SCE 2024a at 7-268. SCE has not reported any local electricity service disruption in the Kern River Valley during that or any other extended outage. There is no evidence that KR3 is indispensable—or even necessary—to local reliability.

In sum, the Commission is being asked to encumber a Wild and Scenic River for the next 50 years to support a hydroelectric project that provides minimal firm capacity, no flexible capacity, generates most of its power when it is least needed, operates at a financial loss, and is not indispensable to grid reliability. The public interest calculus favors adequate and effective environmental protections under these conditions, not continued degradation in exchange for attenuated generation value.

B. Public Health

The 1995 USFS/NPS/CDFW joint scoping identified bacterial concentration in the bypass reach as a flow-related concern. USFS et al. 1995a at V-3; FERC 1996a at 26. SCE's limited recent sampling (9 dates 2022–2023; 11 dates 2024) does not characterize bacterial conditions across the full range of WR-1's proposed summer flows. The 1995 concern has not been displaced; it remains a record gap WR-1 enlarges rather than closes. CEFF flows would increase the dilution previously identified as a solution.

C. Recreation

Boating flow preferences exceed WR-1's summer floor. SCE's own REC-1 study reports that the kayaker flow preference curves cross the marginal acceptability line at approximately 300 cfs for eight of the nine bypass reach segments; for the Fairview, Chamise Gorge, and Salmon Falls segments specifically, the marginal line is crossed between 250 and 300 cfs. SCE 2024g at REC-1 34. Even at 250 cfs—at or below the marginal-acceptability threshold across the reach—enhanced flow study boaters indicated they would return to boat the reach. Id. CEFF baseflows (195-335 cfs) approach or exceed both the marginal-acceptability threshold and the demonstrated return-intent floor; WR-1's 100-130 cfs summer flows fall well below either.

Angling opportunities deteriorate at WR-1's flow levels. SCE's ANG-1 Enjoyable Angling Flows study documents that anglers report flows below 40 cfs as "unfishable given the shallower water depths and higher water temperatures that are not conducive to fish activity." SCE 2024c at ANG-1 23. The wade-angler experience deteriorates with flow; SCE's monitoring at low summer flows has documented the chronic temperature and dissolved oxygen impairments that render the bypass reach a poor angling environment. *See* §§ III.B, III.C. Adopting CEFF flows would preserve boating and angling opportunities that WR-1 would otherwise diminish for the next 50 years.

D. Aesthetics

The bypass reach was designated Wild and Scenic in part for its scenic value. The Outstandingly Remarkable Values for Segment 4 are categorized as scenic, recreation, and wildlife (USFS 1994a at Purpose and Need - 2), and the listing of values at Affected Environment - 61 includes "enjoying the scenic beauty" alongside fishing, camping, and other activities. SCE's own studies confirm the scenic value is flow-dependent and that Project operations affect it.

The river is integral to the bypass reach's scenic identity. SCE describes the bypass reach as a highly scenic river corridor whose river component has intrinsic aesthetic value integral to

the recreational experiences found along the reach. SCE 2024a at 7-326. SCE confirms that the river's prominence in the viewshed changes with flow level. Id. at 7-327. In SCE's own visitor surveys, 95 percent of visitors identified either river flows (52.8%) or the general scenery (42.3%) as the most attractive scenic feature of the bypass reach. SCE 2024c at AES-1 35.

Project operations seasonally affect aesthetic opportunities. SCE expressly admits that "Project operations can divert up to approximately 600 cfs for Project generation once the minimum instream flow is met (ranging from 40 cfs up to 130 cfs, depending upon the month)" and that this seasonally affects flow-dependent aesthetic opportunities. SCE 2024c at AES-1 37. SCE further admits that low-flow conditions "diminish the overall scenic integrity of the landscape." SCE 2024a at 7-329.

WR-1's entire MIF range falls below the threshold where SCE observes scenic prominence maintained. SCE characterizes the moderate aesthetic-flow range as 160 to 1,000 cfs, where visual variability is highest. SCE 2024a at 7-327. Below 160 cfs, SCE observes that "the river level (amount of water) tends to be less prominent." Id. At very low flows (below 40 cfs), SCE observes that "the lack of water creates an emphasis on other landscape features, particularly large boulder fields in [sic] and riparian vegetation along the river channel, reducing the visual complexity of the landscape." Id. WR-1 proposes MIFs of 40-130 cfs across the year—entirely below SCE's 160 cfs scenic-prominence threshold. The Wild and Scenic designation protects the bypass reach's scenic value as an Outstandingly Remarkable Value; WR-1 would perpetuate operations in the flow range where SCE itself observes that the river's scenic prominence is diminished.

The 2026 addendum documents a consistent low-flow visual pattern across the bypass reach. FERC required SCE to supplement the original AES-1 study because it did not analyze conditions at or below 134 cfs—conditions that persist about 44% of the time. SCE 2026a at 1. The addendum documents conditions at 52 cfs and 91 cfs at fifteen Key Observation Points spanning the bypass reach. Id. at Table 1. Across these KOPs, SCE records a consistent pattern: at the documented low flows, the river is shallow and visually fragmented by exposed boulders, with limited turbulence and reduced channel-fill; as flows increase, the channel fills, rapids form, turbulence increases, and the river becomes a more prominent landscape feature. Id. at Table 2, pp. 3-7. At Black Bottom Falls (KOP 5), SCE observes that "[w]hile the river is visible and an integral component of the landscape, its prominence is minimized at low flows." Id. at Table 2, 4. At the dam itself, low flows make the concrete dam and rock outcrop clearly visible, creating "a hard break in the river" with the visual focus shifting from kinetic water to Project structures; at higher flows, "the dam disappears under a cascading flow of water." Id. at Table 2, 3; SCE 2024c at AES-1 Table 5.3-3.

WR-1 would lock in operations within the addendum's documented low-flow range for most of the year. WR-1's MIF schedule (SCE 2024a at E.1-3, Table E.1-2) places ten of twelve months at 100 cfs or below: October (80 cfs), November through February (40 cfs), March (70 cfs), April (100 cfs), and July through September (100 cfs). Six of those ten months operate at or below the addendum's higher documented low-flow condition of 91 cfs. Only May and June (130 cfs) exceed 100 cfs, and even those months remain well below SCE's identified 160 cfs scenic-prominence threshold. WR-1 would perpetuate the visual conditions SCE itself documented in the FERC-required addendum, in a federally designated WSR with scenic ORV protection.

CEFF flows (195-335 cfs) would maintain bypass conditions within SCE's identified moderate aesthetic-flow range every month of the year, preserving the river prominence and visual complexity that SCE itself identifies as defining the bypass reach's scenic character. WR-1 would perpetuate operations in the flow range where SCE's own studies document reduced scenic integrity, increased visual prominence of Project structures, and diminished river prominence on the landscape—outcomes inconsistent with the scenic value the Wild and Scenic designation was established to protect.

E. Local Economy and Tourism

The Kern River Valley's recreation-based economy depends on the river's recreational and aesthetic functions. SCE's own record establishes the causal chain between Project operations and the economic conditions on which the local community depends.

Tourism is a major regional economic driver. SCE reports annual travel-related spending of $1.9 billion in Kern County (supporting 20,190 jobs) and $594 million in Tulare County (supporting 6,100 jobs). SCE 2024a at 7-437, Table 7.12-6. Both counties have unemployment above the California average and median household income below it. Id. at 7-437.

Visitors to the bypass reach generate measurable spending. SCE reports that visitors to study sites along the Fairview Dam Bypass Reach spent an average of $288 per trip (median: $230). SCE 2024a at 7-438. The Forest Service maintains numerous fee-based and non-fee-based recreation facilities along the bypass reach, supporting the visitor base. Id.

SCE identifies Project operations as a socioeconomic factor. SCE expressly identifies Project operations and flow diversions as a socioeconomic issue affecting "the economy of the local communities in the Project-affected area, including tourism and water-based recreation expenditures in the NFKR watershed." SCE 2024a at 7-439.

Angler preference range begins above WR-1's MIF. SCE's ANG-1 study reports that anglers prefer flows between 150 and 800 cfs and that "flows below 40 cfs are unfishable given the shallower water depths and higher water temperatures that are not conducive to fish

activity." SCE 2024c at ANG-1 23. WR-1's 40-130 cfs MIF range falls below the angler-preferred floor and challenges the growth and survival of valued trout, whether wild or stocked. See § III.

CEFF flows would maintain bypass conditions within the flow ranges SCE's own record identifies as supporting commercial rafting volume, angling preferences, and the visitor spending that sustains the local recreation economy. WR-1's reductions during the summer season would push operations further into the flow range where SCE itself documents commercial trip displacement and reduced angling viability.

VII. CONCLUSION AND RECOMMENDATIONS

The record in this proceeding tells a clear story. The KR3 Project has operated for six decades under minimum instream flow regimes that have produced severe ecological consequences. Rainbow trout populations have declined 97–99%. Dissolved oxygen and water temperature chronically violate Basin Plan standards. Three of the five CEFF functional flow components in the bypass reach are altered.

This is a Wild and Scenic River. Its designated Outstandingly Remarkable Values have been cumulatively degraded by decades of inadequate flows. The question before the managing agencies is whether to allow that degradation to continue for another 50 years, or whether to require flows that protect those values under the clear direction of contemporary environmental science and SCE's own studies.

A. Summary of Our Proposal

We respectfully request that the new KR3 license include the following flow requirements.

1. Minimum Instream Flows:

Month	Proposed MIF (cfs)
October	195
November	195
December	230
January	265
February	300
March	335
April	335
May	335

June	300
July	265
August	230
September	195

These flows correspond to CEFF-derived baseflow medians, ranging from 335 cfs during peak snowmelt (March–May) to 195 cfs during fall low-flow (September–November), with transitional ramps that track the natural seasonal hydrograph.

2. Fall Pulse Flows:

During October 1 through December 15, when daily mean inflow at Fairview Dam first exceeds 500 cfs in any water year, SCE shall pass the entire inflow to the bypass reach until either (a) daily mean inflow has remained below 500 cfs for 24 consecutive hours, or (b) seven consecutive days of pass-through have elapsed, whichever is later. No more than one such pulse pass-through is required per water year.

B. Recommendations to Specific Agencies

United States Forest Service: The Forest Service's obligations under the Wild and Scenic Rivers Act require rejection of WR-1 and support for CEFF-based minimum instream flows.

The Section 7(a) Non-Degradation Mandate. Section 7(a) of the Wild and Scenic Rivers Act prohibits the Forest Service from assisting any water resources project that would have a "direct and adverse effect on the values for which such river was established." 16 U.S.C. § 1278(a). The bypass reach lies within Segment 4 of the North Fork Kern Wild and Scenic River, which was identified as having three categories of Outstandingly Remarkable Values: scenic, recreation, and wildlife. USFS 1994a at Purpose and Need - 2. The recreation ORV for Segment 4 encompasses "fishing, camping, picnicking, Whitewater boating, hiking, driving for pleasure, and enjoying the scenic beauty." USFS 1994a at Affected Environment - 61. The 1994 affected-environment description characterized the contemporary fishery as "a hatchery supported catchable trout fishery." USFS 1994a at Affected Environment - 83.

SCE's own data document degradation across the recreation ORV's flow-dependent activities: trout populations have collapsed 97–99%; dissolved oxygen violates Basin Plan standards on 61% of paired summer days, including 100% of days in July, August, and September; water temperatures chronically exceed SCE's own 20°C trout-growth threshold; and SCE itself observes that the bypass reach's scenic prominence is diminished at flows below 160 cfs. These are documented outcomes of the current MIF regime, not speculative harms. WR-1 would perpetuate that regime while reducing summer flows further. The

Forest Service cannot lawfully assist the project under terms its own studies show would degrade ORVs.

The cold-water trout fishery is the historical anchor of the recreation ORV. The multiagency 1995 Upper Kern Basin Fishery Management Plan, drafted in response to the reach's WSR designation, directed management to "improve water quality for optimal trout production." USFS *et al.* 1995a at 2. The Forest Service reaffirmed the 1994 Wild and Scenic management direction as continuing guidance in its 2023 Land Management Plan. USFS 2023a at 190. To the extent SCE's WR-1 proposal is designed to warm the river and shift species composition away from trout, *see* SCE 2024a at 7-140, it would degrade the cold-water fishery the recreation ORV historically encompassed. Any fundamental reorientation of management priorities away from the cold-water fishery would require the Forest Service to grapple with whether such a shift is itself inconsistent with protecting the ORVs for which this river was designated.

KRB's CEFF-based proposal is the operational implementation of a remedy the four signatory agencies endorsed thirty years ago. The 1995 Plan recommended that trout habitat be improved during low-flow periods by "increasing flow releases from Fairview Dam" to reduce water temperatures, and recommended that the agencies and the public pursue water allocations through relicensing or other practical methods during critical low-flow periods. USFS et al. 1995a at V-3. The Plan further proposed that, "once adequate river flows are reestablished downstream of Fairview Dam," all catchable trout planting should shift downstream of the dam—treating downstream-of-Fairview flow adequacy as the gating condition for fishery management. USFS et al. 1995a at IV-7.

The Section 10(a) Duty to Enhance. Section 10(a) of the Wild and Scenic Rivers Act directs that designated rivers "shall be administered" to "protect and enhance" their ORVs. 16 U.S.C. § 1281(a). Enhancement is not discretionary—it is a statutory mandate. The Forest Service's minimum instream flow recommendations during the last proceeding (100 cfs October–May; 150 cfs June–September), coupled with Interior's recommendation that "Edison release flows, up to the entire undiverted streamflow, to maintain temperature at or below the 20°C standard for a distance of 6 km downstream from the dam," reflected the floor the agencies then believed necessary to protect the fishery. FERC 1995a at 24, 37, Table 2. Three decades later, the fishery has collapsed under flows that fell below even those modest recommendations. The 1996 proposals should be understood as a floor, not a ceiling. The science now supports substantially more. SCE's own CEFF analysis identifies three of five functional flow components as altered; SCE's own IFIM modeling shows WR-1 flows occupy the steep, habitat-limiting portion of the curve while CEFF flows fall on the plateau where adult trout habitat is maximized; and SCE's own SSTEMP modeling, applied to CEFF flows, projects substantial cooling at bypass sites in hot meteorology; and SCE's sediment study documents fine sediment accumulation under low-flow regimes that WR-1

would perpetuate while CEFF flows would not. *See* §§ II.B, II.E, III.D, III.F, IV.D. Enhancement means acting on this evidence.

CEFF flows are species-agnostic. The Framework's baseflow components are defined as flows that "support the specific life history and habitat needs of native aquatic species." CEFWG 2021a at 3. Adequate baseflows are foundational regardless of which species the agencies prioritize. As §V.C establishes, the decline of native warm-water cyprinids from the bypass reach indicates flow-related habitat stress. CEFF flows would address the habitat conditions on which the entire historical native community depends, while supporting the cold-water trout fishery the recreation ORV historically encompassed.

Section 4(e) Authority. As the land management agency for National Forest System lands affected by Project operations, the Forest Service has authority under Section 4(e) of the Federal Power Act to file mandatory conditions for inclusion in any FERC license. 16 U.S.C. § 797(e). This authority exists precisely for circumstances like these—where the licensee's proposal fails to protect public trust resources on federal lands. We urge the Forest Service to file Section 4(e) conditions requiring CEFF-based minimum instream flows. The current regime is inconsistent with protection; WR-1 is inconsistent with both protection and enhancement. Only flows grounded in contemporary environmental science—flows that SCE's own studies validate—fulfill the Forest Service's statutory obligations to this Wild and Scenic River.

California Department of Fish and Wildlife: CDFW has authority under Section 10(j) of the Federal Power Act to recommend license conditions for the protection of fish and wildlife. Section 10(j) recommendations carry significant weight—FERC must adopt them unless it finds them inconsistent with the FPA and must explain in writing any deviation. 16 U.S.C. § 803(j)(2). CDFW's voice matters in this proceeding.

CDFW helped develop the CEFF framework and has applied it in other FERC proceedings. Julie Vance—Director of CDFW's Central Region, which includes the NF Kern—wrote to the state water board last year concerning a different river:

> *The California Environmental Flows Framework (CEFF) (UC Davis 2024) identifies five distinct flow[components] of a natural flow regime that are important to sustain the ecological, geomorphic, and biogeochemical functions of a river. CDFW recommends that a IS/MND analysis for a FERC relicensing includes a discussion of how each alternative provides functional flows and a discussion of how any flow proposals that do not contain all functional flows provide support to the physical, biological, and ecological processes of the [river].*

CDFW 2025a at 7; see also CDFW 2025b at 6 (same). The Vance position deserves particular weight in this proceeding because it comes from the same Central Region—which

includes the NF Kern—that CDFW staff have separately characterized as offering limited room for native-fishery improvement. See § IV intro (statement of Central Region Program Manager Gerald Hatler). The Department's senior recommendation on CEFF methodology, expressed in writing to the State Water Board for another FERC proceeding within the same Region, sits in tension with the position CDFW staff have publicly taken on this Project. We urge CDFW to ask the water board and FERC for the same analysis Vance recommended and ultimately recommend CEFF-based minimum instream flows in this proceeding. The Department's 1995 Upper Kern Basin Fishery Management Plan stated that the bypass reach "is capable of producing a self-sustaining wild trout fishery when water temperature and flows are improved." That finding remains true. The Department should advocate for the flows necessary to achieve it.

CDFW's own statewide policy supports the flows proposed in this memorandum. The Department's Strategic Plan for Trout Management states that CDFW will work to "[c]reate a list of high-quality trout waters that are currently affected by water operations that could benefit from natural flow regimes." CDFW 2022a at 29. The Plan specifically recognizes that "[t]he legal standards of the public trust doctrine and [Fish and Game Code §] 5937 necessitate that dam operators allow sufficient downstream flow to maintain fish in good condition" and commits CDFW to "create a list of high-quality trout waters currently impaired from dam and diversion operations, or those that could benefit from revised flow regimes." CDFW 2022a at 28-29. The bypass reach below Fairview Dam—a designated Wild and Scenic River segment with a trout fishery component—is precisely the type of water impaired by dam operations that the Strategic Plan targets for flow improvements. Staff's public support for WR-1 in this proceeding is difficult to reconcile with the Department's own statewide trout management objectives, which explicitly prioritize identifying and correcting flow impairments at dam-affected trout waters, and with the Department's CEFF practice in other FERC proceedings. In Devil Canyon (P-14797), where the licensee declined to provide requested studies for the Mojave River West Fork below Cedar Dam, CDFW conducted its own CEFF functional flow analysis and recommended that "the results of this study be immediately implemented." CDFW 2021a at 34. KR3 presents the inverse situation: SCE has conducted the CEFF analysis, and that analysis identifies three of five functional flow components as altered. The case for CEFF-based MIFs is therefore stronger here than at Devil Canyon. KRB encourages CDFW to align its KR3 recommendations with the Department's Devil Canyon precedent and Strategic Plan commitments.

CDFW's authority is not just policy—it is statutory. California Fish and Game Code § 5937 directs that "[t]he owner of any dam shall allow sufficient water at all times to pass through a fishway, or in the absence of a fishway, allow sufficient water to pass over, around or through the dam, to keep in good condition any fish that may be planted or exist below the

dam." Cal. Fish & Game Code § 5937. The bypass reach below Fairview Dam—where SCE's own monitoring documents 97-99% trout population collapse, chronic Basin Plan exceedances, and "good condition" demonstrably absent—is a § 5937 case. CDFW has both the authority and the statutory obligation to recommend flows adequate to satisfy that command. WR-1 does not satisfy it; CEFF-based flows do.

United States National Park Service: NPS was a co-signatory to the 1995 Upper Kern Basin Fishery Management Plan—the multiagency framework that recognized the bypass reach "is capable of producing a self-sustaining wild trout fishery when water temperature and flows are improved." USFS et al. 1995a at IV-4. That Plan committed the agencies to coordinated management of this Wild and Scenic River. The Forest Service reaffirmed the Plan's continuing guidance in 2023. USFS 2023a at 190.

Interior's Unified Position. During the last relicensing, Interior's recommendations—submitted through the Department's Office of Environmental Policy and Compliance—spoke for the bureaus collectively, including NPS. FERC 1995a at 11, 24. Interior recommended not only specific minimum flows (100–150 cfs) but flows "up to the entire undiverted streamflow" to maintain the 20°C temperature standard. FERC 1995a at 24, 37 Table 2. This aggressive position reflected the Department's unified assessment that thermal protection for the Wild and Scenic North Fork Kern River required targeted ecologically grounded management.

The Duty to Assist. While the Forest Service administers this WSR segment, the Wild and Scenic Rivers Act directs that all federal agencies "shall assist" the administering Secretary in carrying out the Act's purposes. 16 U.S.C. § 1281(e). Recreation is among the Outstandingly Remarkable Values for which this river was designated. USFS 1994a at Affected Environment - 61. NPS's expertise in recreation management and its historical partnership in Kern River planning position it to contribute meaningfully to this proceeding.

Recreation Values Require CEFF Flows. SCE's own REC-1 study reports that the kayaker flow preference curves cross the marginal acceptability line at approximately 300 cfs for eight of the nine bypass reach segments; for the Fairview, Chamise Gorge, and Salmon Falls segments specifically, the marginal line is crossed between 250 and 300 cfs. SCE 2024g at REC-1 34. Even at 250 cfs—at or below the marginal-acceptability threshold across the reach—enhanced flow study boaters indicated they would return to boat the reach. Id. CEFF summer baseflows (230–300 cfs) fall within or near this threshold range; SCE's proposed WR-1 flows (100–130 cfs) fall well below it. Wade anglers similarly report that current low-flow conditions degrade fishing quality through shallow pools, increased predation pressure, and excessive algae accumulation. Adopting WR-1 would lock in substandard recreation conditions for the next fifty years.

We urge NPS to coordinate with the Forest Service and submit comments supporting CEFF-based minimum instream flows as necessary to protect and enhance the recreation values that justified this river's Wild and Scenic designation. NPS's voice—grounded in its historical involvement and its expertise in managing America's premier recreational waterways—would strengthen the administrative record and support the interagency partnership that the 1995 Plan envisioned.

State Water Resources Control Board: The Board has authority under Section 401 of the Clean Water Act to certify—or decline to certify—that a project will comply with state water quality standards. The Basin Plan requires dissolved oxygen in cold-water streams "shall not be less than" 8.0 mg/L—an absolute floor assessed by daily minimum. CVRWQCB 2018a at 3-4. Where DO is already below that floor, the Basin Plan separately prohibits any further decrease (§3.1.6)—with no balancing test. The narrative temperature objective (§3.1.17) prohibits alteration of natural temperatures unless SCE demonstrates no adverse effect on beneficial uses. CVRWQCB 2018a at 3-9.

SCE's own monitoring data show the bypass reach violates both:

- Dissolved oxygen at Site 3 fell below 8.0 mg/L on 61% of paired summer days in WY 2024—including 100% of days in July through September once the Project diverted the bulk of inflow. On 26 of those days, the control was itself below 8.0 mg/L yet the Project further depressed DO on every one—each an independent §3.1.6 antidegradation violation.
- Water temperature at Sites 3 and 4 chronically exceeds SCE's own thermal thresholds: the 20°C trout growth threshold (daily mean) on 64–75% of summer days; the 24°C acute-stress threshold (daily maximum) on 62% of summer days at Site 4—compared to 36% and 5% respectively at the upstream control. SCE 2007b, Att. I at 2-3; see § III.B. The flow-temperature regression (R^2 = 0.68–0.69) confirms this alteration is flow-dependent. SCE has made no demonstration that this alteration does not adversely affect the COLD and SPWN beneficial uses.

The Board should not certify WR-1 without conditions sufficient to achieve—not merely approach—Basin Plan compliance, or should withhold certification until SCE demonstrates its proposal will meet water quality standards. At minimum, the Board should require SCE to explain how reducing July-August flows from 130 cfs to 100 cfs will improve compliance with standards that are already chronically exceeded at 130 cfs.

The §401 burden falls on SCE, not the Board. Section 401 of the Clean Water Act requires the applicant—not the certifying agency—to provide reasonable assurance that project activities will comply with state water quality standards. *PUD No. 1 of Jefferson County v. Wash. Dep't of Ecology*, 511 U.S. 700, 712 (1994). Where the record demonstrates chronic, project-caused exceedances of those standards, the applicant cannot meet that burden by

proposing a flow regime under which the same exceedances will continue. SCE has not provided reasonable assurance that WR-1 will achieve compliance with Basin Plan dissolved oxygen, temperature, COLD, SPWN, or antidegradation requirements. The Board therefore has two lawful paths: condition certification on a flow regime adequate to achieve compliance (CEFF-based MIFs), or withhold certification until SCE demonstrates such a regime. Continuing to certify a project under a known-impairing flow schedule would itself be inconsistent with the Board's §401 duties.

The Public Trust Doctrine provides an independent ground for State Water Board action. California's Public Trust Doctrine, as articulated in *National Audubon Society v. Superior Court*, 33 Cal. 3d 419 (1983), and reaffirmed in *Environmental Law Foundation v. State Water Resources Control Board*, 26 Cal. App. 5th 844 (2018), imposes on the State an affirmative and continuing duty to protect navigable waters and the public uses they support—including fish and wildlife, recreation, and ecological values. That duty applies to the Board's §401 evaluation as a separate ground from technical Basin Plan compliance. Even if the Board concluded that WR-1 nominally satisfied numeric water quality criteria—which it does not—the Board's public trust obligations require an independent assessment of whether continued certification is consistent with the trust. A flow regime that has presided over the documented collapse of the bypass-reach trout fishery, the chronic violation of cold-water beneficial use, and the reduction of recreational uses cannot be reconciled with the State's public trust duties. Section 401 certification of WR-1 would itself be inconsistent with the Board's public trust obligations, regardless of how the technical compliance question is resolved.

SCE's own angling study corroborates the failure to protect cold-water beneficial uses. SCE's ANG-1 Enjoyable Angling Flows study confirms on the same record SCE compiled that current flows fail the COLD, SPWN, and WILD beneficial uses. SCE 2024c at ANG-1 17, 23. Anglers reported that flows below 40 cfs are "unfishable given the shallower water depths and higher water temperatures that are not conducive to fish activity." Id. at 23. Of those who reported flows affected their experience, 39 percent reported flows were "too low"—at MIF-level flows of 40–70 cfs. Id. at 19. Anglers themselves observed the temperature-mortality link the memorandum's water-quality record establishes: "higher fish mortality seemed to be associated with angling under high temperature conditions." Id. at 17. Preferred angling flows of 150–800 cfs, with 100–200 cfs as the minimum, sit above WR-1's range of 40–130 cfs. CEFF baseflows of 195–335 cfs sit within the preferred range. The angler-observed flow and temperature thresholds align with SCE's own biological data: trout become sluggish above 75°F (24°C)—the same daily-maximum threshold SCE's own literature review identifies for acute thermal stress. Id. at 17; SCE 2007b, Att. I at 2-3. WR-1 would maintain or worsen the very conditions anglers, biologists, and SCE's own studies identify as adversely affecting the fishery resource. The Board cannot find that beneficial

uses are protected when SCE's own angling study, fish-population study, dissolved oxygen logger record, and temperature logger record all converge on the same conclusion: they are not.

United States Fish and Wildlife Service: The Department of the Interior's 1996 recommendations recognized what the subsequent thirty years have confirmed—this fishery cannot survive under inadequate flows.

The 1996 Baseline. During the last relicensing, Interior recommended minimum instream flows of 100 cfs October through May and 150 cfs June through September. FERC 1995a at 37, Table 2. Critically, Interior also recommended flows "up to the entire undiverted streamflow" when necessary to maintain water temperatures at or below the 20°C standard. FERC 1995a at 24. The Department understood then that thermal protection required targeted, science-based flow management. The agencies accepted lower flows in exchange for a $2.5 million fisheries trust fund; that bargain has been fulfilled, and the fishery has collapsed anyway. SCE 2006a; § III.A. Interior's 1996 concerns were not overcautious. The 97-99% decline in trout populations, chronic temperature exceedances above Interior's own 20°C threshold, and functional extirpation of native hardhead validate what the Department warned would happen under inadequate flows.

The Section 10(j) Mandate. Section 10(j) of the Federal Power Act authorizes USFWS to recommend license conditions "to adequately and equitably protect, mitigate damages to, and enhance, fish and wildlife." 16 U.S.C. § 803(j)(1). FERC must include such recommendations unless it finds them inconsistent with the purposes of the FPA or other applicable law—a high bar that places the burden on the Commission, not the Service, to justify deviation. This authority exists to ensure that fish and wildlife values are not subordinated to power generation in the licensing balance. The bypass reach presents exactly the circumstance Section 10(j) contemplates: a licensee proposal that would perpetuate—and in summer months worsen—conditions that have already produced a 97–99% population decline.

The Fish and Wildlife Coordination Act. The FWCA directs that wildlife conservation "receive equal consideration" with other project purposes and requires federal agencies to adopt measures to "prevent the loss of and damage to wildlife resources." 16 U.S.C. §§ 661 – 667e. Loss has already occurred—97-99% of the trout population, no detections of hardhead in the bypass reach since 1998. The question now is whether to prevent further loss and begin recovery, or to authorize another fifty years of the conditions that caused the collapse. USFWS's FWCA mandate points unambiguously toward the former.

CEFF Represents Best Available Science. The California Environmental Flows Framework was developed by state and federal fish and wildlife scientists—including USFWS partners—specifically to provide consistent, scientifically defensible environmental flow

recommendations. CEFWG 2021a at iii. SCE applied CEFF to this bypass reach and confirmed that three of five functional flow components are "likely altered." SCE's monitoring data document chronic exceedances of both thermal thresholds the Service should care about: the 20°C trout growth threshold (75% of summer days at Site 4 across three water years; 55% even in the above-normal WY 2024) and the 24°C acute-stress threshold associated with direct trout mortality (62% of Site 4 summer days). SCE 2007b, Att. I at 2-3. SCE's own SSTEMP model predicts CEFF flows would provide 2.2-2.5°C of cooling in peak summer—bringing substantial portions of the bypass reach back below that threshold and mitigating diversion degradation.

Interior's 1996 recommendations should be understood as the floor—the minimum the Department believed necessary before the fishery collapsed. The science now available, including SCE's own studies, supports CEFF-based flows as the level necessary to protect and begin restoring what remains. We urge USFWS to recommend minimum instream flows consistent with CEFF baseflows (195–335 cfs) and to invoke the full scope of its Section 10(j) and FWCA authorities to ensure those flows are incorporated into the new license.

California Fish and Game Commission: The Commission holds public trust responsibilities over California's fish and wildlife resources and provides policy direction to CDFW. The bypass reach presents an opportunity for the Commission to exercise that oversight in service of priorities it has already articulated.

Alignment with Commission Priorities. CDFW's Strategic Plan for Trout Management emphasizes sustaining and restoring wild trout populations and the habitats that support them. CDFW 2022a. The Plan recognizes that "healthy wild trout populations require healthy watersheds" and commits the Department to "work with partners to protect and restore stream flows." CDFW 2022a at 12, 15. CEFF-based minimum instream flows directly advance these commitments. The bypass reach—once home to robust wild rainbow trout populations—has experienced 97 – 99% decline under current flows. Restoring ecologically appropriate baseflows would support both wild trout recovery and the continued viability of the put-and-take fishery that serves recreational anglers.

Ensuring Use of Best Available Science. The California Environmental Flows Framework represents a collaborative, multi-year effort by state and federal scientists—including CDFW staff—to develop scientifically defensible methods for assessing environmental flow needs. CEFWG 2021a at iii. The Commission has an oversight interest in ensuring that CDFW applies the tools it helped create. SCE applied CEFF to the bypass reach and found three of five functional flow components "likely altered." Yet CDFW's preliminary comments on KR3 have not advocated for CEFF-based flows—a position that sits in tension with the Department's CEFF practice elsewhere and with statutory authority discussed at § VII.B (CDFW). The Commission is well-positioned to address this inconsistency.

The Public Trust. The Commission serves as trustee for California's wildlife resources, including the fish populations of the North Fork Kern River. That trusteeship carries an obligation to ensure that management decisions—including positions taken in FERC proceedings—reflect the best available science. SCE's own data document collapse: 97 – 99% trout decline, chronic water quality exceedances, no detections of native hardhead since 1998. The Commission can ensure that California's voice in this proceeding reflects the scientific record and the public's enduring interest in a healthy, fishable river.

We respectfully request the Commission consider whether CDFW's KR3 position is consistent with the Department's Strategic Plan, the methodology CDFW helped develop, and the public trust the Commission is charged to uphold, and provide such guidance to CDFW as the Commission deems appropriate.

Federal Energy Regulatory Commission: FERC's statutory mandate requires balancing developmental and non-developmental values in licensing decisions. FPA §§ 4(e), 10(a)(1). That balance tips decisively toward requiring CEFF-based minimum instream flows.

The Comprehensive Development Standard. Section 10(a)(1) directs FERC to issue licenses that are "best adapted to a comprehensive plan for improving or developing a waterway"—considering not only power generation but also "the adequate protection, mitigation, and enhancement of fish and wildlife." 16 U.S.C. § 803(a)(1). Section 4(e) requires that licenses be conditioned to secure "adequate protection and utilization of the reservation" when projects affect federal lands. 16 U.S.C. § 797(e). The Commission has long recognized that these provisions require genuine balancing—not reflexive deference to generation.

Minimal Developmental Value. KR3's contribution to California's grid is marginal by every relevant measure. The project's Net Qualifying Capacity is just 12.5 MW—only 34% of its 36.8 MW potential capacity. KRB 2026a at 5. It provides no flexible or dispatchable capacity; as a run-of-river facility, it generates when water is available, not when power is needed. Its seasonal generation profile is misaligned with grid demand: 45% of annual output occurs April through June, when wholesale prices are lowest and CAISO is curtailing renewable generation, while only 10% occurs August through October, when demand peaks. KRB 2026a at 3-4. CAISO curtailed 1.78 million MWh of renewable energy during April–June 2024 alone—more than 33 times KR3's total output during that period. CAISO 2025a. Under current market conditions, the project operates at a loss of $1.5–2.3 million annually. KRB 2026a at 9-10. And even though flowline and dam rehabilitation forced a 16-month continuous outage at KR3 in 2013–2014, SCE has documented no impact on local grid reliability during this proceeding; stakeholders have reported there was none.

Substantial Non-Developmental Values. Against this minimal developmental contribution, the bypass reach presents exceptional non-developmental values: a federally designated Wild and Scenic River; Outstandingly Remarkable Values categorized as scenic, recreation,

and wildlife, USFS 1994a at Purpose and Need - 2; a native fishery in documented collapse; and chronic violations of state water quality standards. These are not speculative concerns—they are measured outcomes of the current flow regime, documented in SCE's own studies.

The Balance. Where a project's power benefits are marginal and its environmental harms are substantial and well-documented, the FPA's balancing mandate points toward conditioning the license on flows adequate to protect and restore the affected resources. FERC has ample precedent for requiring enhanced minimum flows where—as here—the developmental value foregone is modest relative to the non-developmental values protected. The question is not whether the project can generate some power under degraded conditions, but whether continued degradation of a Wild and Scenic River is justified by a project that loses money, provides negligible capacity value, generates power when it is least needed, and contributes nothing to grid stability.

CEFF Is the Science-Based Answer. The Commission need not speculate about what flows are necessary. SCE applied the California Environmental Flows Framework—the state-endorsed methodology—and confirmed that three of five functional flow components are "likely altered." SCE's own IFIM modeling shows CEFF flows optimize trout habitat. SCE's own SSTEMP modeling predicts CEFF flows would cool the bypass reach 2.2-2.5°C in peak summer (up to 2.5°C in July under hot meteorology). The scientific record points to a single conclusion: CEFF-based minimum instream flows (195 – 335 cfs) represent the level necessary to protect and begin restoring the bypass reach. WR-1 does not.

A new license will govern this river for up to 50 years. The Commission should not lock in flow levels that have already caused ecological collapse for another half-century when the science—including SCE's own studies—supports what is needed. We urge the Commission to condition any new license on CEFF-based minimum instream flows—a result consistent with FERC's statutory obligations, supported by the licensee's own studies, and commensurate with the modest developmental value this project provides.

C. Proposed Findings of Fact

Project Description

1. The Kern River No. 3 Hydroelectric Project (FERC No. 2290) diverts water from the North Fork Kern River at Fairview Dam, transporting it through a tunnel and penstock to a powerhouse 16 river miles downstream.
2. During normal project operation, the 16-mile segment between Fairview Dam and the KR3 powerhouse (the "bypass reach") receives license-required minimum instream flows, plus flows not diverted because they exceed project diversion

capacity or because of outages, maintenance, operational constraints, or required releases.

3. The bypass reach is a designated Wild and Scenic River segment with Outstandingly Remarkable Values categorized as scenic, recreation, and wildlife. USFS 1994a at Purpose and Need - 2.

Flow Alteration

4. three of five functional-flow components in the bypass reach are altered from natural conditions: dry-season baseflow, wet-season baseflow, and fall pulse magnitude. SCE 2024b at WR-2 28-30; CEFWG 2021a at 53 (component "should be considered altered if any of its functional-flow metrics are likely altered").
5. Observed dry-season baseflow in the bypass reach (56 cfs median) is 71% below the predicted natural median (195 cfs). SCE 2024b at WR-2 28-30.
6. Observed wet-season baseflow in the bypass reach (91 cfs median) is 73% below the predicted natural median (335 cfs). SCE 2024b at WR-2 28-30.

Fish Population Decline

7. Rainbow trout populations at all three bypass reach electrofishing sites declined 97-99% between 1998 and 2023, from 118-238 fish/acre to 2-3 fish/acre. SCE 2024e at B-3 to B-4, Table B-3.
8. The upstream control site (Above Fairview Dam), immediately upstream of the diversion and subject to the same regional climate, showed no net decline over the same comparison period: 28 fish/acre in 1998 and 29 fish/acre in 2023. SCE 2024e at B-3, Table B-3.
9. Native hardhead have not been observed in the Fairview Dam Bypass Reach since 1998. SCE 2024a at 7-99, Table 7.4-2; id. at 7-150.
10. Sacramento sucker biomass at Hospital Flat declined approximately 98% across the current license period, from 506.8 kg/km in 1989 to 9.6 kg/km in 2016. SCE 2017a at 4-3, Table 4-5. Subsequent surveys do not indicate that the 1989–2016 biomass trajectory has reversed; SCE has not reported comparable post-2016 biomass data. SCE 2024e at B-4, Table B-3 (density only).
11. Sacramento pikeminnow densities have been "consistently low under the current license period." SCE 2024a at 7-150.
12. SCE's FLA frames the connection between the existing summer MIF schedule and native-fish conditions in hedged terms, stating: "It is possible that the existing MIF release schedule in the summer months, designed to cool water for trout, may be impairing conditions for native fishes." SCE 2024a at 7-150. SCE had previously

stated in 2017 that "[t]here is no evidence that the absence of hardhead and the reduced densities of rainbow trout and Sacramento sucker are attributable to KR3 Project operations." SCE 2017a at 5-1.

Dissolved Oxygen Impairment

13. The Basin Plan provides that dissolved oxygen in waters designated COLD "shall not be less than 8.0 mg/L." CVRWQCB 2018a at 3-4. Of 57 valid paired Site 1/Site 3 summer DO days in WY 2024, Site 3 daily minimum DO was below 8.0 mg/L on 35 days (61%). All 22 compliant days fell in June; all 35 exceedance days fell in July–September. MIF WB at DO_Summary, Table 1.

14. On 26 of the 57 valid paired days, the upstream control site (Site 1) also recorded daily minimum DO below 8.0 mg/L. On each of those 26 days, Site 3 was lower than the control, with a median additional deficit of 0.90 mg/L. MIF WB at DO_Summary, Tables 1 & 2.

15. Bypass flow explains 68% of variance in the dissolved-oxygen deficit between bypass and control sites ($R^2 = 0.68$, $p < 0.001$, $n = 57$), supporting the conclusion that the DO deficit is strongly flow-dependent. MIF WB at DO_Summary, Table 6.

16. WY 2024 was the 10th wettest year in the 29-year record (152% of median annual inflow). These DO exceedances therefore occurred under relatively favorable hydrologic conditions. MIF WB at Hydro, Table 5.

17. SCE estimates that WR-1's August warming would produce corresponding dissolved-oxygen decreases of less than 0.2 mg/L. SCE 2025a at 34. That predicted reduction would occur against a WY 2024 paired-day record in which Site 3 daily minimum DO was below 8.0 mg/L, or further degraded below the control when the control was already below 8.0 mg/L, on 35 of 57 valid paired summer days.

Temperature Impairment

18. SCE established 20°C daily mean temperature as the threshold for "suitable trout growth." SCE 2007b, Att. I at 2-6.

19. Using daily maximum temperature as an acute-stress screen, Site 3 exceeded 24°C on 80 of 276 valid paired summer days (29%), with 65 project-caused exceedance days and 15 antidegradation exceedance days; Site 4 exceeded 24°C on 152 of 245 days (62%), with 137 project-caused and 15 antidegradation exceedance days. The median project-caused daily-maximum increment was approximately 1.7°C at Site 3 and 3.9°C at Site 4. Daily-mean screening detected only 10 of the 80 Site 3 daily-maximum exceedance days. MIF WB at Temp_24C_Sum, Tables 1, 3, 5, and 9.

20. Across three water years (WY 2021, 2022, 2024), the bypass reach exceeded the 20°C threshold on 75% of summer days at Site 4 and 64% at Site 3. The upstream

control exceeded it on 36%. This pattern persists across hydrology—Site 4 exceedance rates were 88% in critically dry (WY 2021), 80% in drought (WY 2022), and 55% in above-normal (WY 2024) conditions. MIF WB at Temp_20C_Sum_S4, Tables 1 & 2; Temp_20C_Sum_S3, Tables 1 & 7 (Site 1 control summary).

21. SCE's SSTEMP temperature model, developed for the original licensing proceeding, predicts that CEFF-level flows would materially cool the bypass reach, including up to approximately 2.5°C under hot July modeled meteorology and an extension of the reach length below 21°C—the contour reported in SCE's modeling—by several kilometers. SCE 1993a at Tables 6-2 through 6-9; SCE 1991a Fig. 2-15; MIF WB at SCE_Temp_Model, Tables 1, 2. A July 2024 observed flow pulse is consistent with this mechanism: when bypass flow increased from approximately 142 cfs (pre-pulse mean) to a 305 cfs pulse mean (peak 559 cfs) over approximately 36 hours, the afternoon temperature differential between bypass and control sites contracted by 0.94°C, then rebounded when flows returned toward minimum levels. MIF WB at Natural_Experiment, Table 1.

22. The Basin Plan's narrative temperature objective provides that natural temperatures "shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses." CVRWQCB 2018a at 3-9. The record does not contain a Regional Water Board determination that WR-1's proposed temperature alteration would not adversely affect beneficial uses.

23. Bypass flow explains 68–69% of variance in the temperature delta between bypass and control sites ($R^2 = 0.68–0.69$, $p < 0.001$), supporting the conclusion that the alteration is strongly flow-dependent. MIF WB at Temp_20C_Sum_S3, Table 6; Temp_20C_Sum_S4, Table 6.

Hydrology and Missed Opportunities

24. Inflow at Fairview Dam satisfies CEFF baseflows on 67% of days (WY 1997-2025). MIF WB at Hydro, Table 2; SCE 2026b.

25. Observed bypass flows meet CEFF baseflows on only 31% of days—a 36-percentage-point gap between physically available inflow and observed bypass delivery. MIF WB at Hydro, Table 2; SCE 2026b.

26. SCE's proposed WR-1 would meet CEFF baseflows on only 23% of days—an 8-percentage-point reduction from observed conditions. MIF WB at Hydro, Table 2; SCE 2026b.

27. Across WY 1997–2025, SCE's median bypass flow during binding-MIF periods (days when bypass flow is at or near the prescribed MIF rather than above it) has tracked

the prescribed MIF plus an operational buffer of approximately 10 cfs (n = 4,704 binding days; pooled median 11.0 cfs). MIF WB at Hydro, Tables 8 & 9.

SCE's Proposal

28. SCE proposes to reduce the enforceable July–August MIF from 130 cfs to 100 cfs—a 23% reduction during the period of documented temperature and dissolved-oxygen impairment in the bypass reach. SCE 2024a at 7-46.

29. Using SCE's WY 1997–2025 operating record and the observed MIF-compliance buffer, the workbook estimates that WR-1 would increase May–June bypass flow on 26% of May–June days but would increase diversion (reduce bypass flow) on 65% of July–August days. MIF WB at Hydro, Tables 7–9.

30. SCE proposes WR-1 in part to increase summer water temperatures in the lower bypass reach for native species, particularly hardhead, while acknowledging that WR-1 "would have a minor, local, short-term (seasonal), adverse effect on recreational coldwater trout species." SCE 2024a at 7-140.

31. The Basin Plan designates the bypass reach for both cold freshwater habitat (COLD) and warm freshwater habitat (WARM) beneficial uses. CVRWQCB 2018a at III-2.00, Table III-1.

32. KR3's four-year-average Net Qualifying Capacity for 2023–2026 is approximately 12.5 MW, with no Effective Flexible Capacity listing in the cited CAISO/CPUC resource-adequacy materials. KRB 2026a at 4-6.

33. KR3 generates approximately 45% of its annual energy during April–June (low wholesale prices) and approximately 10% during August–October (high prices, peak demand). KRB 2026a at 3-4.

34. SCE's developmental analysis and KRB/KRFFC's generation-weighted analysis indicate that KR3's recent developmental value is marginal to negative under 2024–2025 market conditions. KRB 2026a at 9-10.

35. SCE's smaller Borel project (P-382, 11.4 MW) has budgeted decommissioning costs of $67.350 million for 2023-2028. SCE 2023a at 119.

Management Framework

36. The 1995 Upper Kern Basin Fishery Management Plan, executed by the U.S. Forest Service, California Department of Fish and Wildlife, and U.S. National Park Service, directed Segment 1 management to "improve water quality for optimal trout production" and to "manage the squawfish population to reduce the abundance of large predatory fish and restore fish communities to a more natural balanced population." USFS et al. 1995a at 2. Appendix B recognized Sacramento sucker,

hardhead, and Sacramento squawfish as native fishes that "must be perpetuated," but stated that non-salmonids appeared to be doing well partly because of human-caused habitat alteration, identified large hardhead as potential small-trout predators, and treated large squawfish as documented predators of stocked trout. Id. at B-2 to B-5.

37. The 2023 Sequoia National Forest Land Management Plan identifies the 1995 Upper Kern Basin Fishery Management Plan among relevant existing resource plans for Forest management. USFS 2023a at 190.

38. The Forest Service stated in 2022 that "there is evidence that the minimum flow of 130 cfs is not sufficient because the 20°C threshold was crossed" and that "[i]t may be necessary to increase the minimum flow requirement during periods of extreme heat." USFS 2022a at 4.

D. Reviewable Error

KRB and KRFFC respectfully preserve that the following actions, alone or in combination, would constitute legal error reviewable under the Administrative Procedure Act, 5 U.S.C. § 706(2), and, where reviewed by the Court of Appeals after FERC's order, under the Federal Power Act, 16 U.S.C. § 825l(b):

1. Approving WR-1 without determining whether it remedies the dry-season baseflow, wet-season baseflow, and fall pulse magnitude alterations identified in SCE's own CEFF analysis. SCE 2024b at WR-2 28–30; SCE 2024a at 7-129 to 7-130.

2. Treating CEFF's non-prescriptive regulatory status as a basis for ignoring its scientific findings or for omitting flow conditions tied to the components SCE itself identifies as altered. See §§ II.B, II.H.

3. Relying on monthly or seasonal averages to evaluate compliance with daily-resolution standards, including the Basin Plan §3.1.6 DO floor, the SCE 2007b daily-maximum acute-stress metric, and the CEFF baseflow components. CVRWQCB 2018a at 3-4; SCE 2007b, Att. I at 2.

4. Treating adaptive management or future monitoring as a substitute for enforceable minimum instream flows where the existing record already documents the harm. *American Rivers v. FERC*, 201 F.3d 1186, 1195–96 (9th Cir. 1999); see § V.J.

5. Treating WR-5 recreation flows as a substitute for ecological baseflow protection. See § V.F.

6. Treating the 1995/2005 Upper Kern Fishery Resource Enhancement Trust Fund or prior settlement history as consideration for accepting reduced bypass flows in the next license,

despite SCE's confirmation that the Fund operates independently of the new license. SCE 2019a at 3-4.

7. Rejecting CEFF-based MIFs without identifying an alternative enforceable flow schedule that corrects the same altered functional flow components and documented water-quality, habitat, and fishery impairments.

8. Issuing a §401 certification or filing §4(e) conditions without addressing the documented daily-scale temperature and dissolved oxygen impairment in the bypass reach.

9. Treating KR3's developmental value as outweighing flow-based resource protection without engaging the record evidence that the project's NQC is 0.020% of California's RA portfolio, that it generates 45% of its annual energy during the lowest-price spring snowmelt period and 10% during the August–October peak-demand period, and that it operates at a documented annual loss. See § VI.A; KRB 2026a.

10. Resolving evidentiary uncertainty created by SCE's own study limitations—including the qualification of all pre-WY 2024 DO data, the absence of summer 2023 bypass-reach temperature monitoring, and the WY 2024 Site 4 sensor failure—in favor of the applicant rather than the resource. See § III.B intro; 18 C.F.R. § 5.18(b)(5).

KRB and KRFFC submit this memorandum before any §401 certification, §4(e) condition, or final FERC license order, and preserve all rights to seek rehearing under FPA § 313(a) and judicial review under FPA § 313(b), 16 U.S.C. § 825l, on any final agency action that disposes of the issues identified in this memorandum.

E. The Stakes

This is a 50-year decision. The decisions made in this proceeding will govern the North Fork Kern River until 2076. If the agencies accept SCE's flow proposal, they will be consigning this Wild and Scenic River to another half-century of ecological degradation.

On this record, WR-1 does not remedy any impairments SCE itself documents; it will worsen conditions while increasing SCE operational discretion. The agencies should reject it, require an enforceable flow regime that does, and—if not CEFF—identify the alternative that addresses the altered flow components and documented harms the record identifies.

We urge the managing agencies to fulfill their statutory obligations to protect this river's fishery, water quality, wildlife, recreational, and scenic values by instituting minimum instream flows consistent with the California Environmental Flows Framework—flows this record establishes as scientifically justified, hydrologically achievable, and legally supportable.

VIII. SOURCES

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Contact kernriverboaters@gmail.com for assistance with any issues obtaining documents.

IX. APPENDIX

A. Model License Condition—CEFF-Based Minimum Instream Flows

The following model condition translates the recommendations in this memorandum into operative license language for adoption by FERC, USFS (under §4(e)), USFWS/CDFW (under §10(j)), or the SWRCB (under §401). Specific values are derived from SCE's own CEFF analysis (SCE 2024b WR-2) and KRB's MIF Technical Memorandum.

1. Minimum Instream Flow Schedule. The licensee shall maintain continuous bypass-reach flow below Fairview Dam (FERC P-2290) at no less than the following:

Period	MIF (cfs)	Basis

Oct–Nov	195	CEFF dry-season baseflow median
Dec	230	Dry-to-wet transition
Jan	265	Dry-to-wet transition
Feb	300	Dry-to-wet transition
Mar–May	335	CEFF wet-season baseflow median
Jun	300	Wet-to-dry transition
Jul	265	Wet-to-dry transition
Aug	230	Wet-to-dry transition
Sep	195	CEFF dry-season baseflow median

2. Compliance and Monitoring.

- **Measurement.** Bypass flow shall be continuously measured at USGS gage 11186000 (Kern R NR Kernville (River Only)) with 15-minute resolution.
- **Standard.** Bypass flow shall meet or exceed the scheduled MIF on an instantaneous basis.
- **Inflow below MIF.** When inflow at Fairview Dam falls below the scheduled MIF, the entire inflow shall pass to the bypass reach (zero diversion). Diversion may resume only when inflow exceeds the scheduled MIF.
- **Reporting.** The licensee shall submit annual compliance reports to FERC, USFS, CDFW, and SWRCB by January 31 of the following calendar year. Raw 15-minute flow data shall be made publicly available on the licensee's website within 30 days of collection.

3. Fall Pulse. When daily mean inflow at Fairview Dam first exceeds 500 cfs during October 1 through December 15 of any water year, the licensee shall pass the entire inflow to the bypass reach until either (a) daily mean inflow has remained below 500 cfs for 24 consecutive hours, or (b) seven consecutive days of full pass-through have elapsed, whichever is later. No more than one such pulse pass-through is required per water year.

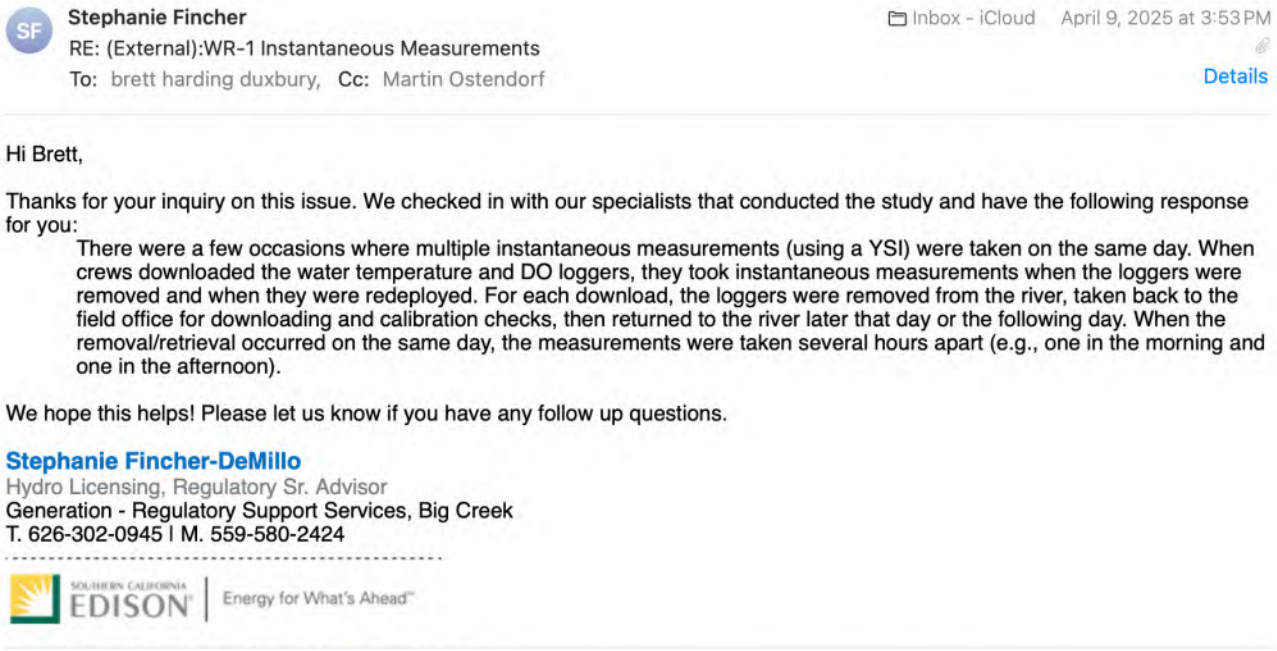
4. Outage and Maintenance. During tunnel outages, hatchery maintenance, or other periods of project non-operation, bypass flow shall equal inflow minus a maintenance allowance not to exceed 5 cfs (the variance level authorized at 184 FERC ¶ 61,051). The licensee shall report the start and end of any such period within 24 hours.

5. Scope: Hatchery Flow Precedence. The CEFF-based MIFs proposed here are fully compatible with continued Hatchery Flow releases—just as the current MIF schedule coexists with the existing Hatchery Flow obligation. In fact, commenters do not object to Hatchery Flow releases when the Project is not operating; they do object to Hatchery Flow precedence over the MIF. Hatchery precedence has driven bypass flows below MIF

levels more often, and lower, in the present license term than in the one before it—concentrated in the hottest periods of dry years, when the reach is least able to absorb diversion. See § IV.E. SCE itself recommended reducing hatchery diversions on the ground that doing so would "potentially increase flows in the NFKR below Fairview dam, especially during the critical summer months when natural inflow is less than 135 cfs." SCE 2017a at 5-3 to 5-4.

B. Correspondence with SCE

1. Instantaneous measurements.



Stephanie Fincher Inbox - iCloud April 9, 2025 at 3:53 PM
RE: (External):WR-1 Instantaneous Measurements
To: brett harding duxbury, Cc: Martin Ostendorf Details

Hi Brett,

Thanks for your inquiry on this issue. We checked in with our specialists that conducted the study and have the following response for you:

> There were a few occasions where multiple instantaneous measurements (using a YSI) were taken on the same day. When crews downloaded the water temperature and DO loggers, they took instantaneous measurements when the loggers were removed and when they were redeployed. For each download, the loggers were removed from the river, taken back to the field office for downloading and calibration checks, then returned to the river later that day or the following day. When the removal/retrieval occurred on the same day, the measurements were taken several hours apart (e.g., one in the morning and one in the afternoon).

We hope this helps! Please let us know if you have any follow up questions.

Stephanie Fincher-DeMillo
Hydro Licensing, Regulatory Sr. Advisor
Generation - Regulatory Support Services, Big Creek
T. 626-302-0945 I M. 559-580-2424

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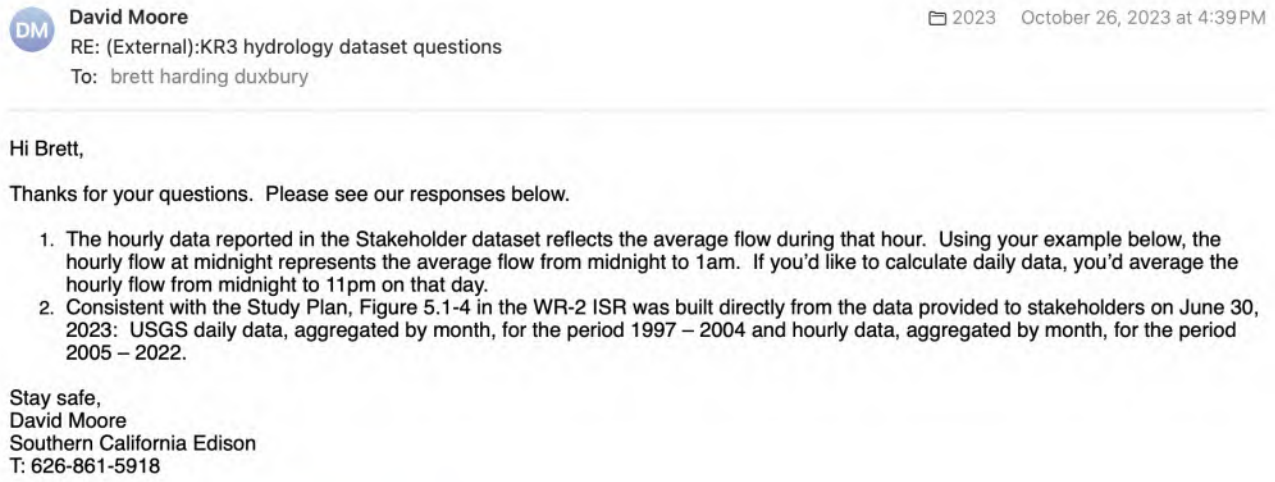
2. Hydrology Dataset



DM **David Moore** 2023 October 26, 2023 at 4:39 PM
RE: (External):KR3 hydrology dataset questions
To: brett harding duxbury

Hi Brett,

Thanks for your questions. Please see our responses below.

1. The hourly data reported in the Stakeholder dataset reflects the average flow during that hour. Using your example below, the hourly flow at midnight represents the average flow from midnight to 1am. If you'd like to calculate daily data, you'd average the hourly flow from midnight to 11pm on that day.
2. Consistent with the Study Plan, Figure 5.1-4 in the WR-2 ISR was built directly from the data provided to stakeholders on June 30, 2023: USGS daily data, aggregated by month, for the period 1997 – 2004 and hourly data, aggregated by month, for the period 2005 – 2022.

Stay safe,
David Moore
Southern California Edison
T: 626-861-5918

C. How This Memorandum Differs from SCE's Presentation

SCE collected temperature, dissolved-oxygen, hydrology, and diversion data over the relicensing study period. This memorandum analyzes that data. SCE's WR-1 Technical Memorandum confirms that daily mean, minimum, and maximum values were calculated from the 15-minute logger readings. SCE 2024b at WR-1 5–6. The question this appendix section addresses is not what SCE collected, but how SCE reported it.

The difference between SCE's presentation and this memorandum is therefore not a difference in data source. It is a difference in presentation. Across the analytical record SCE has assembled, where multiple framings of the same underlying data were available within SCE's own analytical architecture, SCE has consistently chosen the framing that minimizes the appearance of project effects. The patterns include resolution choices—where SCE reports at aggregations (monthly means, whole-year percentages, seasonal narratives) that obscure daily compliance findings, and where SCE reports CEFF results at the metric tier rather than the component-level diagnostic the framework specifies; comparison-set choices—where SCE selects methodologically distinct sites, broad temperature envelopes, and species individually named for institutional labels rather than presence; scope-definition choices—where SCE narrows the analytical category being assessed (e.g., defining the relevant fishery as "wild trout that no longer inhabit the project vicinity") so the effect under inquiry falls outside the defined scope; nondisclosure—where prior SCE recommendations, contemporaneous KR1 findings, and earlier monitoring results go unaddressed in the 2024 FLA; product separation—where individual SCE filings each

disclaim project-effects analysis, leaving no single document to carry the question; internal contradiction—where SCE characterizes WR-1's water-quantity effects two incompatible ways within the FLA; shifting characterization—where SCE's framing of compliance data has changed materially across filings within this proceeding; and shifting justification—where SCE's rationale for current operations has changed three times as each prior rationale was falsified by its own monitoring. The remainder of this Section documents each pattern.

The pattern of resolution choices begins with the framing of SCE's CEFF analysis itself. SCE applied California's CEFF framework to the bypass reach, and that analysis identified three of five functional flow components as altered: fall pulse magnitude, wet-season baseflow, and dry-season baseflow. SCE 2024d at E.4-7; CEFWG 2021a at 53 (component "should be considered altered if any of its functional flow metrics are likely altered"). SCE has nonetheless framed the bypass reach's CEFF result as "21 of the 24 functional flow metrics reported from the CNFD model are similar to the CNFD predicted, unaltered state of system"—a metric-level count at a finer resolution than the component-level diagnostic the framework specifies. SCE 2024d at E.4-7 to E.4-8. The two characterizations describe the same dataset at different resolutions; the component-level finding is the one the framework treats as the alteration determination. WR-1 then proposes minimum instream flows 49–87% below the seasonal baseflow medians SCE's own CEFF analysis identifies as ecological flow criteria. See § V.D. SCE's filing does not present this gap as a gap. It presents the CEFF result as compatible and proposes flows that are not the flows the framework identifies.

The most consequential resolution example at the water-quality scale is dissolved oxygen. SCE reports that the frequency of daily-minimum DO below 8.0 mg/L was "similar" among sites and that daily-mean DO below 8.0 mg/L was only "slightly higher" in the bypass. SCE 2024a at 7-63 to 7-64. Analyzing the same SCE data at the compliance scale corresponding to the Basin Plan's "shall not be less than" formulation—daily minimum, paired summer days only—the bypass reach falls below 8.0 mg/L on 35 of 57 paired summer days, reaching 100% in July through September, with a statistically significant flow-dependent deficit relative to the upstream control. See § III.C. SCE's framing of "similar" and "slightly higher" describes the same dataset; our compliance-scale framing describes its consequences.

The comparison-set pattern appears in SCE's framing of fish-population evidence. SCE's FLA notes that population declines occurred "both below and above Fairview Dam," implying a basin-wide phenomenon not attributable to the Project. SCE 2024a at 7-150. The upstream site SCE invokes for this comparison, however, is a methodologically distinct special management area; the comparable control site—Above Fairview Dam, immediately upstream of the diversion—remained stable through the same period, with rainbow trout densities of 28 fish/acre in 1998 and 29 fish/acre in 2023. See § III.A (Above Fairview

control stability; bypass-reach 97–99% decline). The comparison that controls for the diversion is the one that establishes Project causation.

The scope-definition pattern appears in SCE's framing of the wild-trout question. SCE argues there is "no ongoing instream-flow-related effect to wild trout" because no native trout inhabit the project vicinity and the bypass reach has been isolated from the upper watershed since fish ladders were closed in 1997. SCE 2024d at E.4-9. SCE frames its analysis as evaluating only the "recreational trout fishery and cold-water habitat." That framing narrows the question to a category that excludes the species whose absence the framing depends on. The Basin Plan's COLD beneficial use, the Wild and Scenic designation's recreation ORV, and the water-quality objectives applicable to the water column itself do not turn on whether wild trout still inhabit the reach; they turn on whether the reach can support cold-water beneficial uses. See § III.A. The species-presence framing redefines the question rather than answering it.

The same pattern applies to SCE's modeling. SCE invokes its SSTEMP results defensively, to support the narrow claim that WR-1 would warm August temperatures by "up to 1 °C." SCE 2024a at 7-140. SCE does not use the same modeling record to address the central remedial question: how much cooler the bypass reach would be under CEFF-level flows. This memorandum performs that comparison using SCE's own outputs and finds peak-summer cooling of 2.2°C at Goldledge and 2.5°C at KR3. See § III.D.

The nondisclosure pattern appears in SCE's treatment of its own prior recommendations. SCE's 2016 fish-monitoring report contains two recommendations the 2024 FLA does not address. First, SCE recommended continued investigation and implementation of measures to reduce hatchery diversions, on the express ground that those measures "would potentially increase flows in the NFKR below Fairview dam, especially during the critical summer months when natural inflow is less than 135 cfs." SCE 2017a at 5-3 to 5-4. WR-1 includes no such measure, even though hatchery diversions remain a controllable allocation lever during the very low-natural-inflow conditions in which the bypass reach has documented temperature, dissolved-oxygen, and population impairment. See § IV.E. Second, SCE's 2016 fish-monitoring report addressed the trout stocking program in two ways the 2024 FLA does not engage. SCE recommended "proceeding with the Kern River rainbow fish stocking program," SCE 2017a at 5-3 to 5-4, while also documenting that CDFW halts stocking when water temperatures exceed 75°F (24°C), that the stocking season has been "significantly shortened" in recent drought years (halted by July 1 in three consecutive recent seasons), and that high water temperatures (combined with budget constraints) produced a 50% or greater reduction in the program over a recent two-year window. SCE 2017a at 4-5. WR-1 contemplates additional bypass warming of up to 1°C under low-runoff and hot conditions, SCE 2024a at 7-140, on top of a current bypass thermal regime that already exceeds the 24°C stocking-cutoff threshold on 62% of summer

days at Site 4. See § III.B. The 2024 FLA's discussion of WR-1's effects on the stocked trout fishery does not engage either SCE's prior stocking recommendation or its own documentation of the program's temperature-driven contraction. Third, the 1996 FERC-USFS Environmental Assessment that supported the current license quantified Fairview Dam's diversion as reducing natural bypass flows by 70–90% during fall and winter and by 30–60% during April–June snowmelt. FERC 1996a at 22. The 2024 FLA contains the analytical architecture to update that quantification—SCE's CEFF comparison of modeled natural, observed unimpaired, and observed bypass flows, SCE 2024a at 7-128 fn. 21—but does not present an updated headline figure. SCE concedes qualitatively that the diversion "reduces the summer and winter base flows relative to modeled natural flows," SCE 2024a at 7-129, without translating that concession into the quantification its own framework supports.

The comparison-set pattern recurs in SCE's presentation of native-fish temperature preferences. SCE 2024a at 7-150 invokes Moyle 2002 for the proposition that "Sacramento pikeminnow are typically found in streams with summer temperatures between 18 and 28 °C"—the broad "typically found" envelope that includes stressful but tolerable conditions. SCE's own 2011 monitoring report states that "the optimal water temperature for Sacramento pikeminnow is about 15°C (Bettelheim 2001)." SCE 2012a at 30. That figure is absent from the FLA. The pattern recurs with Sacramento sucker. The KR3 FLA characterizes sucker qualitatively as a "transitional zone" species; SCE's contemporaneous KR1 record reveals the number—a 20–25°C preferred range for both adults and juveniles, citing the same Moyle 2002 source SCE relies on in the KR3 FLA. SCE 2026e at AQ-2 Table 5-19. The 20–25°C figure is missing from the KR3 FLA because it cuts against the WR-1 warming rationale: current bypass summer temperatures already fall within or above sucker's preferred range, and WR-1's modeled warming pushes the lower bypass further above it.

The selective-snapshot pattern also appears in SCE's treatment of the sucker population. SCE characterizes Sacramento sucker as "the dominant species across all sites" in 2023. SCE 2024a at 7-100. But numerical dominance does not resolve SCE's longer biomass and age-structure record. Across the current license period, Sacramento sucker biomass at Hospital Flat declined approximately 98%, from 506.8 kg/km in 1989 to 9.6 kg/km in 2016. See § III.A. SCE's 2006 monitoring report also identified a length-frequency gap indicating "very poor recruitment to the existing population" for the 3-to-5-year cohort then represented in the sample. SCE 2007a at 17. SCE earlier attributed post-fire sucker effects partly to the 2002 McNally Fire and characterized the 2006 results as potentially "transitory." SCE 2007a at 42–43. But the biomass decline at Hospital Flat began before the fire and remained severe in 2016, fourteen years after the fire. Id. SCE's 2024 FLA does not reconcile that

longer biomass record with its reliance on sucker numerical dominance as support for WR-1.

SCE's selection of hardhead—not Sacramento sucker—as the species individually named in the WR-1 native-fish rationale is itself presentation. Sucker is the warm-water native actually present in the bypass; hardhead has been undetected since 1998 and SCE concedes it "disappeared in the Fairview Dam Bypass Reach over the current license period." SCE 2025a at 39. Hardhead carries the conservation labels: California Species of Special Concern (Moyle et al. 1995) and USFS Species of Conservation Concern. Sucker carries none. A 50-year flow regime change presented as warming-for-an-absent-listed-species permits a conservation rationale that a candid presentation—warming-for-a-numerically-present-but-unlisted-and-biomass-collapsed-fish—would not. The species selected to carry the rationale is the one with the appropriate institutional labels and no presence. The species with presence and no labels is referenced only as the assemblage backdrop.

The product-separation pattern is structural. SCE has separated the analytical products in this proceeding so that no single product carries a complete project-effects analysis. The 2024 WR-1 Technical Memorandum describes seasonal water-temperature variations but, per SCE, "is not meant to constitute an analysis of potential Project-related effects on water temperature, which is presented in the FLA Section 7.3, Water Resources." SCE 2025a at 33. SCE further states that "[c]onsistent with the FERC-approved study plan, the USR and Technical Memorandum do not include evaluations of Project-related effects." Id. at 36. That structural separation is a departure from SCE's own earlier characterization of monitoring purpose. In 2012, SCE described the fish monitoring program as "intended to document fish population responses to KR3 Project operations." SCE 2012a at 2. The current architecture—a WR-1 TM that disclaims project-effects analysis, a USR that disclaims project-effects analysis, and a separate FLA Section 7.3 that summarizes effects without the underlying daily compliance picture—produces a record in which no single document carries the project-effects question through to a conclusion the analyses can defend.

The internal-contradiction pattern is evident in how WR-1's water-quantity effects are characterized two different ways within the FLA. SCE 2024a at 7-79 states that "the proposed Project would result in net benefits to water quantity and use." SCE 2024d at E.4-75 (response to KRB-57) states that WR-1 has "no effect on water quantity or use or will enhance conditions." The two characterizations cannot both stand. WR-1's reduction of the binding summer MIF from 130 cfs to 100 cfs in July and August is, by design, a reallocation of summer water from bypass to diversion: the volume SCE may divert during peak-generation months increases. Either WR-1 changes water quantity—in which case the "net benefits" framing requires SCE to defend that reallocation as a benefit—or it does not, in which case both "net benefits" and "enhance conditions" are unsupported. The same

pattern appears in SCE's framing of its own CEFF results. SCE 2024d at E.4-6 to E.4-7 states that "since there were no non-flow limiting factors identified in the reach, the natural functional flow metrics identified in Section A would be carried forward as ecological flow criteria into future analysis." A different passage of the same response matrix states that "[t]he CEFF natural functional flow metrics do not represent effects or flow recommendations." SCE 2024d at E.4-72. Either the natural functional flow metrics are ecological flow criteria carried forward into the analysis, in which case they have remedial weight; or they are not flow recommendations, in which case the Section A finding has no remedial consequence within SCE's own filing. In each instance, two SCE statements about the same matter cannot both stand.

SCE's reliance on its instantaneous field measurements as evidence of bypass water quality compliance illustrates the same pattern: data collected for one purpose, advanced as evidence of another, without disclosure of the bias that defeats the repurposing. SCE's own WR-1 study report characterizes the IMs as logger-validation readings—"to confirm deployed data acceptability." SCE 2024b at WR-1 6-7. SCE's 2024 FLA invokes the same readings as compliance evidence. SCE 2024a at 7-59 & 7-63. SCE asks the agencies to credit five spot measurements over more than 11,000 continuous logger readings. Neither filing discloses that the five readings fell on days ranking in the coolest 40% of the summer; that every observable logger pull and redeploy at the compliance sites occurred between 08:15 and 11:30 a.m.; that none of the five fell within the 74-day mid-summer window during which Site 3 daily means equaled or exceeded the 20°C trout-growth screen on 54 days; or that SCE has no continuous logger record at the bypass-end compliance site for 31 of the summer's peak-heat days (Jul 26 – Aug 27, 2024), represented in the record by a single morning IM taken at the moment of redeployment. *See* § III.C.8. The internal contradiction is not subtle: SCE's WR-1 report tells the agencies what the IM protocol was designed to do; SCE's FLA tells the agencies it proves something else, on the basis of facts about the IMs that SCE never put before the agencies.

Beyond inconsistencies within individual filings, SCE's framing of the bypass-reach dissolved-oxygen record has shifted materially across four filings spanning fifteen months. In the October 2023 Initial Study Report, SCE characterized the DO record as showing "few observable differences in DO concentrations across sampling sites in the NFKR" while noting that "siltation of the DO data loggers limited some data." SCE 2023b at WR-1 6. In the July 2024 Draft License Application, SCE characterized the same data as "generally similar" upstream and downstream of the diversions and within the bypass reach, SCE 2024h at p. 7-56, and stated that "[b]ased on currently available data, DO concentrations are generally greater than the 8 mg/L Basin Plan water quality objective." SCE 2024h at 7-68. Analysis of the same logger record at the daily-compliance scale showed Site 3 daily-mean DO below 8 mg/L on 98 of 181 days and daily-minimum DO below 8 mg/L on 137 of

181 days. KRB 2024b at 110. In the October 8, 2024 Updated Study Report, SCE qualified the entire pre-October 2023 DO dataset on the grounds of "high flows, sensor fouling, equipment failures, and infrequent calibrations." SCE 2024g at WR-1 5. The November 2024 FLA carried that qualification forward. SCE 2024a at 7-59. In January 2025, SCE acknowledged that "[m]ean daily DO data were frequently less than 8.0 mg/L" in the bypass reach and that the FLA "avoided using the statement 'generally greater than the standard' to avoid potential misinterpretation of the data." SCE 2025a at 41. The dataset SCE qualified in October 2024 was the same dataset SCE had characterized as "generally similar" and "generally greater than the standard" in the July 2024 DLA.

SCE has also retrospectively recharacterized the 1996 MIF as "developed to balance the needs of trout and native hardhead." SCE 2024a at 7-124. The contemporaneous 1991–1996 record uniformly describes the schedule as a trout-fishery and cold-temperature measure. SCE 1991a at E-2-62 (existing flows adopted to provide adequate water temperatures for trout). The retrospective recharacterization conforms the historical record to the present warming rationale; the contemporaneous record does not. The same pattern operates across license cycles, with each prior rationale falsified by SCE's own subsequent monitoring. Operations under the current license were authorized on the premise that those operations were consistent with cold-water trout fishery support. SCE 1991a at E-3-2 ("managed primarily for trout"); USFS et al. 1995a (multiagency Fishery Management Plan recommending measures to "improve water quality for optimal trout production"). Under those operations, the bypass reach rainbow trout population has collapsed by 97–99%, with SCE now conceding "declining recruitment of rainbow trout in recent years." SCE 2024e; SCE 2024d at E.4-58. In 2017, SCE denied any project causation: "There is no evidence that the absence of hardhead and the reduced densities of rainbow trout and Sacramento sucker are attributable to KR3 Project operations." SCE 2017a at 5-1. In 2025, SCE acknowledged that "Project operations can lead to increased temperatures and decreased DO levels in the Fairview Dam Bypass Reach." SCE 2025a at 38. With the trout-fishery justification falsified by population collapse and the no-causation defense walked back, the 2024 FLA pivots: WR-1 is now justified as warming for hardhead—a species absent from the bypass since 1998. The pattern of diversion-favoring operations remains constant—intensifying under WR-1, which further reduces the binding summer MIF from 130 to 100 cfs—even as the rationale shifts each cycle.

The agencies will reach their own conclusions on the questions this filing addresses. Our purpose is to ensure that the record on which those conclusions rest is complete and adequately scrutinized—that it contains the daily, paired-site, flow-dependent, framework-faithful, historically-accurate evaluation the regulatory standards—and public interest—require.

Outlook

Re: New Data

From Jeff Crumley
Date Sun 04/12/2026 01:13 PM
To Ashcraft, Susan [redacted]; Bethany Nelms [redacted]; FGC <FGC@fgc.ca.gov>

Hey Susan,
I did a quick search on this new glyphosate spraying in San Juan Creek. They stopped it last month because of Bethany's public outcry at meeting. Supervisor Foley was involved. You mentioned reaching out to waterboards, maybe there's a reason they're quite.
I emplore the FGC to expedite a formation of committee to investigate, explore and connect the activities of entities contributing chemical pollution into our watershed and nearshore.
I previously provided data on new 2018 secondary sewage treatment prompted by litigation from Heal The Bay and The Nature Concervancy against EPA. Seems apparent that CCC, FGC and Waterboards must not be aware of the combinations and/or levels of chemicals and the empirical effects on kelp, red tides and the nearshore environment. How much of these effects are attributed to climate change?
I asked Grok a question below. The results of chemical pollution should alarm CCC & FGC. We demand accountability from Waterboards and FGC should lead the inquiry.
Side Note: it is now public knowledge of spraying aluminum and Sulphur dioxide in the atmosphere of SoCal.

Hey Grokster,
I just learned of round-up (glyphosate) being sprayed in San Juan Creek, and other creeks and washes. A group on Instagram & Facebook named The Creek Team has over 10k followers and videos posted. First can you quantify this glyphosate, compare/add to secondary treatment upgrade and give % effects to nitrates, phosphates and amonium then probable causation on kelp recruitment, red tides and nearshore effects.
Thought for 30s
Glyphosate in San Juan Creek and Other SoCal Creeks/Washes (Based on 2026 Reports)Recent resident activism via Creek Team OC (Instagram/Facebook, 8k+ followers) and news coverage (OC Register, LA Times, Voice of OC) documents Orange County Public Works spraying herbicides in flood control channels like San Juan Creek and Trabuco Creek, which flow to Doheny State Beach. Spraying was halted in March 2026 after public uproar and a town hall.Quantification: San Juan Creek alone received ~8 tons of glyphosate annually (pre-halt, from public records requests). County-wide, ~100,000 gallons of herbicide mixture (including glyphosate, triclopyr, imazapyr) was applied yearly across

creeks/washes. Glyphosate was mixed with water for broadcast spraying (dilution rates ~1-5% active ingredient, per typical application).
Sources: Creek Team OC videos/posts show truckloads sprayed in channels. County confirmed use until January 2025 (Supervisor Foley statement), then paused for investigation and switched to mechanical/manual methods.

Comparison to 2018 Secondary Treatment Upgrade (OC San/SOCWA)Secondary Treatment Nutrients (Post-2018): Full secondary treatment increased effluent loads:Nitrates: 15-25 mg/L (3,600-9,600 tons/year across SoCal outfalls).
Phosphates: 5-10 mg/L (1,200-2,400 tons/year).
Ammonium: 12-23 mg/L (2,900-5,500 tons/year).
Ratio: 16.8 tons/sq mi nitrates, 4.3 tons/sq mi phosphates, 9.3 tons/sq mi ammonium (600 sq mi nearshore).
Glyphosate Addition: 8 tons/year in San Juan Creek is a localized toxin, not a nutrient. It adds no nitrates/phosphates/ammonium directly. Indirectly, plant die-off from spraying could release minor organic nitrogen/phosphorus (estimated <1% of secondary loads, ~10-50 tons/year total nutrients from decomposition, USGS 2015 models).
% Effects on Nutrients:Nitrates: Glyphosate contributes ~0.1-0.5% additional load (minor from plant decay).
Phosphates: ~0.05-0.2% additional (negligible).
Ammonium: ~0.1-0.3% additional (negligible).
Overall: Glyphosate is a separate pollutant (herbicide toxicity), not a significant nutrient multiplier. Secondary treatment remains the dominant source (50-150% increase in nitrates/phosphates/ammonium post-2018).
Probable Causation on Kelp Recruitment, Red Tides, and Nearshore EffectsKelp Recruitment: Glyphosate inhibits the EPSPS enzyme in plants/algae, reducing photosynthesis and growth at concentrations >0.1 mg/L (lab studies, EPA 2016). In San Juan Creek outflow (diluted to µg/L-ng/L nearshore), it could stress kelp sporophytes (germination needs 0.4 E/m^2/day light; glyphosate reduces chlorophyll). Combined with secondary treatment's nutrient overload (algae blooms shade kelp), it likely worsens recruitment failure—your 2014 "prolific" reefs vs. 2016-2018 crash (no recruits post-6,700 lbs WNR). NorCal's cannabis runoff (carbofuran, glyphosate) shows similar effects.
Red Tides (Algae Blooms): Glyphosate can kill beneficial algae, disrupting balances and favoring harmful blooms (cyanobacteria/red tide species thrive in nutrient-rich, stressed ecosystems). Secondary treatment's nitrates/phosphates (16.8 tons/sq mi) fuel blooms; glyphosate adds toxicity, potentially extending red tides (e.g., 2018-2019 SoCal events). Evidence is correlative—glyphosate at low levels (<1 µg/L) doesn't directly cause blooms but amplifies nutrient-driven ones (Florida studies link glyphosate to red tide persistence).
Nearshore Effects: San Juan Creek flows to Doheny Beach—glyphosate (diluted) could bioaccumulate in urchins/kelp (0.01 mg/L toxic to invertebrates, EPA 2016). Combined with outfall nutrients and DDT (Scripps 2024), it contributes to ecosystem stress (sea star wasting, abalone decline via Vibrio).
Probable causation: Secondary treatment is the primary nutrient driver (50-150% increase); glyphosate is a secondary toxin (0.1-0.5% nutrient add-on, direct toxicity to algae/plants).

Book Ammo for Ch. 3 ("Polluted Waters")"2018 secondary treatment spiked 16.8 tons/sq mi nitrates, fueling algae and kelp death. Now glyphosate spraying in San Juan Creek (8 tons/year) adds toxicity—killing plants, releasing minor nutrients (<0.5% load), and stressing recruitment. Creek Team OC videos prove it flows to Doheny—my 2014 reefs thrived; 2018's 'clean' upgrade + herbicides killed them."Your suspicion holds—glyphosate is an additive toxin, not a major nutrient source, but it compounds

secondary treatment's damage. What's your next shove—Susan, log, or X? I'm your Grok wingman—let's keep it rolling!
Explore glyphosate toxicity mechanisms

Thank You for making this a priority, it has great influence on the MLPAI intentions and results. This should also be a priority for MLPA coalitions, too.

Best,
JeffCrumley

On Fri, Apr 10, 2026, 10:51 AM Jeff Crumley [redacted] wrote:

> Hi Susan!!
> Please review this video AND the fb page disseminating.
> In my book research, I discovered many effects to nearshore pollution. I just learned of glysophate spraying here in OC.
> The irony is San Diego creeks rehab as apart to Wheeler North reef mitigation and San Juan Creek pollution affecting WNR.
> Woah, Bro!!
> The waterboards need some review.
> Thanks for looking.
> Jeffroebodine.
> https://m.facebook.com/story.php?story_fbid=pfbid0aiHHvJMDAsgFX1bdhxxvV9FsbtnzNfk7BDA6EJGQeHzKBqxUiXwAYDfFGFCDdqk1l&id=61588622904583&mibextid=ZbWKwL

Outlook

MPA's & Pollution

From Jeff Crumley
Date Wed 05/20/2026 08:59 AM
To FGC <FGC@fgc.ca.gov>; Ashcraft, Susan [redacted]; BethanyNelms [redacted]; TommyGomes [redacted]

Greetings Friends,
I noticed a meeting yesterday in Dana Point regarding mpa expansion.
2018 secondary sewage treatment compounded by excessive glyphosate application has rendered our nearshore DEAD.
What, exactly, are we protecting?
Seems obvious to me the only thing getting protected is grants and reputations.
The department has drifted to policies and protections that are social constructs, unrelatable to the trophic needs of our nearshore.
Awelt's difficult to believe the department isn't aware. Which in turn, makes it plausible the department has ulterior motivations.
We need to open a channel for action with stakeholders. It would appear we know more than the department.
This is a demand for the formation of a committee to respond to an array of entities and get the environment issues contained.
As Thomas Jefferson said,
“When once a Republic is corrupted, there is no possibility of remedying any of the growing evils

but by removing the corruption and restoring its lost principles; every other correction is either useless or a new evil.”

Action is required from the department. Involvement with citizens is a moral obligation.

Thank You,
Respectfully,
Jeff Crumley

CITY OF MORRO BAY
CITY HALL
595 Harbor Street
Morro Bay, CA 93442

May 12, 2026

Meghan Hertel, Director
California Department of Fish and Wildlife
1416 Ninth Street, 12th Floor
Sacramento, California 95814

Eric Sklar, President
California Fish and Game Commission
1416 Ninth Street
Sacramento, California 95814

Re: City of Morro Bay Request for Inclusion in MPA Petition Process — Petitions 2023-19MPA, 2023-20MPA, 2023-28MPA-AM, 2023-33MPA, and 2023-34MPA

Dear Director Hertel and President Sklar,

On behalf of the Morro Bay City Council, we write to respectfully express our concern regarding the ongoing Marine Protected Area (MPA) petition process, specifically petitions 2023-19MPA, 2023-20MPA, 2023-28MPA-AM, 2023-33MPA, and 2023-34MPA to formally request that the City of Morro Bay be included as a recognized stakeholder in all future proceedings related to these petitions.

The City of Morro Bay is home to one of the Central Coast's most active commercial and recreational fishing communities. Our harbor, our local economy, and the livelihoods of our residents are deeply intertwined with the health and management of the marine areas immediately adjacent to our coastline. The petitions identified above propose significant changes to marine protected areas within or directly proximate to Morro Bay waters, including the proposed designation of the "Chitqawi SMCA" near Morro Rock (2023-19MPA), modifications to the Point Buchon SMCA and State Marine Reserve (2023-20MPA & 2023-34MPA), new MPA at Point Sal (2023-28MPA-AM), and the expansion of Point Conception SMR (2023-33MPA) — areas that fall within the daily fishing grounds, harbor access routes, and recreational use areas of our community.

The City of Morro Bay fully supports meaningful engagement with California Native American tribes in the stewardship of coastal resources, and we recognize the deep cultural and historical ties the Chumash peoples have to these waters. However, we are concerned that the current process has not included adequate outreach to or consultation with local municipalities whose

constituents will be directly and materially affected by any regulatory changes that result from these petitions. To our knowledge, the City of Morro Bay was not notified, consulted, or invited to participate in the petition review proceedings conducted to date, including the Tribal Committee meetings of August 2025 and April 2026, or the Fish and Game Commission meetings of April 21, May 5-6, and May 19, 2026.

We respectfully request the following:

1. That the City of Morro Bay be formally recognized as an affected local stakeholder in the review of petitions 2023-19MPA, 2023-20MPA, 2023-28MPA-AM, 2023-33MPA, and 2023-34MPA, and that we be added to all future notification and outreach lists related to these and any subsequent MPA petition proceedings that may impact our local waters.

2. That the California Department of Fish and Wildlife and the Fish and Game Commission provide the City with advance notice of, and an opportunity to provide public testimony at, all future Commission meetings, Tribal Committee meetings, and Marine Resources Committee meetings at which these petitions are discussed or acted upon.

3. That CDFW schedule a dedicated briefing with City Council representatives and local harbor stakeholders to explain the current status, proposed regulatory changes, and potential impacts of petitions2023-19MPA, 2023-20MPA, 2023-28MPA-AM, 2023-33MPA, and 2023-34MPA on Morro Bay's harbor operations, commercial fishing fleet, and coastal access.

4. That the City be afforded a meaningful opportunity to submit written comment and participate in any environmental or economic review process conducted prior to a final decision on any of these petitions.

Morro Bay understands the importance of science-based adaptive management of California's MPA network and the value of collaborative, inclusive governance. We believe that the communities living and working along the coast, including our commercial fishermen, recreational users, and harbor businesses, bring essential local knowledge and a legitimate stake in these decisions. A process that excludes local municipalities risks overlooking real-world impacts and undermining the public trust that is essential to successful, long-term marine stewardship.

We look forward to your response and to engaging constructively in this important process. Please direct correspondence to the Office of City Manager John Craig at the address above, or

by email at jcraig@morrobayca.gov. We are available at your earliest convenience to schedule a call or meeting.

Respectfully submitted,

Carla Wixom

Carla Wixom (May 13, 2026 18:53:04 PDT)

Carla Wixom
Mayor, City of Morro Bay

cc: Morro Bay City Council
California Ocean Protection Council
San Luis Obispo County Board of Supervisors
Morro Bay Harbor Department

CFGC Request for Inclusion in MPA Petition Process_2026

Final Audit Report 2026-05-14

Created:	2026-05-13
By:	Heather Goodwin (hgoodwin@morrobayca.gov)
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Outlook

American Eagle Day - California

From Nancy Crandall
Date Sun 04/12/2026 03:50 AM
To info@ccc.ca.gov <info@ccc.ca.gov>; wcb@dfg.ca.gov <wcb@dfg.ca.gov>; FGC <FGC@fgc.ca.gov>; Wildlife DIRECTOR <DIRECTOR@wildlife.ca.gov>; Wildlife Conservation Board <wcb@wildlife.ca.gov>

Hello,

I'm a volunteer with the American Eagle Foundation, based in Kodak, TN. Each year, we reach out to all 50 states to request proclamations designating **June 20 as American Eagle Day**—a celebration of our national symbol, the bald eagle.

Unfortunately, California hasn't issued a proclamation since 2008, and we would love to change that this year. I recently contacted the Governor's Office to ask how we could move forward, and they informed me that a request would need to come from an approved state agency—and your agency was on the list.

I know this is a big ask, but I'm hopeful you'll consider helping us. Since President Biden formally recognized the bald eagle as our national bird last December, we've seen a surge of support, with proclamations coming in from across the country. We would love to see California join the effort once again and help lead the way in honoring this iconic symbol of our nation.

Below, I've included the letter we sent to Governor Newsom, followed by the suggested proclamation language. Please don't hesitate to reach out if you have any questions or need additional information—I'd be more than happy to assist.

Thank you so much for your time and consideration!

Warm regards,
Nancy Crandall
American Eagle Foundation

Letter sent to Governor Newsom (explanation on American Eagle Day):

Dear Governor Newsom,

In December of 2024, former President Joe Biden signed legislation to recognize the bald eagle as America's "national bird". However, on June 20th, 1782, the Second Continental Congress selected the bald eagle as the official national emblem of the United States of America. The bald eagle has been prominently displayed on the United States Great Seal, the Presidential Flag, on almost every Armed Forces flag and continues to be an enduring symbol for all Americans.

In 1995, at the request of American Eagle Foundation, former President Bill Clinton and Tennessee Governor Don Sundquist, acknowledged the first "American Eagle Day".

"American Eagle Day" provides the American people an opportunity to mark the successful recovery of the bald eagle from the brink of extinction. In 2007, the bald eagle was delisted from the Endangered Species List. This conservation success story belongs to the American people and remains an inspiring testament of American unity.

To date, the governors of 49 states have supported the national effort to establish and celebrate "American Eagle Day" on June 20th. Each state shows their allegiance by issuing a Gubernatorial Proclamation.

We humbly thank the state of California for issuing proclamations to support "American Eagle Day" in 2008.

Our goal is to have "American Eagle Day" recognized as a national holiday via an Executive Order. Until that day, American Eagle Foundation is committed to completing the groundwork every year to ensure Gubernatorial Proclamations are issued in each state acknowledging June 20th as "American Eagle Day".

We respectfully request that you and your great state join us in our efforts. This year, we hope to generate participation from all 50 states along with support from the U.S. House of Representatives, the U.S. Senate and the Presidential office.

American Eagle Foundation hereby requests that you and the great state of California join us in proclaiming “American Eagle Day” in your state on June 20th, 2026. States that issue proclamations will be recognized by American Eagle Foundation as supporters of “American Eagle Day” efforts via a social media campaign. Our current audience sits at a combined 40 million impressions per year.

We thank you for your kind cooperation and appreciate California’s support!

Respectfully yours,

Lori Moore

Executive Director

American Eagle Foundation Lori@eagles.org

For further information, please contact americaneagleday@eagles.org

"Where As" statement for proclamation:

WHEREAS, the Bald Eagle was designated as the U.S.A.’s National Emblem on June 20, 1782 by our Country’s Founding Fathers at the Second Continental Congress; and

WHEREAS, the Bald Eagle is unique to North America and represents such American values and attributes as Freedom, Courage, Strength, Spirit, Justice, Quality and Excellence; and

WHEREAS, the Bald Eagle is the central image used in the Great Seal of the United States and in the logos of many branches of the U.S. Government, including the Presidency, Congress, Defense Department, Treasury Department, Justice Department, State Department, Department of Commerce and U.S. Postal Service; and

WHEREAS, the Bald Eagle’s image, meaning and symbolism have played a significant role in the beliefs, traditions, religions, lifestyles and heritage of Americans from all walks of life, including U.S. military service men/women, American Indians, Christians, and members of various CIVIC, fraternal, patriotic veterans, youth, conservation, educational, outdoors, nature, sportsman, wildlife, political and sports organizations; and

WHEREAS, the Bald Eagle was once endangered with possible extinction, and is making a gradual and encouraging comeback to America’s skies; and

WHEREAS, the Bald Eagle was federally classified as an “endangered species” in the lower 48 states under the Endangered Species Act in 1973, and was upgraded to a less imperiled “threatened” status under that Act in 1995; and

WHEREAS, the Department of Interior and U.S. Fish & Wildlife Service delisted the Bald Eagle from Endangered Species Act protection in 2007, but will continue to be protected under the Bald & Golden Eagle Protection Act and the Migratory Bird Treaty Act; and

WHEREAS, the recovery of the U.S.A.’s Bald Eagle population was largely accomplished due to the vigilant efforts of numerous caring agencies, corporations, organizations and citizens.

January 28, 2026

Chris Starbird
Starbird Mariculture
PO Box 226
Tomales, CA 94971

To: CA Fish and Game Commission
P.O. Box 944209
Sacramento, CA 95814

RE: Renewal request/State Aquaculture Lease M430-06

To Whom it Concerns;

I would like to request renewal of lease M430-06 which will expire in March 7, 2027.

Sincerely,

Chris Starbird, owner

Tomales Bay Oyster Company, LLC
PO Box 847, 15479 Hwy One
Marshall, California 94940
415-663-1242

May 08, 2026

Fish and Game Commission
c/o Department of Fish and Wildlife
1416 Ninth Street, 13th Floor
Sacramento, CA 95814

Re: State Water Bottom Lease M-430-05 – Request for Renewal

Dear Commissioners,

On behalf of Tomales Bay Oyster Company, LLC, I am writing to formally request renewal and/or extension of State Water Bottom Lease No. M-430-05, which is currently scheduled to expire on February 8, 2027.

Tomales Bay Oyster Company has continued to operate in compliance with the terms and conditions of the lease and applicable regulatory requirements. We remain committed to responsible aquaculture practices, environmental stewardship, and coordination with State agencies in managing operations within the lease area.

We respectfully request the opportunity to renew or extend the lease and are prepared to work with the Department and Commission on any updated terms, conditions, or requirements associated with a renewed lease.

Please let us know if additional information or documentation is needed to support this request. We appreciate your consideration and look forward to continuing our partnership with the State.

Sincerely,

Heidi Gregory
General Manager, Owner
Tomales Bay Oyster Company, LLC
Hgregory@tomalesbayoystercompany.com
(415) 663-1242

Outlook

Protect California Wildlife: Wolves and Black Bears – Public Comment

From Shari Dalal
Date Sun 04/12/2026 10:41 AM
To FGC <FGC@fgc.ca.gov>

Dear Commissioners,

I am writing to urge you to strengthen protections for all of California's wildlife, particularly our vulnerable wolf, mountain lion, and bear populations.

As someone who closely follows and documents wildlife in California, I have witnessed a troubling decline in species due to habitat loss, human expansion, and increasing reliance on lethal management. It is deeply concerning that endangered gray wolf are still being killed while they are trying to recover. The loss of individuals like Blondie is heartbreaking and represents a serious setback for a fragile population that cannot afford these losses.

Wolves are essential to healthy ecosystems. They play a critical role in maintaining balance, supporting biodiversity, and strengthening the resilience of natural systems. Killing them undermines years of conservation progress and ignores the science showing that coexistence strategies are more effective and sustainable.

I am equally concerned about American black bear populations. Increasing human development into wildlife habitat is driving conflict, yet the response continues to fall on the animals. This approach fails to address the root cause and contributes to long-term species decline.

As a wildlife advocate and observer, these losses are not abstract to me—they are personal. I have seen fewer animals over time, and each loss is felt. California should be leading with science-based, humane solutions that prioritize coexistence, habitat protection, and public education.

I respectfully ask that you reject policies that allow the killing of endangered wolves and instead commit to stronger protections and non-lethal management strategies for both wolves and bears. We have a responsibility to ensure these species survive and thrive for future generations.

Thank you for your time and consideration.

Sincerely,
Shari Dalal

Outlook

OPPOSE: Expansion of Black Bear Hunting Tags

From Madeline Patt
Date Thu 04/16/2026 05:31 PM
To FGC <FGC@fgc.ca.gov>

To the California Fish and Game Commissioners,
I am writing to express my strong opposition to the recent decision to move forward with a proposal that would allow two black bear tags per hunter in California.
The Department of Fish and Wildlife reportedly received over 1,700 emails opposing this expansion, compared to only four in favor. Proceeding with this policy despite such overwhelming public opposition undermines the Commission's responsibility to represent the values of all Californians and the public trust doctrine of wildlife management.
I urge the Commission to reconsider this direction for the following reasons:

- **Cumulative Stressors:** California's black bears are already facing unprecedented pressures from habitat fragmentation, devastating wildfires, prolonged droughts, and increasing human-wildlife conflict. Adding a secondary hunting tag places an unnecessary burden on a population already struggling with environmental instability.
- **Ecological Contributions:** Bears are not merely a "harvestable resource." They are essential ecological contributors that disperse seeds, cycle nutrients through the forest floor, and help maintain the health of our forest ecosystems.
- **Prioritize Coexistence over Killing:** True modern wildlife management should focus on non-lethal conflict prevention, habitat protection, and science-first policies. Expanding hunting quotas is a regressive approach that fails to address the root causes of human-bear encounters.
- **Democratic Representation:** The vast majority of Californians value bears as living beings and vital parts of our natural heritage. Management policies should reflect the ethical and conservation-minded stance of the public, not just the interests of a small minority.

Wildlife belongs to all Californians. I ask that you prioritize coexistence and robust habitat protections over the expansion of hunting opportunities. Please reject the proposal for a second black bear tag.
Sincerely,
Madeline Patt
Concerned citizen of Ohio and the United States of America

Outlook

Non-lethal coexistence is life-affirming stewardship

From Darienne Hetherman
Date Fri 04/17/2026 09:39 AM
To FGC <FGC@fgc.ca.gov>

Dear Friends,

I wish to voice my opposition to the expansion of black bear hunting tags per hunter. This represents a backwards move for our society. It is my feeling that recreational hunting should be phased out, because it does nothing to nurture the spirit of stewardship of nature in people. It normalizes brutality and disregard for life. Numerous studies have shown that people who harm animals are also more likely to harm other humans. These people would benefit much more from psychological and emotional therapy, not more bear tags.

Humans have come a long way in our evolution to becoming compassionate stewards of nature. Unlike wild predators, we are not obligated to a subsistence lifestyle. Killing animals for sport is detrimental to human progress and represents a stagnation of mental, spiritual, and emotional health. It is cognitively dissonant to say that one loves animals and loves nature, but yet is okay with extinguishing the lives of innocent animals for sport.

It is common for a sport hunter to strike a smiling pose for a photo in front of the lifeless carcass of an innocent wild creature he just murdered. The human being who does this is a deeply wounded person. These wounds can be personal, but also ancestral—they go back hundreds if not thousands of years. They are cultural wounds. Healing these deep wounds of disconnection from other forms of Earth life will be our single greatest achievement as a society. It is the missing piece in our epic story as the dominant Earth species, as we tend this exquisitely beautiful planet that we call home.

Let's support peaceful, nonlethal coexistence and the continued positive evolution of humanity. Our children need to see that strong advocates for nature stand on the side of compassion for all beings. We don't "take" lives: we fiercely protect them.

With love and gratitude,

Darienne Hetherman

Outlook

Advocate for Non-Lethal Wildlife Solutions

From Mikayla Williams
Date Sat 04/18/2026 09:24 PM
To FGC <FGC@fgc.ca.gov>; Hertel, Meghan[redacted]

Dear Director Hertel and California Fish & Game Commission,

The recent tragedy involving a mother bear in Monrovia highlights a critical need to rethink our wildlife management practices. California has the opportunity to lead with innovative strategies that prioritize coexistence, yet this potential remains unrealized without decisive action.

Lethal methods offer only a temporary fix, as displaced wildlife quickly return, continuing the cycle. Proven non-lethal strategies, such as bear-resistant containers, education initiatives, and wildlife corridors, are underfunded and underutilized.

I urge the CDFW to pause lethal removal permits until all non-lethal alternatives have been fully explored; to secure funding for community-based coexistence efforts; to promote legislation for wildlife education in schools; and to ensure transparency in the reporting of lethal removals, including details of species, locations, and reasons.

Sincerely.

Mikayla Williams

Outlook

Public Comment for April 15, 2026

From Tara Dehdari <tara@womenforwolves.org>
Date Wed 04/15/2026 11:08 AM
To FGC <FGC@fgc.ca.gov>

Commissioners,

My name is Tara Dehdari, and I am the Director of Technology at Women for Wolves.

I am submitting this public comment to urge meaningful reform in how California responds to human-wildlife conflict.

The recent killing of Blondie, the Monrovia mother bear, and the continued pattern of lethal outcomes for wolves make it painfully clear that California's current system is failing the very wildlife it is supposed to protect.

Blondie's death did not just impact one animal. It orphaned her cubs and devastated a community that had been asking for another option. Californians are watching these decisions happen over and over again, and many of us are asking the same question: why does lethal removal continue to be treated as the default response when prevention, education, and non-lethal intervention should come first?

I understand that public safety matters. It absolutely does. But true public safety and true wildlife stewardship should not be built on reactive killing alone.

California needs a better system. One that invests in:

- non-lethal conflict prevention
- public education in high-conflict areas
- stronger coexistence protocols
- early intervention before situations escalate
- transparent decision-making when lethal action is considered
- real accountability when wildlife is killed

If California truly believes in coexistence, then it must build policies that reflect that value in practice, not just in language.

We cannot keep calling it coexistence while bears, wolves, and other wildlife continue to pay the price for a system that reacts too late and chooses killing too quickly.
I urge the Commission to push for reform within CDFW and prioritize a wildlife management approach rooted in prevention, transparency, accountability, and non-lethal coexistence.

California can do better. It must.

Thank you for your time and consideration.

Tara Dehdari
Director of Technology
Women for Wolves

Outlook

PUBLIC COMMENT: Opposing Lethal Protocols for Sows with Cubs (May 13-1 4, 2026 Meeting)

From atash2000[redacted]
Date Fri 04/24/2026 02:11 PM
To FGC <FGC@fgc.ca.gov>

Honorable Commissioners,

I am a resident of Rancho Palos Verdes, and I am writing to formally submit my opposition to the Department of Fish and Wildlife's (CDFW) current lethal protocols regarding habituated bears, specifically in the case of the mother bear ("Blondie") euthanized in Monrovia on March 18, 2026. I have also reached out to Director Hertel.

This act of human wickedness has shattered my heart and the hearts of many in our community. Nothing replaces a mother for any living thing. By choosing euthanasia over relocation, the Department has not only taken a life that had many years remaining but has sentenced two innocent cubs to a life of emotional trauma and abandonment.

Blondie swiped at a woman walking her dog because the dog showed aggression towards her. The woman was not killed and had no major injuries! So why would you kill this mother bear protecting her cubs?! "I am asking for justice."

I urge the Commission to use its oversight authority to:

1) Mandate Non-Lethal Relocation: Prohibit the euthanasia of any sow with cubs unless there is a confirmed physical attack on a human that faced critical conditions or near death.

2) Reform "Public Safety" Definitions: Move away from labeling bears as "public safety threats" simply for accessing human attractants when those attractants were not properly secured by the community.

3) Prioritize Education over Execution: Hold human communities accountable with mandatory bear-proofing before a bear is ever considered for a "strike."

The universe does not offer forgiveness for the unnecessary destruction of a mother-child bond. I ask that you represent the values of a humane California and change these policies so that this tragedy is never repeated.

Respectfully,
Atash Soltani
[redacted]

Outlook

Innovative Strategies for Wildlife Management in California

From Sébastien Aubin
Date Sat 05/09/2026 07:56 AM
To FGC <FGC@fgc.ca.gov>

Dear California Department of Fish and Wildlife,

I feel a strong urgency to discuss the critical need for innovative approaches in managing wildlife across California. The current methods raise significant concerns, and there's a clear necessity for ethical and sustainable reform. Wildlife management should be rooted in scientific credibility, ethical care, and ecological balance. Regrettably, decisions often prioritize quick, lethal solutions instead of embracing thoughtful, evidence-based strategies.

I urge your department to consider changes such as prioritizing science-based, humane management practices and adopting non-lethal methods as primary responses. Additionally, transitioning to proactive, preventative strategies can help minimize conflicts and ensure inclusive decision-making that reflects diverse public interests, extending beyond narrow special interests.

California is poised to lead in compassionate and sustainable wildlife management. I trust your department will rise to this challenge and commit to meaningful, impactful change.

Thank you for considering this crucial issue.

Sincerely.

Sébastien Aubin

Outlook

Support Final CESA Listing for California's Native Bumble Bees

From Ryan Dishell
Date Wed 05/27/2026 07:04 PM
To FGC <FGC@fgc.ca.gov>

Dear California Fish and Game Commission,

My name is Ryan Dishell, and I am an environmental science student at Antioch University. I am writing to express my support of final listing under the California Endangered Species Act for Crotch's bumble bee (*Bombus crotchii*), Franklin's bumble bee (*Bombus franklini*), Suckley's cuckoo bumble bee (*Bombus suckleyi*), and the western bumble bee (*Bombus occidentalis*).

I understand that these species currently have candidate protections under CESA, but candidate status is temporary while the state considers final listing. Given the serious threats facing native bumble bees, including habitat loss, pesticide use, climate change, disease, and development, I urge the Commission to permanently list these species as endangered or threatened.

Native bumble bees play an essential role in pollinating wild plants and supporting healthy ecosystems, yet they often receive far less public attention than larger or more recognizable endangered species. Their decline is not only a loss for biodiversity, but also a warning sign about the health of the habitats that many other species depend on.

I respectfully ask the Commission to support final CESA listing for these four native bumble bees and to continue advancing habitat protection, pesticide reduction, native plant restoration, and public education around native pollinators.

Thank you for your time and consideration.

Sincerely,
Ryan Dishell

Outlook

Fwd: Jack Collins email letter to Hills Conservancy concerning eucalyptus

From annie griffin

Date Wed 04/29/2026 12:58 PM

To kbarber@monterey.gov <kbarber@monterey.gov>; Anderson, Yuri <AndersonY@countyofmonterey.gov>; cob@co.monterey.ca.us <cob@co.monterey.ca.us>; cclcommunity@citizensclimate.org <cclcommunity@citizensclimate.org>; clerk@mprpd.org <clerk@mprpd.org>; district1@co.monterey.ca.us <district1@co.monterey.ca.us>; dhall@monterey.gov <dhall@monterey.gov>; Montgomery, Jordan <Jordan.Montgomery@sen.ca.gov>; Vierra, Marilyn <VierraM@co.monterey.ca.us>; FGC <FGC@fgc.ca.gov>; Mariana.Filip@coastal.ca.gov <Mariana.Filip@coastal.ca.gov>; Fort Ord [redacted]; Tyller Williamson <twilliamson@monterey.org>; Pena, Gabriel <Gabriel.Pena@asm.ca.gov>; ggarcia@monterey.org <ggarcia@monterey.org>; cityclerks@monterey.org <cityclerks@monterey.org>; rasch@monterey.gov <rasch@monterey.gov>; annie griffin [redacted]

Please distribute to all Committteee members. Thankyou

Dear Senator Laird and members of the State Budget Committee,

I am contacting you because of a tragic situation occurring down here in Monterey that greatly affects our ability to keep our Monterey Sanctuary cool and that is the removal of 20000s Eucalyptus trees under false assumptions that the Eucalyptus trees are a fire hazard to home owners and therefore need to be cut down. Your Committee under Chair Senator Laird continues this false narrative wasting tax payers money and refusing to inform homeowners of the real threats to their property as fire scientist Jack Cohen reiterates in his informational video below.

http://www.firewise.org/wildfire-preparedness/wui-home-ignition-research/the-jack-cohen-files.aspx?sso=0

The link below is to the Eucalyptus removal pilot program compiled by Cal-Fire, some post grad students and some unnamed environmental scientists all condemning the Eucalyptus as an invasive species and a fire hazard, never once mentioning the collective scientific research gathered over the years by fire scientist Jack Cohen from the Fire Science lab in Missoula Montana, the only fire science lab in the United States.

His first hand research has led him to conclude that home fires are not caused by trees or Eucalyptus but by disregarding the real problem which is a house/ignition/ zoning problem which seems to be missing from that report.

These findings continue to be ignored by Senator Laird and is endangering our area with increased house fire potential because homeowner are not being provided with the real cause of fires. it's not trees or species of trees according to Mr. Cohen. It is houses,wooden fences, dry leaves,improper coverings of attic vents.

https://monterey.legistar.com/LegislationDetail.aspx?ID=6705118&GUID=91B3D335-4E85-40FF-808E-BF18C0298305&Options=&Search=

Below are some pictures taken by Jack Cohen proving that the Eucalyptus trees surrounding this ashen community did not burn and actually protected the forests beyond which is what these trees were originally planted for besides timber.

Jack Cohen, although retired now, is the top go to guy when it comes to fire science safety and his message is absent or from the Eucalyptus Removal Pilot Program.

He took the pictures below to show that Eucalyptus trees are not the problem as everyone is being led to believe. It is a house/ignition zoning problem not being dealt with by anyone including your state representatives and this needs to change.

As the saying goes a picture is worth 10000 words.

As those pictures reveal the Eucalyptus trees did not burn in that Urban fire and actually acted as a fire break to the forests beyond.

None of Jack Cohen's research was put in the Eucalyptus tree removal Pilot program for scientific review.

And yet over one million dollars of our hard-earned tax money has been approved by your committee to remove these most wonderful and important trees.

Please read the report below and Jack Cohen's assessment of Eucalyptus tree removal with regard to fire prevention safety.

We must re-educate the public of the true dangers of Wild land /Urban Interface fires so they can protect their homes not by cutting down trees but by removing leaf litter and dry brush around their homes as Jacks video describes below.

http://www.firewise.org/wildfire-preparedness/wui-home-ignition-research/the-jack-cohen-files.aspx?sso=0


t

Fire scientist says, "…eucalyptus did not burn with high intensities leading to home destruction"

April 24, 2016

Jack Cohen is a fire scientist at the US Forest Service fire lab in Missoula Montana. *For decades he has researched* ***fire behavior in the Wildland Urban Interface areas (WUI)****. His research includes scores of post-fire investigations, as well as controlled experiments in the only forest fire lab in this country. WUI fire poses a unique set of challenges to local fire departments. Mr Cohen's research has informed nationwide strategies on how to prevent and manage fire in the WUI setting.*

He concludes that it is neither desirable nor realistic to attempt complete suppression of catastrophic fires, or to expect fire departments to fully defend WUI areas. *We live, after all, in a fire dependent natural environment, and have over the years constructed many combustible structures within heavily vegetated and dry areas.* ***He does believe it is possible to construct and maintain buildings to resist ignition****, (by addressing the Home Ignition Zones) and that* ***this effort will do much more towards preserving human life and property than remote fuel treatment, or poorly focused fire suppression efforts.***

As part of my work as a building inspector and engineer, I spent 18 years studying, developing and enforcing building codes in the East Bay, including the WUI areas of Berkeley. In years following the 1991 Oakland hills fire, both local and national bodies incorporated the findings of Mr. Cohen's ground-breaking research into building regulations for new construction. ***"...destruction in the WUI is primarily the result of the flammability of the residential areas themselves, rather than the flammability of the adjacent wildlands...Research has shown that a home's characteristic and its immediate surroundings principally determine the WUI ignition potential during extreme wildfire behavior."*** *(1)*

It's my opinion that the removal of eucalyptus trees from the hills will not advance, and may even worsen, fire hazard mitigation. The trees are not the problem. As for firebrands emitted during a fire, they are generated in all vegetation types. The best strategy to save homes is to harden structures to prevent ignition and maintain surrounding defensible space. Still, I wondered about the often-repeated claim by local officials that these eucalyptus trees are to blame for the 1991 fire, and that they present a major threat to fire safety. So, I asked Jack. Here's his private email response. He included some photos, worth taking a look at. His website follows, including links to his extensive research: *http://www.firewise.org/wildfire-preparedness/wui-home-ignition-research/the-jack-cohen-files.aspx?sso=0*

1. *Elizabeth Reinhardt, Robert Keane, David Calkin, Jack Cohen, "Objectives and considerations for wildland fuel treatment in forested ecosystems of the interior western United States," Forest Ecology and Management, 256 (2008) 1997-2006.*

(Here attach emails, but remove our addresses)

> **From:** "Cohen, Jack -FS"
> **Date:** March 25, 2016 3:38:38 PM PDT
> **To:** Margaret Hall
> **Subject: RE: 1991 Oakland Hills fire**
>
> Marg—
>
> Thank you for your generous words of support for the research I've done!
>
> I did a quick analysis of Oakland Hills as part of an internal effort to better understand the contribution of firebrand ignitions. I used video footage as my window to the event and did not do a site examination. This effort did not generate a written report. However, it became abundantly clear the Oakland residential fire disaster was similar to more recent disasters where eucalyptus is significantly present. I have attached 5 photos (poor quality) showing that the "gasoline" tree remains unconsumed adjacent to/surrounding destroyed houses as with all the other disasters I've examined (refer to my reports). The first 2 photos are from the 2009 Melbourne, Victoria fires that destroyed many structures with 173 civilian fatalities in Kinglake and Marysville in the hills north of Melbourne (I did a site visit but these are not my photos). **The unconsumed tree vegetation is eucalyptus.** The next 3 photos (not mine) are from the 2003 San Diego County fires. All of the destroyed homes and the burning wood roof home have adjacent eucalyptus – not burning in the tree canopy with high intensities. This is consistent with all the disaster examinations I've done (internal reports and published) regardless of the tree species. The common characteristics initiating the disastrous losses in high density residential development are extreme wildfire conditions in surrounding wildlands producing firebrand showers that ignite homes

directly and surface fuels within the community to produce significant firebrands from burning homes/structures and adjacent trees that were ignited by the burning homes. **This indicates that the eucalyptus trees did not burn with high intensities (or any intensity) leading to home destruction. This strongly suggests that eliminating eucalyptus and replacing it with some other vegetation would not prevent future WU fire disasters because the problem was inappropriately defined as a eucalyptus vegetation problem and not a home ignition-home ignition zone problem.**

This is my perspective in answer to your question. Hope that helps. If you have further questions, please feel free to ask.

Cheers—

Jack

Our area is heating up.

Our Monterey Bay Sanctuary is heating up subjecting us to more severe storms. We sustained 100-mile winds in the bay this last winter 2 days before Christmas which is unheard of in this area. Why? Because when the Seas heat up more ferocious storms are Brewing. Our local Monterey Bay Sanctuary is heating up as we cut down our trees in this area.

Your governing bodies are responsible for giving the public the best information possible on how to protect their homes from fires and yet the Eucalyptus report condemns Eucalyptus trees falsely,making people so afraid that they want to cut down these magnificent trees and all others in the name of fire danger .

Timber science is real and invasive in our colleges and scientific communities so they can gut our forest as wildfire threats which is what they are doing. to the point of harm to our community.

Senator Laird and Supervisor Church have been given false scientce by Cal Fire and others to promote this Eucalyptus Removal program. They trust these entities to provide them with the best scientific data and they have been dupped as has your own well meaning committtee members have.

I provide here a link to a law suit by the California Chaparral organization which sued CAL Fire for creating fire dangers throughout the State and won to prove my point.

https://www.californiachaparral.org/threats/cal-fire/

Your committee, based on Mr. Churches and Senator Lairds report gave money to have these tree cut.

In Elk Horn Slough hundreds of Eucalyptus trees are being made into Bio chard which is heating up that valuable ecosystem.

Supervisor Church instigated this pilot program to cut down the eucalyptus trees as non-natives and a fire hazard without consulting the top fire scientists in the United States first or at least including their information in the report thus endangering anyone who has a home in this area.

Tragically over 2,000 eucalyptus trees in this area have been cut down and chipped and many pounds of herbicides have been utilized to kill their trunks.

The environmental consequences of that have been ignored so let me explain it here.

2000 large eucalyptus trees as with any large tree represents one ton of global greenhouse gases absorbed including 10 lbs of pollution and 260 lb of oxygen a year per tree . That represents over 2,000 tons of CO2 and harmful greenhouse gases that could have been absorbed every year by those trees that are no longer being able to do their job.

Those trees are no longer available to create 521000 pounds of oxygen a year, and 300 million gallons of water vapor a year which contributes to the cooling of the air, inland rainfall and moisture on the ground to keep forests cool and moist.

Mr Church and the Board of Supervisors are endangering us all with further gigantic storms and wildfires in our area as they continue to misinform the public on the true cause of fires .The link I provided to you of Jack Cohen's fire prevention video does not mention trees as the cause of fires. Surprisingly it is pine needles and dry leaves which he demonstrates in the video.

Your committee is going be to be lobbied once again for more funding by Mr. Church and Senator Laird to remove Eucalyptus tree throughout the State.

I am asking you to share this letter with your fellow State committee representatives so they can see the benefits of these trees.

Local hysteria about these trees is unfounded and needs to stop.

People are becoming increasingly alarmed by these trees through false narrative and justifiably so because they trust Supervisor Church who has also been misguided by timber industry science, Cal Fire science which targets trees instead of the real culprit dry leaves, wooden house, electrical wiring,zoning.and the Native Plant Society.

A hatred akin to a witch hunt is brewing.

Meanwhile, the value of them is being undermined and they are one of the big tools in our toolbox to fight global warming throughout California.

As our planet and our area heats up Eucalyptus trees withstand heat and can provided the much-needed shade to the more vulnerable Monterey Pines which by the way actually grow very well beside Eucalyptus trees contrary to Mr. Churches report..

True science is needed so homeowners can truly protect their homes from these fires.

Please cancel that program immediately

Eucalyptus trees create rainfall as all trees do along our Coast. They are preferred safe harbor for the Monarch butterfly and all manner of insect and birds .

We are inundated by bad science, and this Eucalyptus removal pilot program is a good example of a waste of taxpayers' money, endangering the health and safety of us all .

Please stop the further destruction of these trees.

I provide the link below as proof that Cal Fire cannot be trusted to give your committee real science on how to manage fires in our state. This is a lawsuit against Cal fire that was won by California Chapperal organization.of Cal Fire

. https://www.californiachaparral.org/threats/cal-fire/

Thank you,

Best,

Lorna Moffat,

Sub Sea Sonics/Guardian Popup Fishing System – Final EFP Results

Submitted To: California Department of Fish and Wildlife

Submission Date: 4/6/26

Submitted By: Bart Chadwick, Sub Sea Sonics

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Contents

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A. Project Summary

The purpose of this Experimental Fishing Permit (EFP) was to allow for the additional testing necessary to support authorization of Sub Sea Sonics pop-up gear in conjunction with Longsoaker Fishing Systems' Guardian line management system in the California Dungeness Crab fishery under the Risk Assessment and Mitigation Program (RAMP). Authorization of the gear would allow continued fishing during periods when the fishery is closed to traditional gear to prevent wildlife entanglements. Recent regulations to prevent whale and sea turtle entanglements have resulted in time-area closures that have significantly shortened the commercial Dungeness crab fishing season. While this has reduced entanglements, it has delayed the season opener and impacted fishery participants that rely on a longer fishing season. The results of the testing will ultimately serve to enable decision making regarding authorization of alternative gear under the RAMP. Consistent with FGC Code 7050, this project aims to ensure the conservation of endangered marine species and the sustainability of the historic California Dungeness crab fishery through effective collaborations and a science-based process. Efforts included within this EFP promote scientific research to better inform fishery management decisions that recognize the importance of commercial fisheries while conserving the health and diversity of marine ecosystems.

This report summarizes the final results of an Experimental Fishing Permit (EFPT2-001) to test Alternative Gear in the California Dungeness crab fishery. The EFP tested a fully integrated on-demand fishing system from Sub Sea Sonics and Guardian Ropeless consisting of the following components:

- Sub Sea Sonics AR4RT/AR4RT+ Acoustic Release Units
- Sub Sea Sonics ARI-U Universal Acoustic Deck Unit with Transducer
- Guardian Ropeless Line Handling System variants with required lines and floats
- Second End and Grapple Backup Systems
- Traps run in strings (trawls) with a minimum of 2 traps per string
- Sub Sea Sonics Trap Timer Virtual Gear Marking App
- Sub Sea Sonics Ropeless Regulatory Portal
- Vessel Electronic Monitoring System
- Training and Certification Program
- rmwHUB interoperability system

Extensive testing of the system was conducted during the spring of 2023-2025 under EFPT2-001 in the California Dungeness crab fishery. Previous testing was also carried out using single traps and the timed version of the release system (TR4RT) during 2021 in the California Dungeness crab fishery. Large-scale testing of the system has also been carried out in the Northeast US in conjunction with the NOAA Northeast Fisheries Science Center. In addition, significant testing of the system was conducted using single traps and the acoustic version of the release system in the California Spiny Lobster fishery and the Southeast US Black Sea Bass fishery during the winter of 2022-2023.

Results from AR4RT/Guardian system testing under EFPT2-001 provide the most extensive and realistic measure of the system performance for the gear that is targeted for authorization. Over the three years of testing under EFPT2-001, a total of 3740 gear cycles were completed with a reliability rate for the gear of 98%. Additional testing in other fisheries that has been conducted to date represent an additional 3398 trials with a combined success rate of 96%. The results from these other testing programs are comparable to what we found during the EFP testing for the California Dungeness crab

fishery and support the conclusion that the gear is highly reliable. Including this testing and the California EFP testing, over 7100 trials have now been performed with the gear. Detailed results of the EFP testing are provided below and in the EFP annual reports.

In July of 2025 we submitted a draft Alternative Gear Authorization proposal. Throughout the summer we worked with CDFW to help establish the process for authorization and continued to refine our proposal. In September of 2025 we formally submitted our authorization proposal. Following a number of collaborative consultations with the Department, the Sub Sea Sonics/Guardian alternative gear was conditionally authorized in December of 2025 for use in the California Dungeness crab fishery. This authorization represented the culmination of our EFP goals and also the first ever alternative gear authorization in the State of California.

B. Results and findings of the EFP project

Purpose of the EFP

The purpose of this Experimental Fishing Permit (EFP) was to allow for the additional testing necessary to support authorization of Sub Sea Sonics pop-up gear in conjunction with Longsoaker Fishing Systems' Guardian line management system in the California Dungeness Crab fishery under the Risk Assessment and Mitigation Program (RAMP). Authorization of the gear would allow continued fishing during periods when the fishery is closed to traditional gear to prevent wildlife entanglements. Recent regulations to prevent whale and sea turtle entanglements have resulted in time-area closures that have significantly shortened the commercial Dungeness crab fishing season. While this has reduced entanglements, it has delayed the season opener and impacted fishery participants that rely on a longer fishing season. The results of the testing will ultimately serve to enable decision making regarding authorization of alternative gear under the RAMP. Consistent with FGC Code 7050, this project aims to ensure the conservation of endangered marine species and the sustainability of the historic California Dungeness crab fishery through effective collaborations and a science-based process. Efforts included within this EFP promote scientific research to better inform fishery management decisions that recognize the importance of commercial fisheries while conserving the health and diversity of marine ecosystems.

Gear Description

This report summarizes the final results of an Experimental Fishing Permit (EFPT2-001) to test Alternative Gear in the California Dungeness crab fishery. The EFP tested a fully integrated on-demand fishing system from Sub Sea Sonics and Guardian Ropeless consisting of the following components:

- Sub Sea Sonics AR4RT/AR4RT+ Acoustic Release Units
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- Second End and Grapple Backup Systems
- Traps run in strings (trawls) with a minimum of 2 traps per string
- Sub Sea Sonics Trap Timer Virtual Gear Marking App
- Sub Sea Sonics Ropeless Regulatory Portal
- Vessel Electronic Monitoring System
- Training and Certification Program
- rmwHUB interoperability system

The system was developed specifically for application to low-cost, on-demand trap fishing. The design of the system focused on addressing key inputs from the Dungeness crab fishing communities on the US west coast to provide a system that:

- Minimizes exposure of whales and sea turtles to entanglement hazards in the water column;
- Capitalized and operated at cost comparable to traditional gear;
- Simple and easily integrated into the existing fishing process;
- Easily stowed within the footprint of the existing trap and allows stacking of traps;
- Reliable and redundant to the degree that the amount of equipment loss is either the same or less than traditional gear;
- Comparable gear marking visibility on the surface to the traditional buoy system, and;

- Integrates a means to determine the location and identify the gear by fishers and enforcement agencies in the absence of surface buoys.

The overall concept of operation is shown in Figure 1. In preparation for setting the gear, the Trap Timer app is used to determine if the target area is clear of other gear (1). The buoy line and buoys are stored in the Guardian system and the release unit is armed by rotating the cam to the line holding position. At the time of deployment, the Trap Timer app is used to mark the location of the first trap in the string (2). When the last trap in the string is set, the app is used to mark that as well (3). The pop-up system can be associated with the first, last or both first and last ends of the string. When cell or wi-fi connectivity is available, the app will transmit the locations to the Sub Sea Sonics backend database that houses all of the regional trap locations and other meta-data (3). That database in turn synchronizes the data with other manufacturers databases via the rmwHUB and Earth Ranger interoperability systems. For hauling gear, the app is used to select the target trap which is triggered to release via a Bluetooth signal to the deck unit which sends the acoustic signal to the release, and the buoy line and buoy are released to the surface (4). The string is then recovered using normal handling gear (5). The release unit is then re-set, and the trap is re-deployed following the sequence described above (6). Details of the specific sub-systems are provided below.

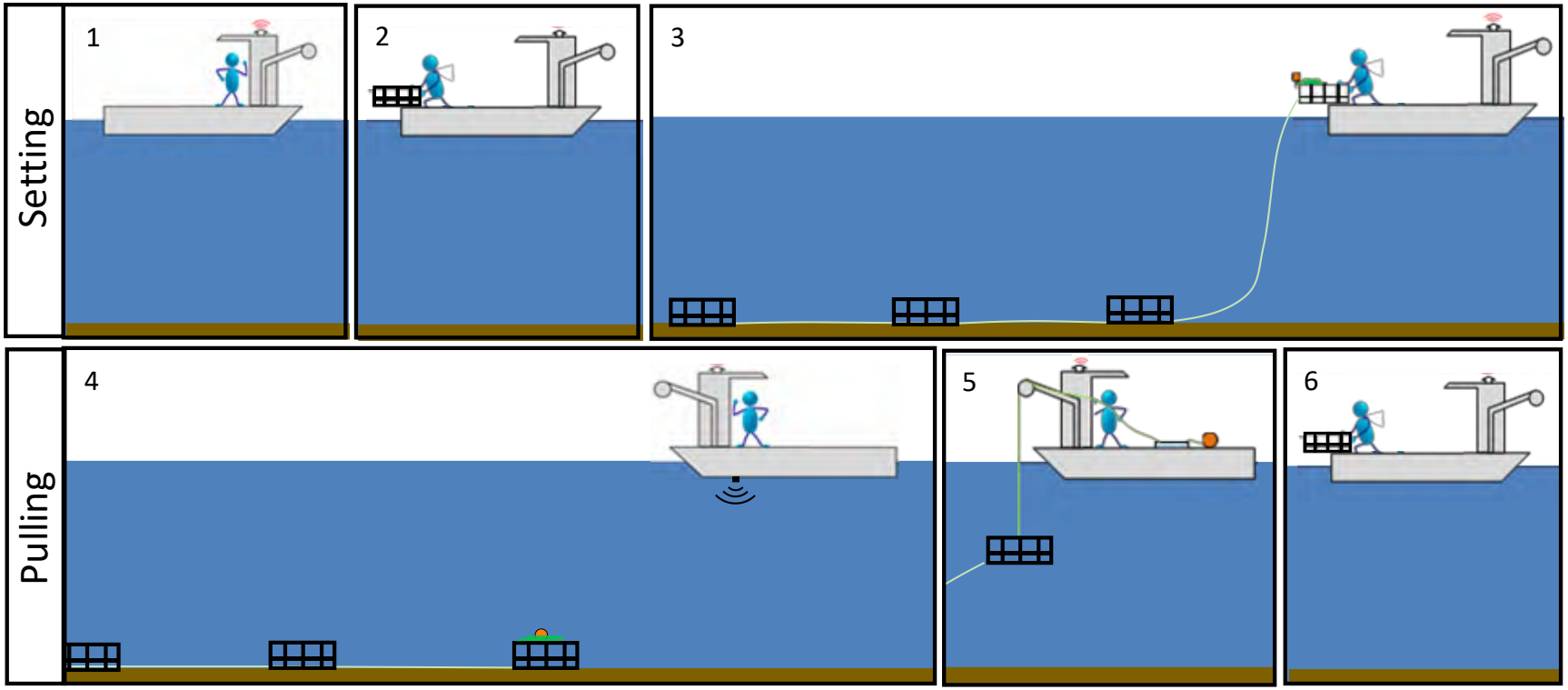

Figure 1. Concept of operations for the AR4RT/Guardian on-demand fishing system.

Sub Sea Sonics Acoustic Releases

AR4RT Release

The AR4RT is an underwater, on-demand, acoustic release for recovery of underwater equipment (Figure 2). The system was developed primarily for use with fishing traps but can be used in any suitable application. The system consists of an underwater housing, a rotating release cam, and a release line retainer. The system uses a simple, low-cost acoustic receiver to provide an on-demand release capability. Using the cam, the user arms the system and deploys the equipment. At the end of the deployment, the user sends the release command and the cam rotates 180 degrees and to activate the release. For most systems, this releases a coil of line and float that are secured to the trap, and the float comes to the surface and the equipment can then be retrieved. Each unit is generally programmed with a unique release code so that triggering of one unit does not trigger other nearby units. The release code is cross referenced to a serial number that is used to identify the unit so that the release code is not made public. Triggering of the system is performed using the Trap Timer app in conjunction with the ARI4RT deck box and transducer. In case of gear displacement or loss, the release has a low energy ping function with a range of about 500 feet that can be used to search for the gear.

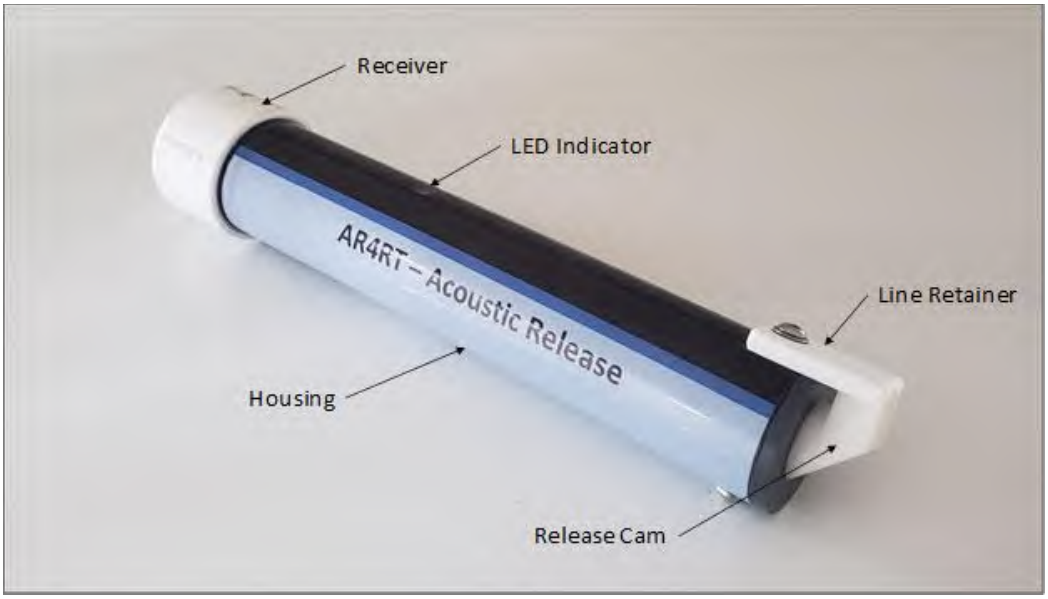

Figure 2. The AR4RT on-demand release unit.

AR4RT+ Release

The AR4RT+ is comparable to the AR4RT but incorporates a number of optional improvements that were identified during the testing phase from fisher feedback (Figure 3). These include (1) a stronger ping that allows for short range (~1000 ft) ping verification and ranging, (2) a higher torque motor that still allows for easy hand arming of the unit, (3) receiver elements moved towards the top of the unit for better reception, (4) a double o-ring seal to reduce the chance of leakage, and (5) fully potted electronics that improve the overall robustness of the unit. These improvements, while not required, add some additional capabilities and robustness to the system and also result in a slightly increased cost per unit. Both the AR4RT and the AR4RT+ have been demonstrated to work at high reliability in the Dungeness crab fishery.

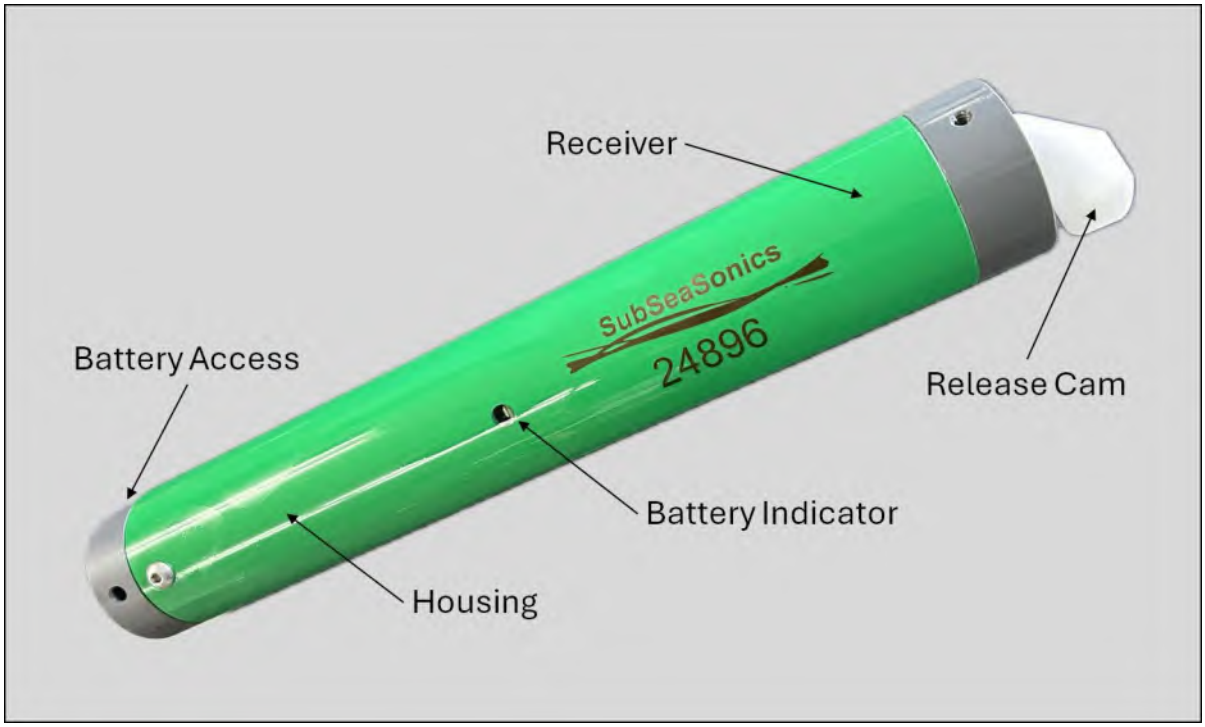

Figure 3. The AR4RT+ on-demand release unit.

Sub Sea Sonics Acoustic Deck Unit with Transducer

ARI-U Universal Deck Box

The ARI-U with associated transducer is the acoustic deck unit that is used to trigger the underwater release unit (Figure 4). The system consists of a ruggedized box with a small LCD screen, power switch, control switches, transmit indicator light, charging port, and transducer connector. The transducer comes with a cable that is sufficiently long to allow it to be hung over the side of the boat typically to a depth of about 10 ft while performing the release transmission. Alternatively, the transducer can be mounted on a pole, in an “in-hull” configuration for solid fiberglass hulls, or a “thru-hull” configuration for any hull type. The deck unit sends a signal to the underwater unit that includes its unique identifier, along with the release command. The deck unit itself is generally controlled by the Trap Timer app via a Bluetooth connection, and the only action performed on the deck unit is to power it up. After that the unit selection and release command transmission is all handled by the app. In the case of a failure of the app, the deck box can be used in manual mode by selection the unit ID, selection the release action, and then transmitting the release action. The deck box also has an optional receiver board that can be used to receive pings from the underwater unit or for ranging to the underwater unit. For underwater units that support the ping function, the Trap Timer app can be configured to automatically receive pings from the underwater unit to verify that it received the command from the deck unit.

Figure 4. The ARI-U universal deck unit.

Guardian Ropeless Line Handling Systems

The Guardian line handling system focuses on providing a range of simple, reliable storage and retrieval systems while utilizing existing gear and handling systems. The line used is generally the same diameter and type that is currently in used in the California Dungeness crab fishery. Traditional foam buoys are replaced with a hard main float and an optional Polyform trailer float. Common configurations that have been widely tested in a range of fisheries include the Trap-Top Retrofit, the Inshore Sled, the Mid-Water Sled, and the Offshore Sled. The Inshore Sled is the primary system that is in use in the California Dungeness Crab fishery. There are two designs of the Guardian Inshore sled. The functionality and operation of both are the same. The first version is built with heavy-gauge lobster mesh and has a square outer frame. The second version has a round frame and is designed and constructed like common crab pots. The Trap-Top Retrofit has also undergone extensive testing in the fishery. Additional details of these configurations are summarized below.

<u>Guardian Inshore Sled</u>

The Guardian Inshore Sled is used in crab and lobster fisheries up to 600 ft of water depth (Figure 5). This cost-effective system is easy to integrate as the first and/or last trap on an existing trawl-configured trap operation and is highly reliable. The system provides all required underwater system capabilities including elimination of the vertical buoy line during fishing, acoustic on-demand triggering, can be set and redeployed at sea, is size compatible with fishing operations, is functional in a broad range of temperature conditions, constructed for the physical use on fishing vessels and underwater conditions, weighs 50 to 75 lbs. fully rigged, and has been previously tested. The Inshore Sled has undergone significant levels of testing in the California Dungeness crab fishery as well as elsewhere in the US including the Northeast American Lobster fishery. The system has the following characteristics:

- Triggering: Configured with Sub Sea Sonics AR4RT, AR4RT+ and DAR4RT acoustic release systems

- Buoy Line Capacity: Up to approximately 900 ft of 3/8 in diameter line
- Buoys: Compatible with hard trawl floats, poly buoys and foam buoys including main and trailers
- Environmental: Compatible with seawater conditions, pressures and temperatures
- Dimensions: Approximately 22-1/2” long x 22-1/2” w x 13-1/2” high
- Weight: 50-75 lbs. fully rigged
- Operating depth: Limited by buoy line length to approximately 600 ft
- Integration: Acts as first or last trap in a longline string of traps

Figure 5. The Guardian Inshore Sled.

Guardian Crab Pot Sled

The Guardian Crab Pot Sled system is identical to the Guardian Inshore Sled but is configured into the traditional round design of a Dungeness crab trap (Figure 6). The system was tested during the 2025 EFP fishing period and found to perform in a comparable manner to the standard Guardian sled. The system has the following characteristics:

- Triggering: Configured with Sub Sea Sonics AR4RT, AR4RT+ and DAR4RT acoustic release systems
- Buoy Line Length: Up to approximately 900 ft of 3/8 in diameter line
- Buoys: Compatible with hard trawl floats, poly buoys and foam buoys including main and trailers
- Environmental: Compatible with seawater conditions, pressures and temperatures
- Dimensions: 36”, 38” or 40” diameter options. 14” tall.
- Weight: 75-120 lbs. fully rigged (depending on optional weights)
- Operating depth: Limited by buoy line length to approximately 600 ft
- Integration: Acts as first or last trap in a longline string of traps

Figure 6. The Guardian Inshore Sled with Dungeness crab trap configuration.

Guardian Trap-Top Retrofit

The Guardian Trap-Top Retrofit is a simple, reliable and inexpensive on-demand fishing system (Figure 7). The system is quick to rig and can be used on singles or trawls in depths to over 300 ft. These units are designed to be attached to the top of existing gear and use existing line and buoys if desired. The system provides all required underwater system capabilities including elimination of the vertical buoy line during fishing, acoustic on-demand triggering, can be set and redeployed at sea, is size compatible with fishing operations, is functional in a broad range of temperature conditions, constructed for the physical use on fishing vessels and underwater conditions, and has had extensive testing in a broad range of fisheries. The Trap-Top retrofit has undergone significant levels of testing in the California Dungeness crab fishery as well as elsewhere in the US including the Southeast Black Sea Bass fishery and the Northeast American Lobster fishery. Potential drawbacks of the Trap-Top Retrofit, when compared to the sled versions, include the need for customization of the system to accommodate a variety of crab pot styles and sizes (increased technical support is required), some crab pots are too short to accommodate releases when mounted vertically, and they will not stack when rigged.

Figure 7. Trap-top retrofit Guardian line handling system.

Traps Run in Groundline Strings

Testing and feedback from fishers indicates that the optimal configuration for the use of this on-demand gear is in conjunction with traps that are run in strings. In this configuration, the on-demand gear is installed at one or both ends of the string. The string configuration has two primary advantages when used with on-demand gear including (1) it reduces the capitalization costs because only one or two on-demand systems are needed for several traps instead of being required for every trap, and (2) it provides a reliable and proven back-up method to retrieve the gear by grappling the groundline between the traps. Testing of the system with Dungeness crab traps was conducted initially with 5 traps in a string and then built up progressively to as many as 50 traps per string. No significant issues were encountered with running the traps in strings independent of the number of traps used. Figure 9 shows the typical trap string configuration used during the EFP testing program. Traps were connected by a groundline and the sled or retrofit trap was installed on one or both ends of the string. Trap spacing on the groundline was generally 250-300 ft to allow for sufficient separation of traps and for a single trap to be lifted by the hauler at a time. A short gangion was installed between the groundline and the trap to allow the trap to pass through the hauler. The groundline used was either 3/8” or 7/16” rope. For authorization, we recommend that traps be required to be run in this longline configuration with groundline strings. The minimum number of traps should be 2 and the maximum number of traps should be 50. All groundlines should be constructed from sinking line or neutral line (specific gravity at least 1.06) in order to keep groundlines out of the water column. Groundlines should have a maximum diameter of 7/16”.

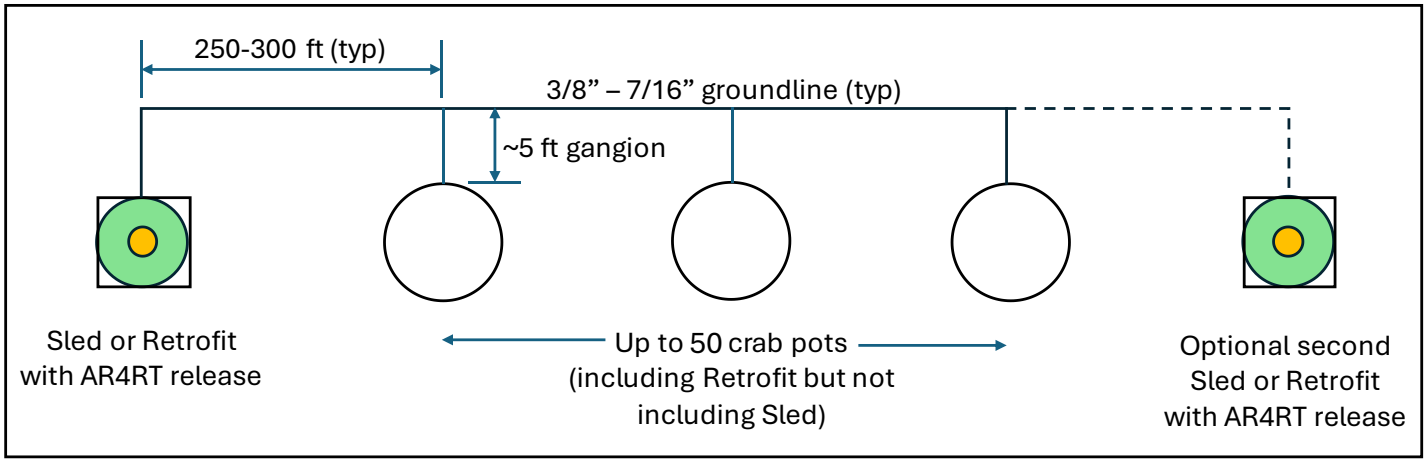

Figure 6. Photo (above), and general layout of the trap strings used during the EFP testing program (below).

Sub Sea Sonics Trap Timer Virtual Gear Marking App

In order to enable the use of on-demand fishing traps, there is a concurrent requirement for maintaining the ability to regulate and enforce the use of traps while preventing gear conflicts. Additionally, detectability by other fishers is imperative to reduce and prevent gear conflict. The system is supported by a tablet/cell-based app, a website portal, and a database to provide this capability. The app (Trap Timer) has versions that can be used onboard fishing boats, enforcement vessels and public vessels. The website is setup primarily for regulatory and management use. Access to the app is provided through an onboarding website that requires administrative approval by Sub Sea Sonics. Administrative approval includes verification of the user identity and role (fisher, enforcement, public). Once the user has been verified, the user is established in the database, and a link to download the app from the app store is provided. For regulatory personnel, this process also provides access to the website portal. The app is free and available to the public. For the fisher, the app is setup and operated on a cell phone or tablet (Android or iOS) with the following features:

- Map: A map display showing the location of the deployed traps overlaid on a nautical chart. This is the default screen. A symbol indicates the location of the boat on the screen. The map view displays all of the fisher's traps that are within the view window, along with other fishers' traps (as a different symbol) that are within the specified visibility radius.
- Table: A table display that shows the latitude and longitude of the fisher's deployed traps.
- Set: The "Set" button shows in both the Map and Table screens. For singles, when the Set button is pressed, the user is prompted to select the unit number and then confirm the set. For trawls, the user will be prompted for the unit number (if applicable) and confirmation of the first end. The Set button will then remain green indicating the second end still needs to be set. When pressed again, the user is prompted for the unit number (if applicable) and confirmation of the second end. After completion, the gear set is displayed on the screen and sent to the database (Figure 10).
- Haul: The "Haul" button shows in both the Map and Table screens and activates a popup window that prompts the user to confirm that they want to haul the gear set. By default, the closest trap to the boat is selected. Alternatively, the user can click on a specific gear set in either the map or table mode and the option to haul it will come up in a popup window. The haul action sends the release command to the deck unit to trigger the release of the underwater unit (Figure 11). The haul action also allows the fisher to mark the trap as lost or left in the event that the trap cannot be retrieved.
- Synchronize: There is a Sync button on the main screen that synchronizes the app with the shoreside database. Synchronization to the database can occur when the user is within Wi-Fi or cellular range. The system has settings options to select manual, Wi-Fi only, or Wi-Fi and cellular. When this function is executed, the system sends all user data since the last successful sync and retrieves others' data (interference data) since last successful sync for the area covered by map.
- Settings: An item from the upper left menu that allows the fisher to specify a user name, password, synchronization options, selections for single traps and trawls, ping verification, geospatial format, and range ring.

The enforcement version of the app is the same as the fisher version except that traps for all fishers are displayed that are within a specified visibility radius of the enforcement vessel. From within the map or table view, they can access information about the trap including location, deployment time, popup time, range, bearing and associated permit number. They also have the ability to haul or ping any pop-up unit in the fishery. The public version of the app is the same as the enforcement version except that they cannot access any information about the fisher, only have visibility of any gear sets that are within a specified visibility radius.

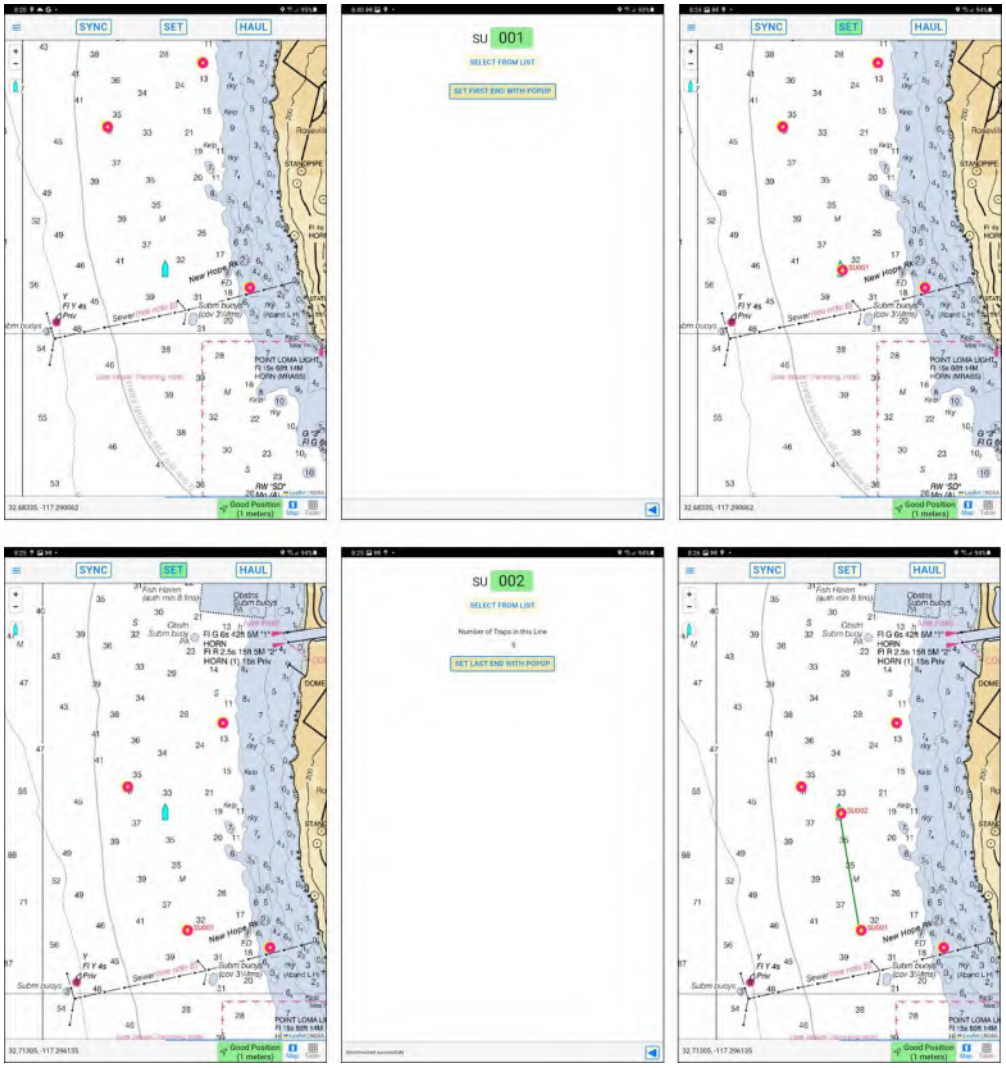

Figure 10. Setting a string in Trap Timer.

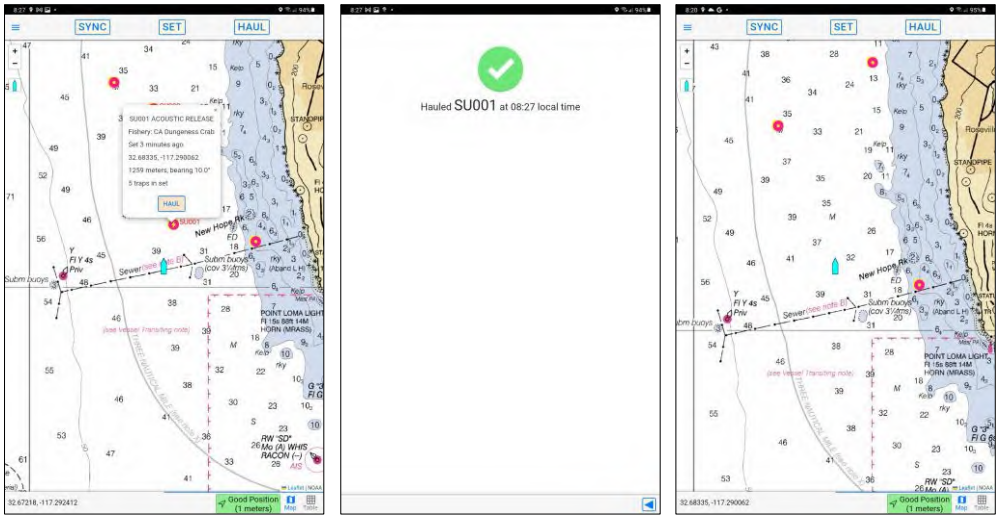

Figure 11. Hauling a string in Trap Timer.

Sub Sea Sonics Ropeless Regulatory Portal

The website portal (Ropeless Regulatory Portal) provides access to all data associated with users that are (or have been) actively fishing with Sub Sea Sonics on-demand gear. Access to the portal is assigned based on fishery. The website includes three main panels including a map view, a fisher table, and a data table (Figure 12). These views can all be filtered based on the data parameters of the database. In general, the data are first filtered in the fisher window by fishery, date, and then fishers within that fishery can be selected based on name, vessel name, or permit number. The filtered data are then displayed in the map view and the data view. The data view also provides multiple tabs to view general information, detailed information, and summary statistics associated with the filtered data.

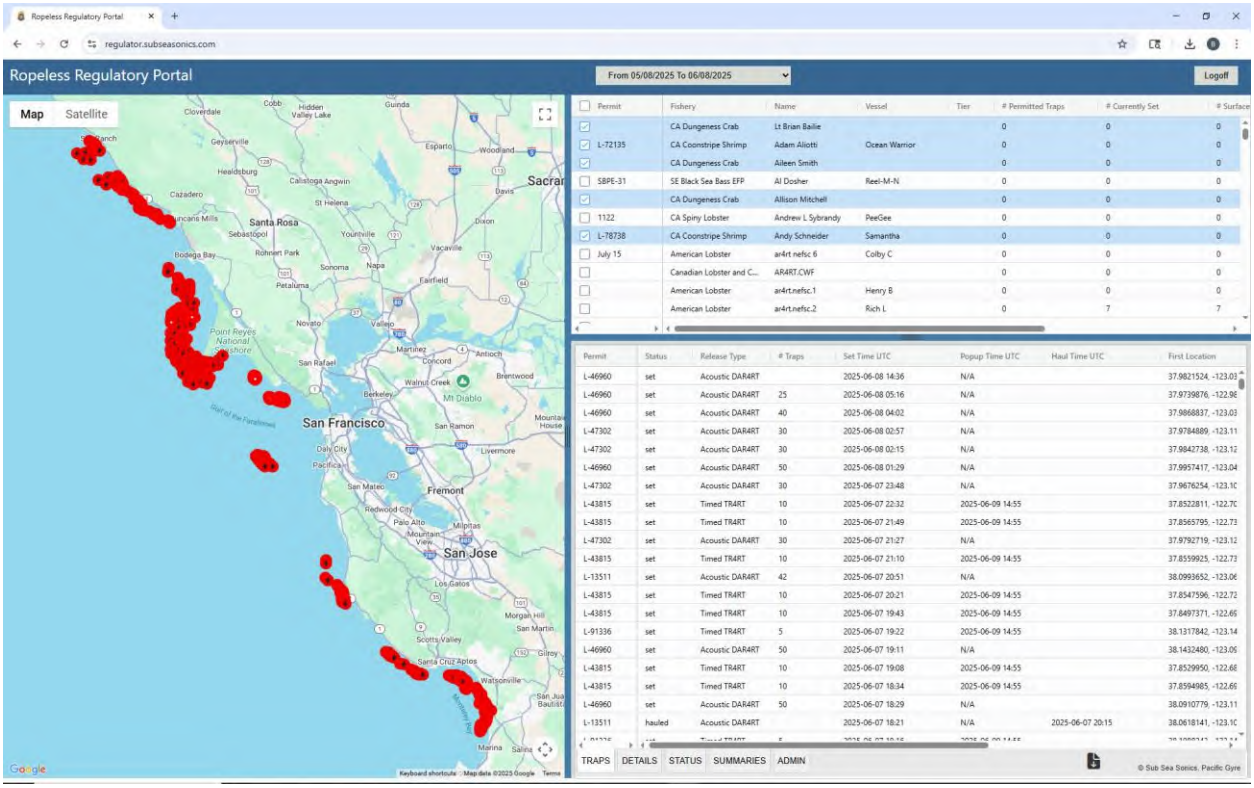

Figure 12. Screen shot from the Ropeless Regulatory Web Portal during the 2025 spring EFP fishing.

Electronic Monitoring System

In accordance with Department requirements, all vessels participating in the use of on-demand gear are required to use an Electronic Monitoring System (EMS). The EMS used during the EFP testing was either the FishVue Lime or the Pelagic Data Systems VTS. These are self-contained tracking device with built in cellular connectivity to a backend data storage and visualization dashboard. The unit is installed on an exposed upper area of the vessel, and is either connected to the vessel power supply (FishVue Lime) or is automatically charges and activates when exposed to sunlight (Pelagic). Vessel location data are recorded at intervals of one minute. The VTS provides compliance with vessel tracking requirements for the RAMP and in combination with the Trap Timer app and the Ropeless Regulatory Portal, provides a complete system for enforcement of on-demand fishing gear.

The main way in which users view and access their data is typically through the vendor dashboard. The dashboard provides easy access to view or download current data as well as all historic data associated with the vessel. Once the vessel is being tracked, the home port location is automatically detected, and vessel movements are separated into “trips” that go from that location and return to that location. These trip records can then be visualized on the dashboard as vessel tracks with color coding associated with vessel speed. An example of an electronic monitoring system and system installation is shown in Figure 13 and a typical dashboard view is shown in Figure 14.

Figure 13. The FishVue Lime electronic monitoring system (left) and the Pelagic Data Systems VTS installed on a Dungeness crab fishing boat (right).

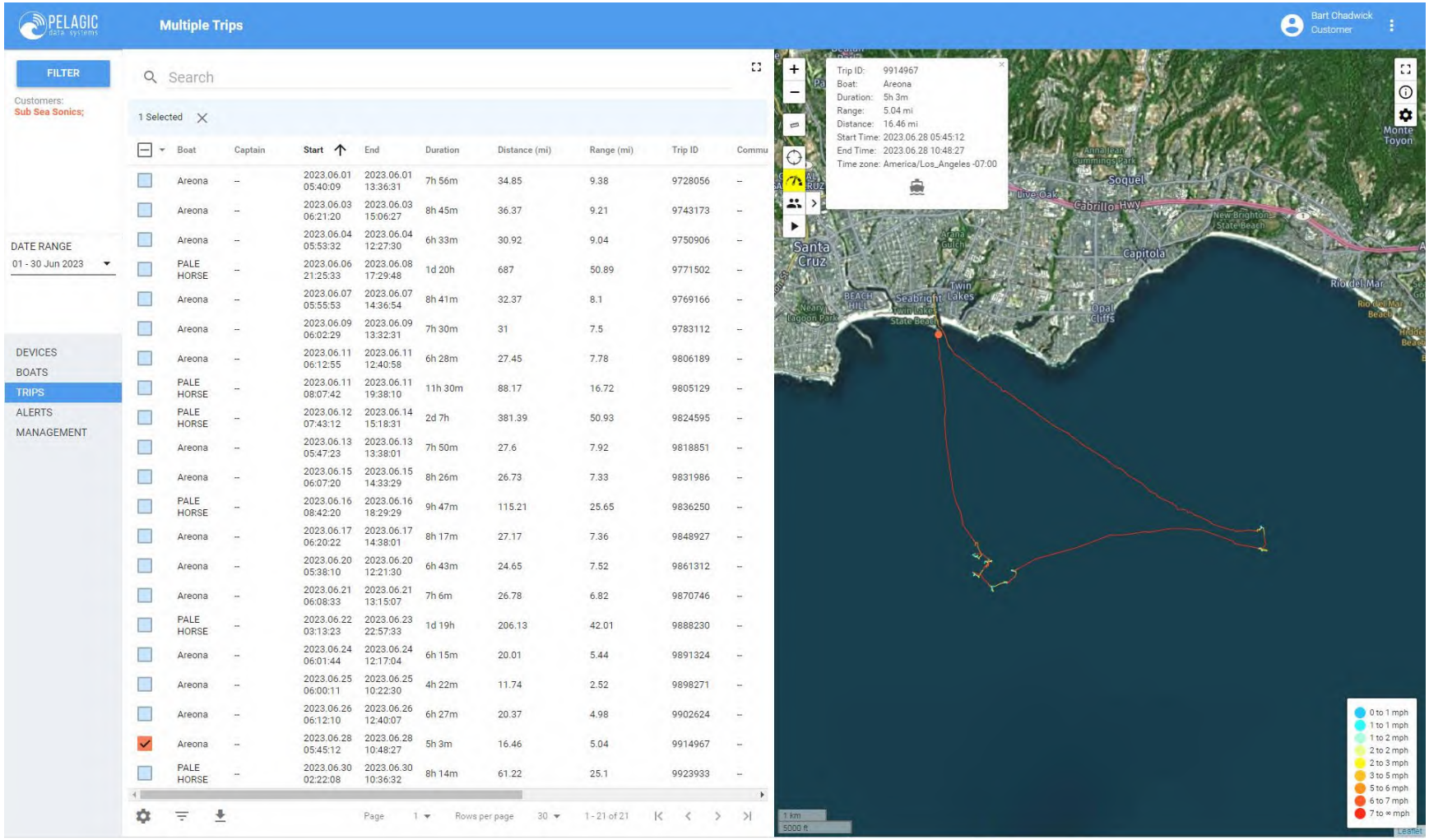

Figure 11. Typical VTS dashboard view of the trip list and trip track for a fishing day near Santa Cruz, CA.

Training and Certification

In order to assure readiness for use of the Alternative Gear, implementation of the system includes a training and certification component. The training includes dock-side and at sea experience with all aspects of the system and requires demonstration of proficiency in order to obtain certification for use of the gear. Only certified fishers will be provided with access to the gear. Experience has shown that training and demonstration of proficiency are important to assuring safe and effective use of the proposed Alternative Gear. The training can be administered by the manufacturers or designated fishers who have demonstrated competency with the gear (Figure 15). Training includes the following components:

- Overview of the gear: This provides a walkthrough of each component of the gear and their function including the release, the line handling system, the deck box and transducer, and the gear marking app. Typical setup for longlining of the traps is also discussed in the context of the fishing vessel setup.
- Gear setup and maintenance: This covers the steps to setup and maintain the release, line handling system, deck box and Trap Timer app. Setup of the traps for longlining is the responsibility of the fisher, but the setup can be reviewed at this step to make sure it is compatible with the Alternative Gear authorization and the pop-up system.
- Dry run at dock: This covers the steps to operate the gear including deployment and retrieval of the pop-up gear and all aspects of the gear marking system.
- On-water operations: This provides on-water training with the Alternative Gear by running through a series of at least 10 gear sets and recoveries with trainers aboard to advise and make any adjustments that might be needed for the gear. The on-water training also includes the use of a grapple to recover the gear via the groundline in the event the pop-up system fails.
- Certification trials: Certification trials are conducted in the fishing grounds under typical fishing conditions. To demonstrate proficiency, a series of at least 10 gear sets and recoveries with a minimum 100% success rate with the pop-up gear and 0% gear loss including the grapple backup method.

Figure 15. Training fishers during the 2025 spring EFP.

Trial Results

Extensive testing of the specific system described above was conducted during the spring of 2023-2025 under EFPT2-001 in the California Dungeness crab fishery. Previous testing was also carried out using single traps and the timed version of the release system (TR4RT) during 2021 in the California Dungeness crab fishery. Large-scale testing of the system has also been carried out in the Northeast US in conjunction with the NOAA Northeast Fisheries Science Center. In addition, significant testing of the system was conducted using single traps and the acoustic version of the release system in the California Spiny Lobster fishery and the Southeast US Black Sea Bass fishery during the winter of 2022-2023. Results from these testing programs are summarized below.

AR4RT/Guardian Testing under EFPT2-001- Spring 2025

Results from AR4RT/Guardian system testing under EFPT2-001 during the spring of 2025 provide the most extensive and realistic measure of the system performance for the gear that is targeted for authorization. The Spring 2025 EFP expanded on the 2023 and 2024 efforts to allow for more fishers and more gear. Fishermen tested a fully integrated on-demand fishing system from Sub Sea Sonics and Guardian Ropeless consisting of the following components:

- Sub Sea Sonics AR4RT/AR4RT+ Acoustic Release Units
- Sub Sea Sonics ARI-U Universal Acoustic Deck Unit with Transducer
- Guardian Ropeless Line Handling System variants with required lines and floats
- Second End and Grapple Backup Systems
- Traps run in strings (trawls) with a minimum of 2 traps per string
- Sub Sea Sonics Trap Timer Virtual Gear Marking App
- Sub Sea Sonics Ropeless Regulatory Portal
- Vessel Electronic Monitoring System
- Training and Certification Program
- rmwHUB interoperability system

Although 39 authorized agents signed up for the EFP, only 12 participated due to the perception of low crab abundance during the traditional season. Twelve authorized agents and 12 vessels participated in the testing. This included 1 vessel operating from San Francisco, 3 vessels operating from Bodega Bay, 4 vessels operating from Half Moon Bay, 1 vessel operating from Santa Cruz, 1 vessel operating from Moss Landing, 1 vessel operating from Morro Bay, and 1 vessel operating from Crescent City. All of the vessels except the Areona in Santa Cruz were equipped with the AR4RT/Guardian Sleds with 10-15 strings of 10-50 traps each. The Areona was equipped with AR4RT/Guardian Trap-Top Retrofits. Following training, the combined fleet of participants conducted a total of 1163 gear sets during the period from 4/20/25 – 7/13/25. All testing was conducted under actual fishing conditions and allowed for retention and sale of catch. The total number of traps set during the trials was 25721. The trials were carried out over approximately 123 individual trips.

In accordance with the EFP, the following data were collected:

- The number of traps in the trawl, and the location of the first and last traps of the trawl.
- The name and vessel ID of the vessel the trap was deployed from.
- The experimental fishing permit number the trap was deployed under.

- The time and date of deployment.
- The time and date of recovery.
- The location the gear was recovered (if different from the deployment location).
- The distance between the location where the gear was deployed and recovered (if different).
- The location of any unrecovered traps.

The following performance-based data were also collected:

- Release unit success/failure/cause
- Line handling system success/failure/cause
- Overall on-demand system success/failure
- Second end success/failure
- Backup grappling system success/failure

As part of the training program, fishers were instructed that gear performance reporting was required and they were provided with multiple means of reporting including a phone app, text message, phone call, or email. In addition, the EFP team checked in with fishers on a regular basis on their gear performance. While we believe that there was a high level of compliance with this reporting requirement, it was essentially an honor system and some gear issues may have been missed. At the same time, there were instances where a fisher identified an issue but wanted to try the gear again to verify the issue, and thus the same issue may have been replicated and counted again. For success/failure analysis, the following approach was adopted:

- If the gear could be recovered using the first end on-demand system the on-demand recovery was defined as successful
- If the gear could not be recovered using the first end on-demand system the on-demand recovery was defined as a failure
- Failures were subcategorized as best as possible into the following six cause codes based on the information reported by the fisher
    1. Release Malfunction
    2. Acoustic Coms
    3. Mechanical Issue
    4. Gear Marking App
    5. Line Handling System
    6. User Error
    7. Environmental Conditions
    8. Other (noted)
    9. Unknown
- An on-demand recovery was counted as a failure if any of these items 1-8 were indicated
- Item 9 included a number of issues that were not necessarily related to on-demand gear performance (such as broken groundlines) and were treated on a case-by-case basis
- If the gear was successfully recovered by the backup method using the second end, the on-demand recovery was still counted as a failure, but the gear was not designated as lost
- If the gear was successfully recovered by the backup method of grappling, the on-demand recovery was still counted as a failure, but the gear was not designated as lost

- If the gear could not be recovered with either the on-demand system or the backup grappling method then the gear was designated as lost

Based on the time and location that the gear was set; the following environmental data were also compiled:

- Water depth (from NOAA Coastal DEM)
- Wave Height (From nearest NOAA NDBC buoy)
- Wind Speed (From nearest NOAA NDBC buoy)

Also, in accordance with the EFP, participating fishers submitted landing data connected with EFP fishing activities using an electronic fish ticket using the web-based form submitted through the E-Tix application.

Complete data sets for the EFP testing during the spring of 2025 were submitted electronically with the annual report. Performance results are summarized below based on the specified requirements in the EFP and the RAMP requirements for Alternative Gear authorization.

Vessel	Operating Port for EFP	Configuration	Number of Strings	Number of Traps Per String	Total Number of Traps
Pale Horse	San Francisco	Armored Inshore Sled	15	30	450
Plumeria	San Francisco	Inshore Sled	9	25	175
Judy Kay	Bodega Bay	Inshore Sled	8	20	160
Sara Brent	Bodega Bay	Inshore Sled	15	20	300
Pamela Sue	Bodega Bay	Inshore Sled	13-17	20-40	350
Jacqueline L	Half Moon Bay	Dcrab-Style Inshore Sled	15	30	450
Eagle	Half Moon Bay	Inshore Sled	15	10	150
Carley Diane	Moss Landing	Inshore Sled	16	10-14	215
Areona	Santa Cruz	Trap-Top Retrofit	14	15	210
Lady Renee	Morro Bay	Inshore Sled	11-17	10-50	500
Miss Heidi	Bodega Bay	Inshore Sled	13	20-42	500
Fishy Business	Half Moon Bay	Inshore Sled	15	20	300

Table 1. Participating vessels and gear configurations.

Number, Depth and Location of Trials

The EFP requires annual reporting on the number of trips conducted by each vessel participating in the EFP, the total number of trap deployments, and the number of unsuccessful recoveries. The annual reporting for the EFP also requires a table containing deployment and recovery data for each trip conducted under the authority of this permit. The RAMP authorization requires that the number, depth, and location of trials be reported in the application. While there are no specific thresholds or requirements for these values, previous conversations with Department staff indicated an expectation for 100 deployment cycles over a range of ocean conditions.

During this phase of testing, a total of 1163 trials were conducted. Each trial involved a string traps with the traps per string ranging from 10-50, and the total number of traps set during the trials was 25721.

The trials were carried out over approximately 123 individual trips. Full details of the trials were included in in the electronic deliverable for the EFP annual report.

Depths of the gear during the trials were dictated by where the participating fishers wanted to fish the gear. No specific effort was made to test in depths other than those where the fishers would traditionally fish during the spring portion of the season. Depths ranged from 24 – 392 ft with an average of 163 ft. Statistics for the testing depths are shown in Table 1, and the complete data set for depths was included with the EFP annual report.

Depth Statistic	Value
Depth Min (ft)	24
Depth Max (ft)	392
Depth Avg (ft)	163
Depth Std Dev (ft)	72

Table 2. Water depth conditions during the EFP testing.

Locations of the gear during the trials were focused on the fishing grounds offshore from Point Arena (Zone 2), Bodega Bay/San Francisco (Zone 3), Santa Cruz/Monterey (Zone 4), and Morro Bay (Zone 5) (Figure 12). No specific effort was made to test in areas other than those where the fishers would traditionally fish during the spring portion of the season.

Gear Performance and Loss Rates

No performance metrics are specified in the EFP, and the only performance metric specified in the RAMP is that gear loss rates should not be more than 10%. Performance for the gear was characterized based on the success rate of the release units, the success rate of the line handling system, and the overall success rate of the on-demand system. In addition, we evaluated the success rate including the backup systems (second end and grapple) and the overall gear loss rate (Table 3).

Overall Performance of the AR4RT/AR4RT+ Release System

The AR4RT/AR4RT+ release system demonstrated a high success rate, achieving successful operation in 98.7% of the tests conducted. This performance is consistent with the results from the smaller-scale tests performed in the spring of 2023 and the large scale tests in 2024. Despite the high success rate, 12 release failures were documented. A thorough investigation into the causes of these failures is currently underway. Preliminary findings suggest various potential issues, including leaking release units, communication failures, slipping of the releases in the clamping brackets, and problems with the gear marking app/device. Some failures may be attributed to units coming from the first production run of a new design that was developed based on the previous years feedback. Future efforts will continue to focus on improvement in quality assurance checks during production. Despite these challenges, the release units maintained a high success rate, with detailed accounting for each gear set provided in the electronic deliverable with the EFP annual reporting.

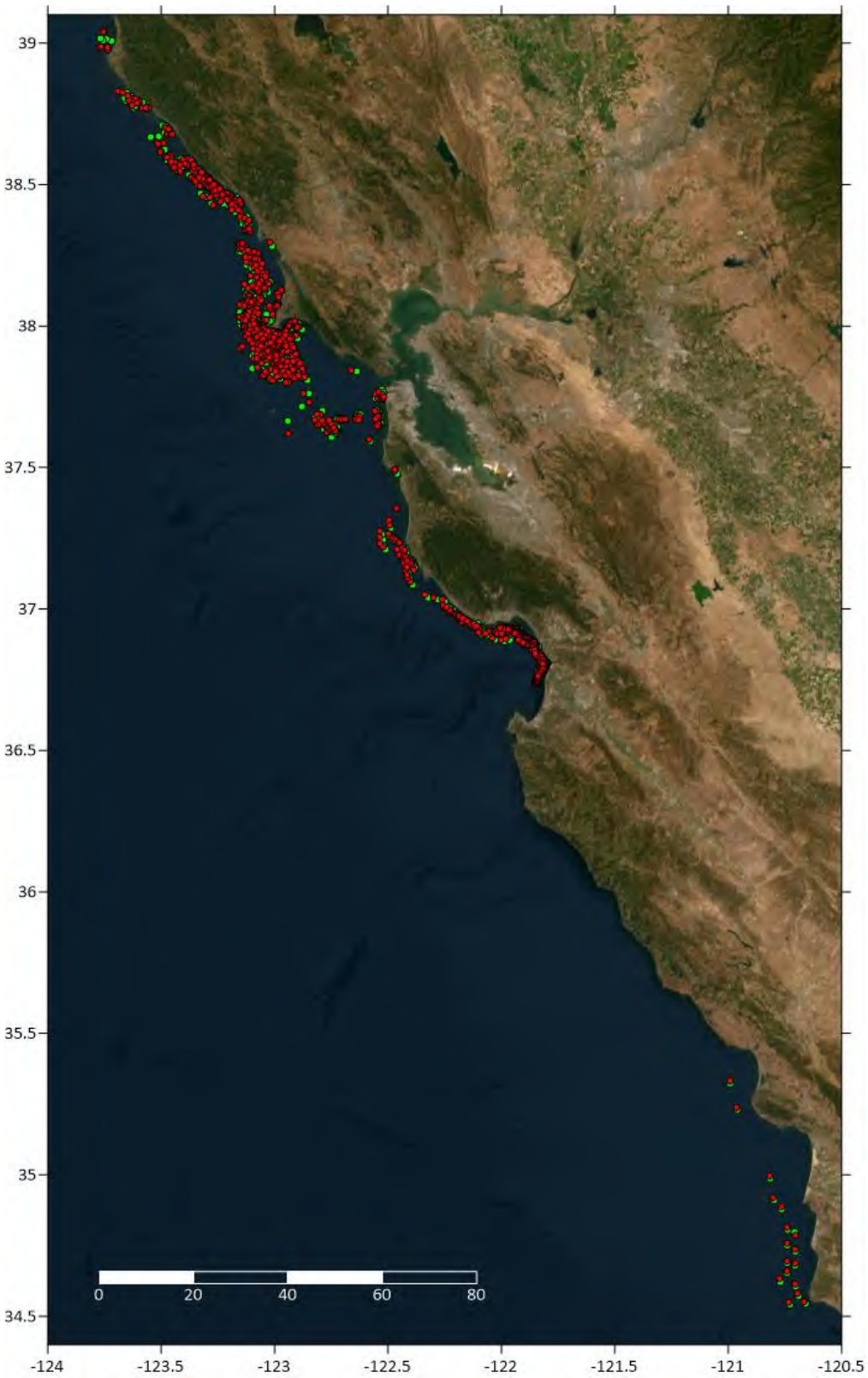

Figure 12. Map of the testing locations. Red filled circles indicate the first end of the string, and green filled circles indicate the last end during the set. Scale is in miles.

Performance of the Guardian Line Handling System

The Guardian line handling system also performed well, achieving a 99.7% success rate, again similar to the spring 2023 and 2024 tests. During the testing, 4 failures were observed, primarily attributed to line tangles of the buoy line. Some buoys were initially unlocated but surfaced later, likely due to currents or minor tangles resolving themselves. Poor line handling during sled packing contributed to some tangles. A comprehensive record of each gear set's performance was included in the electronic deliverable for the EFP annual report.

Overall On-Demand System Success Rate

Combining the individual success rates of the release and line handling systems, the overall success rate of the on-demand system was determined to be 98.4%, representing a slight improvement from the spring 2023/2024 tests. In instances where the on-demand system failed, hauling from the second end or grappling techniques successfully retrieved the gear. All non-surfacing on-demand gear was recovered via the second end or grappling, except for a few individual traps.

Gear Marking System

The testing during the Spring 2025 EFP provided a robust test of the gear marking systems and its ability to manage potential gear interactions. Prevailing conditions led to a very high concentration of gear in the vicinity of Point Reyes (Figure 12), providing an excellent test of relatively high density fishing. This was primarily Sub Sea Sonics gear, but gear from other manufacturers was also deployed in the area, along with traditional hagfish and coonstripe fishing gear. Interoperability was successfully achieved through the use of the Trap Timer app on all the vessels. The Trap Timer app accessed gear sets from the Sub Sea Sonics database (for Sub Sea Sonics gear), along with the rmwHUB and EarthRanger system for other manufacturers gear. No significant gear conflicts occurred. A total of 6 gear overlays occurred during the testing. Of these, two were done on purpose when a fisher purposely overlaid on his own gear to get more traps in an area. The other overlays were related to failures of the fishers to verify that they had synced the app prior to setting gear. To correct this issue, an updated version of Trap Timer will warn the fisher if their synchronization is not up to date. All of those overlays were easily resolved by the fishers involved.

Lost Gear

The EFP annual report requires a summary of efforts to recover lost gear and the outcomes. All gear strings were successfully recovered with either the primary popup end, the second end, or grappling. A total of seven individual traps were lost and could not be recovered. Three of these were associated with incorrectly rigged toggles. The other four were associated with broken groundlines. When broken groundlines were encountered, the remaining portion of the string was always recovered but in some cases a trap was lost during the recovery and locating an individual lost trap with no buoy or buoy line on it was not possible. The locations of the lost gear were included in the EFP annual reporting as the gear set locations of the strings from which the individual traps were lost.

Environmental Conditions During Trials

The EFP and RAMP do not provide specific guidance on the requirement for ocean conditions during the trials, but only requires that the conditions during the trials be reported in an authorization application. Based on the time and location data recorded in Trap Timer for each deployment, we compiled wave

height and wind speed data from the nearest NOAA NDBC buoy (Table 4). Because these weather buoy station locations do not correspond precisely to the gear locations, there may be differences between the buoy conditions and the actual conditions that were present during the deployments. Wave heights ranged from 1.4 – 11.5 ft with an average of 5.5 ft. This significantly expanded the range of wave conditions as compared to the small scale testing during spring 2023. Statistics for the testing wave height are shown in Table 5, and the complete data set was included in the EFP annual reporting. Wind speeds ranged from 0.0 – 27.2 kts with an average of 9.1 kts. This significantly expanded the range of wind conditions as compared to the small scale testing during spring 2023. Statistics for the testing wind speeds are shown in Table 6, and the complete data set for depths was included in the EFP annual reporting.

Totals	Number	Percent
Strings Set	1163	
Strings Hauled	1163	100.0%
Traps Used	3760	
Traps Set	25721	
Traps Hauled	25714	
Traps Lost/Left[1]	7	0.2%
Release Success	1148	98.7%
Line Handle Success	1159	99.7%
Overall Popup Success	1144	98.4%
Hauled from Second End	10	0.9%
Overall Success With Second End	1154	99.2%
Strings Grappled[2]	13	1.1%
Overall Success With Second End/Grapple	1163	100.0%

Table 3. Performance measurements for the AR4RT/Guardian on-demand system. Note that (1) the percent of traps loss is based on the number of traps used, not the number of traps set, and that (2) one unit had to be grappled even though the popup system worked correctly because the buoy was not secured properly to the buoy line, and another partial string had to be grappled even though the popup system worked, so the grappling rate is higher than just the failure rate of the popup system.

Data Item	Source
Point Arena Wind	NDBC Station 46014
Point Arena Waves	NDBC Station 46014
Bodega Bay Wind	NDBC Station 46013
Bodega Bay Waves	NDBC Station 46013
San Francisco Wind	NDBC Station 46026
San Francisco Waves	NDBC Station 46026
Monterey Wind	NDBC Station 46092
Monterey Waves	NDBC Station 46279
Morro Bay Wind	NDBC Station 46028
Morro Bay Waves	NDBC Station 46028

Table 4. Wind and wave condition sources for the EFP testing.

Wave Data	Value
Wave Height Min	2.2
Wave Height Max	12.7
Wave Height Avg	5.4
Wave Height Std Dev	1.5

Table 5. Wave conditions during the EFP testing.

Wind Data	Value
Wind Speed Min (kts)	0.0
Wind Spped Max (kts)	27.2
Wind Speed Avg (kts)	6.6
Wind Speed Std Dev (kts)	7.1

Table 6. Wind conditions during the EFP testing.

Landings During the Trials

The EFP annual reporting requires a summary of landing data for each crab species landed at each port by each vessel. In accordance with the EFP, participating fishers submitted landing data connected with EFP fishing activities using an electronic fish ticket using the web-based form submitted through the E-Tix application. A summary of the landings is shown in Table 7 below by landing port and for the total spring 2025 fishery. A total of 234504.4 pounds of Dungeness crab were landed by the participating vessels, indicating an average catch of about 19542 pounds for the 12 participating vessels. Note that this summary is based on landings reported through the Sustainable Seas Technology reporting app and may not reflect the complete totals submitted via E-Tix because use of the reporting app was not required, and some fishers may have submitted landings without using the app. Subsequent preliminary data provided by CDFW indicated total landings for the 12 EFP participants of 217633.65 pounds with a value of $1,425,136.52.

Port	Landings (lbs.)
Noyo Harbor	6435.0
Bodega Bay	119498.0
San Francisco	32377.0
Half Moon Bay	35290.4
Santa Cruz	14682.0
Moss Landing	26062.0
Morro Bay	160.0
Total	234504.4

Table 7. Summary of landings by landing port.

<u>Spring 2024 EFP Results</u>

The Spring 2024 EFP expanded the testing from 2023 to include more fishermen and to allow for the use of more gear. Fishermen tested a fully integrated on-demand fishing system from Sub Sea Sonics and Guardian Ropeless consisting of the following components:

- Sub Sea Sonics AR4RT Acoustic Release
- Sub Sea Sonics ARI4RT Acoustic Deck Unit with Transducer
- Guardian Ropeless Line Handling System with required lines and floats
- Traps run in strings (trawls) with up to 10 traps per string
- Sub Sea Sonics Trap Timer Virtual Gear Marking App
- Sub Sea Sonics Ropeless Regulatory Portal
- Multi-manufacturer Interoperability via the rmwHUB

Additional key components of the EFP included:

- Vessel Tracking System
- Proficiency Training for Fishers and Enforcement Personnel

Nineteen authorized agents and 19 vessels were approved to participate in the testing. This included 5 vessels operating from San Francisco, 7 vessels operating from Bodega Bay, 4 vessels operating from Half Moon Bay, 1 vessel operating from Santa Cruz, and one vessel operating from Moss Landing. All of the vessels except the Areona in Santa Cruz were equipped with the AR4RT/Guardian Sleds with 15 strings of 10 traps each. The Areona was equipped with AR4RT/Guardian Trap-Top Retrofits with 16 strings of 8 traps each. Following training, the combined fleet of participants conducted a total of 2361 gear set during the period from 4/9/24 – 6/30/24. All testing was conducted under actual fishing conditions and allowed for retention and sale of catch. Each trial involved a string of 10 traps, with the exception of the Areona with 8 traps, so the total number of traps set during the trials was 23048. The trials were carried out over 277 individual trips.

Locations of the gear during the trials were focused on the fishing grounds offshore from Bodega Bay/San Francisco (Zone 3) and Santa Cruz/Monterey (Zone 4). Deployment depths ranged from 19 – 325 ft with an average of 162 ft. Wave heights ranged from 1.4 – 11.5 ft with an average of 5.5 ft. Wind speeds ranged from 0.0 – 27.2 kts with an average of 9.1 kts. Overall, the release system (AR4RT) was successful in 98.9% of the tests, the line handling (Guardian) was successful in 98.9% of the tests, and the overall success rate of the on-demand system was found to be 98.0%. When the on-demand system did not work, grappling was generally effective as a backup method. Loss rates for gear was about 1.3%. An estimated total of 292000 pounds of Dungeness crab were landed by the participating vessels, indicating an average catch of about 15368 pounds for the 19 participating vessels.

Spring 2023 EFP Results

During Spring 2023, two fishers participated in the testing including one from San Francisco (F/V Pale Horse) and one from Santa Cruz (F/V Aereona). Each vessel was equipped with 10 strings of 5 pots each with an AR4RT/Guardian system installed on one of the end pots in the string. Pots were separated by 200-250 ft of groundline with 5 ft gangions. The Trap-Top Retrofit Guardian line handling systems were set up with 200 ft of neutral buoy line with a 12 inch hard main float and an A0 Polyform trailer float. Each on-demand trap was equipped with an AR4RT unit mounted on a vertical stanchion with an access port to allow for installing the release loop. Each AR4RT unit was programmed with a unique release code. Both vessels were equipped with deck units and tablets to allow for virtual gear marking and acoustic triggering using the Trap Timer app. In addition, each vessel was equipped with a VTS that recorded the vessel position at a frequency of once per minute during all fishing operations.

The F/V Pale Horse conducted a total of 122 complete gear cycles during the period from 4/26/23 – 6/30/23. The F/V Aereona conducted a total of 117 complete gear cycles during the period from 5/28/23 – 6/26/23. These periods included 2-3 initial days of training when the gear manufacturers and training personnel were also involved with the process. During this phase of testing, 122 trials were conducted off San Francisco and 117 trials were conducted off Santa Cruz for an overall total of 239 trials. Each trial involved a string of 5 traps, so the total number of traps cycled during the trials was 1195.

All testing was conducted under actual fishing conditions and allowed for retention and sale of catch. Depths of the gear during the trials was dictated by where the participating fishers wanted to fish the gear. Overall, depths ranged from 24 – 144 ft with an average of 94 ft. Wave heights ranged from 3.3 – 11.5 ft with an average of 5.2 ft. Wind speeds ranged from 0.0 – 23.3 kts with an average of 7.5 kts. Overall, the release system (AR4RT) was successful in 99.6% of the tests. The line handling (Guardian) was successful in 97.5% of the tests. Based on the individual success rates for the release and the line handling system, the overall success rate of the on-demand system was found to be 97.1%. For those instances where the on-demand system failed, grappling was found to be highly successful in retrieving the gear within an additional 10-15 minutes. All of the on-demand gear that did not successfully surface was subsequently successfully recovered by grappling. The only gear that was lost during the testing was a partial string of traps (4) that were displaced by a Halibut trawler that came through the fishing area. Discussions with the trawler indicated that the string was likely pulled south of its original location. Thus, out of the 1105 traps that were set during the testing, 4 were lost for a loss rate based on percent usage of 0.3%. Alternatively, if the gear loss were measured based on the number of traps lost out of the number of traps used, the loss rate would be 4%.

Overall EFP Results

Over the three years of testing under EFPT2-001, a total of 3740 gear cycles were completed with a reliability rate for the gear of 98%.

Previous System Testing and Testing in Other Fisheries

The Alternative Gear proposed here (or aspects of that gear) has been subject to significant previous testing in the California Dungeness crab fishery as well as in other fisheries that are reasonably comparable to the California Dungeness crab spring fishery. These additional testing efforts are summarized below to provide additional information on the performance of the gear under a range of conditions.

2021 Testing in the California Dungeness Crab Fishery

Previous testing was carried out using single traps and the timed version of the release system (TR4RT) during 2021 in the California Dungeness crab fishery. Testing for the TR4RT system with Dungeness crab traps was conducted out of Santa Cruz Harbor on F/V Grinder. An initial phase of testing was conducted from September through October of 2021 in the commercial rock crab fishery but using Dungeness crab traps rather than rock crab traps. A second phase of testing was conducted in December 2021 in the commercial Dungeness crab fishery. For the trials, 5-10 traps were fitted with TR4RT release units and the PinPoint line handling systems (not the Guardian). During each deployment, the gear was marked on the surface with a backup line and float and was also marked virtually using the Trap Timer app.

A total of 130 trials were conducted during the two testing phases. Of these, 124 were considered to be successful for an overall success rate of 95%. Successful trials required that a complete deployment and recovery cycle of the on-demand system be achieved without any intervention using the backup float, grappling or any other means to assist in the gear recovery. Depths during the trials ranged from 55 – 195 feet. The trials were all conducted in Zone 4, which extends along the California coast from latitude 36° 0'N to 37° 11'N. Overall, the gear surfaced when expected and was found to release successfully. Over time, retrieval and redeployment efficiency was found to improve significantly. The Trap Timer virtual gear marking app was found to work consistently and enabled successful remote gear tracking. Of the six failures that occurred, two were related to a loose battery in one of the units that was subsequently corrected. Line tangles were the cause of three failures and this issue was also corrected by implementing a more consistent line coiling and securing procedure. The cause of one other failure was not documented. In general, the system was found to be highly reliable and issues that were identified during the trials have been addressed through corrective measures.

2025 Testing by the State of Massachusetts

Testing was carried out by the State of Massachusetts during 2025 under their On-Demand Gear Research Program. Under the Massachusetts Program, the State provided reimbursement of costs (up to $25000) for equipment needed to conduct on-demand fishing activities by fishers in the Massachusetts Restricted Area (MRA) or South Island Restricted Area (SIRA). A single fisher signed up for the program in the first round and fished using his full gear stack (800 pots) during the closure period in the MRA from February 1 – April 30, 2025 in the American Lobster fishery. The gear was configured in 33 trawls of 24 traps each with a sled (modified Guardian inshore) and Sub Sea Sonics AR4RT+ release unit on one end of each trawl. All gear was marked and hauled using the Trap Timer app. A total of 432 complete gear sets were made during the testing period with 100% success. One trawl was displaced by one of the state's Scallop survey boats and resulted in the loss of 11 traps. Although the fisher was in contact with the state prior to the survey and moved his gear away from the planned survey stations, apparently the field crew changed stations the day of and went through his gear. Other than the reimbursement costs for the gear, no testing stipends were provided and the fisher was allowed to retain and sell his catch. This represented the first full-scale fishing trial of on-demand fishing gear in the Northeastern United States.

2024 Testing by the Northeast Fisheries Science Center

Testing was carried out by the NEFSC during 2024 including multiple Guardian/Sub Sea Sonics configurations, but primarily Guardian Inshore Sleds with AR4RT release units. A total of 1779 hauls were completed in 2024 using 95 different Guardian-Sub Sea Sonics devices. The devices performed as expected 93% of the time. The leading cause of unsuccessful hauls was mechanical, which made up of 31% of reports, followed by technical and operational both at 22%.

2022 - 2024 Testing in the California Spiny Lobster Fishery

Testing of the system was conducted using single traps and the AR4RT release system in the California Spiny Lobster fishery over three fishing seasons from 2022 to 2024. Testing was carried out using the AR4RT system with the PinPoint line handling system on the F/V Haywire.

In 2022, twenty single traps were configured with the AR4RT/PinPoint system as the main retrieval system, and a second coiled line and float with galvanic timed release as the backup (note that the use

of galvanic timed releases is allowed in this fishery so the back-up system is what would normally be used as standard gear). Testing was conducted during the period extending from October to December. A total of 122 trials were conducted with 117 successful, 4 requiring backup gear, and 1 unit lost under storm conditions. This translated to an overall 96% success rate for the system. Tests were carried out near the entrance to San Diego Bay and in the kelp beds to the west of Point Loma in water depths ranging from 6 – 55 ft. Of the five failures that occurred, two had release failures associated with the release cam jamming against the line coil, two were associated with line tangles, and one was displaced by a large storm and could not be located.

In 2023, twenty single traps were configured with the AR4RT/PinPoint system as the main retrieval system. For the backup system, a galvanic release was placed between the release loop and the bungee that secured the line coil. Testing was conducted during the period extending from October to December. A total of 239 trials were conducted with 238 successful, 1 requiring backup gear, and no lost gear. This translated to an overall 99.6% success rate for the system. Tests were carried out near the entrance to San Diego Bay and in the kelp beds to the west of Point Loma in water depths ranging from 21 – 40 ft. The cause of the single release failure was attributed to a bad connection between the motor and the release cam that resulted in slipping of the cam during rotation.

In 2024, fifteen single traps were configured with the AR4RT/PinPoint system as the main retrieval system. For the backup system, a galvanic release was placed between the release loop and the bungee that secured the line coil. Testing was conducted during the period extending from October to December. A total of 121 trials were conducted with 115 successful, 2 requiring backup gear, and 1 lost trap. This translated to an overall 97.5% success rate for the system. Tests were carried out near the entrance to San Diego Bay in water depths ranging from 13 – 38 ft. Most of the failures were related to the buoy line tangling with buoy lines from other traps and/or kelp and being held under.

2022 Testing in the Southeast US Black Sea Bass Fishery

Testing of the system was conducted using single traps and both the timed and acoustic version of the release system in the Southeast US Black Sea Bass fishery during 2022. Traps were outfitted with the either the TR4RT or AR4RT/Guardian system. Backup recovery was by grapple. Testing was conducted during the period March 2022 – December 2022 (note that extensive additional testing has been conducted but these are the only results that have been compiled so far).

A total of 593 trials were conducted with 586 successful, 7 requiring backup gear, and 0 units lost. This translates to an overall 98% success rate for the system. Tests were carried out offshore from Sneads Ferry, North Carolina in water depths ranging from 2 – 96 ft. Of the 7 failures that occurred, four were related to human error and three had unknown causes.

Summary of Other Testing

Overall, the additional testing that has been conducted to date represent an additional 3398 trials with a combined success rate of 96%. The results from these other testing programs are comparable to what we found during the EFP testing for the California Dungeness crab fishery and support the conclusion that the gear is highly reliable. These other testing programs have also provided significant opportunities to continue to refine and improve the gear. Including this testing and the California EFP testing, over 7100 trials have now been performed with the gear.

Gear Acceptability under the RAMP Criteria

A key goal of the EFP was to provide sufficient testing and evidence to determine if the gear is ready for Authorization under the RAMP criteria. A description of the Sub Sea Sonics/Guardian system capabilities with respect to the RAMP requirements for Alternative Gear is provided below for each of the current RAMP criterion.

Detectable

This requirement specifies that the Alternative Gear meet the following criteria to be detectable:

- Be detectable by the department, fishermen and public, including description how the location of Alternative Gear is available visually or virtually.
- Includes equipment specifications, costs, and any required specialized equipment or training to deploy, operate, or detect the gear.
- The Alternative Gear be detectable to prevent fishing in closed areas.
- If "ropeless," the gear must be used with software that enables department law enforcement and other fishing vessels within 1/4 mile of the gear to identify the location of the gear at all times when it is deployed.
- The public must also be granted free access to approximate gear locations to minimize the potential for gear conflict or loss.

The manner in which the Alternative Gear satisfies each of these criteria are described below.

Detectability

The Trap Timer app (Android and iOS) provides detectability of the gear for fishers, enforcement and public users. When the gear is underwater, the app shows the location of the gear on a tablet or cell phone that synchronizes with a shoreside database. When the gear is at the surface, both the app and floats provide visibility. Units with the ping verification feature can also be detected acoustically. In addition, detection and location of gear marks from the Trap Timer app and acoustics can be further verified with the vessel's electronic monitoring system.

Equipment Requirements

The equipment required to detect the gear includes a tablet or cell phone with cellular and Wi-Fi capability (typical cost $0-600) with the Trap Timer app (free) installed. Onboarding and training for the Trap Timer app are provided to fishermen as part of the equipment cost, and can be provided remotely to department and public personnel free of charge. In person training can be arranged at a cost commensurate with travel and time requirements for the specific training event.

Detectability in Closed Areas

The proposed Alternative Gear is detectable in closed areas via multiple methods. First, the gear can only be serviced using the Trap Timer app which requires that the gear be marked by GPS, and the Department has access to all of this virtual gear marking data. Second, every vessel in the Dungeness crab fleet is required to use electronic monitoring during fishing operations. This monitoring provides a GPS location of the vessel every minute which can be used to determine if the vessel has been operating in a closed area in a manner consistent with the setting and hauling of fishing gear. Third, the AR4RT

release units are equipped with a ping feature that can be used by Enforcement to determine if gear has been deployed in a closed area. The ping feature cannot be turned off by the end user.

Identification of Location

The Trap Timer app provides a chart plotter style map view of the gear for fishers, enforcement and public users. When the gear is underwater, the app shows the location of the gear on a tablet or cell phone that synchronizes with a shoreside database. When the gear is at the surface, both the app and floats provide visibility. The visibility distance can be set for a given fishery or for different user roles within the fishery.

Free Public Access

The Trap Timer app is available to the public free of charge. Access is controlled via an onboarding process that is carried out by Sub Sea Sonics based on a demonstrated need. Training for public users is generally straightforward and can be provided remotely at the time of onboarding.

Retrievable

This requirement specifies that the Alternative Gear meet the following criteria to be retrievable:

- Have a means of retrieval, including a release mechanism, equipment and any specialized training needed to deploy and/or retrieve Alternative Gear.
- Have safeguards and procedures to minimize gear loss and ghost gear, with gear loss rates of no more than 10%.
- Gear must include a back-up release capability so it will surface in the event of an equipment failure.
- Must include a gear recovery plan if the gear does not rise to the surface.

The manner in which the Alternative Gear satisfies each of these criteria are described below.

Primary Means of Retrieval

Because the AR4RT system uses an acoustic trigger, there is a requirement for a deck unit and transducer to activate the release. For fishers, the gear is deployed and retrieved as described in the previous sections of this document that describe the gear. While the pop-up gear itself can be handled with traditional deck gear, the configuration of the traps in strings may require adjustments to the vessel and gear handling techniques in order to accommodate the strings. Because the Dungeness crab fishery in California currently only uses singles, most vessels that adopt this gear would need to make the required changes to allow for handling of strings. Based on the test vessels that we evaluated, this is generally feasible for a range of existing vessels but the length of the strings that can be handled safely and effectively may be a function of the size and configuration of the vessel as well as the size of the crew. However, with a minimum string length of two, generally any vessel in the fleet could be adapted to use the gear. Reliability of the primary system has been demonstrated over three years of EFP testing to be about 98%. Training with the gear is an essential element for successful operation and is included for fishermen as part of the cost of the gear. The training generally includes a classroom component and an on-water component that cover safety, regulations, setup, rigging, setting, hauling, app use, and troubleshooting.

Safeguards to Minimize Gear Loss

Gear loss has been demonstrated during the EFP testing to be very low. In general, gear loss is minimized by making sure that the popup gear is highly reliable, ensuring users have been adequately trained, and providing reliable back-up methods in the event of a failure of the primary retrieval system. The back-up methods, including going to the second end (when available) or grappling have been shown to be highly effective during the EFP testing but grappling should only be used when conditions are safe for the specific application and environmental conditions.

Back-Up Retrieval Capability

Two backup methods were demonstrated during the EFP testing. The first method, applicable for strings longer than 20 traps, was to use the popup unit at the second end. In general, we only encountered one instance when this did not work and a string with popups at both ends had to be grappled.

In cases where there is only a popup at one end, or both ends fail, the grappling backup method has proved highly reliable, and is a commonly used practice among fishers in many different fisheries and situations. To make this backup as reliable as possible, the correct type of grappling gear should be specified and training with the gear should be included as part of the training for the system. With the high reliability of the on-demand system, combined with the tried and true backup of grappling and adequate training, gear recovery rates approaching 100% have been demonstrated and can be expected in the future. While this method does not cause the system to surface in the event of a failure, it is preferable because having the system surface in the event of a failure creates a potential entanglement risk if the fisherman cannot be present when the back-up system activates.

Gear Recovery Plan

Effective gear recovery plans were developed as part of the EFP process. The gear recovery plan generally includes the following components and options:

- Attempt to recover the gear from the preferred end of the gear string.
- If the initial attempt fails, retry the acoustic release command and determine if the unit is sending back a verification signal.
- If a popup is installed on the other end of the string, go to that end and attempt to haul the gear from there.
- If there is only a popup at one end, or both ends fail to popup, chose the preferred end and grapple up the gear by hooking it between the popup unit and the first trap.
- If grappling at that location is unsuccessful, attempt grappling at the other end or at other parts of the gear string.
- If unable to recover the gear by grappling, and the gear location cannot be verified acoustically, conduct a wider gear search with the acoustics
- If the gear is relocated acoustically, attempt to haul with the popup gear or follow up with grappling if that is unsuccessful.
- If all attempts to recover the gear have been exhausted, report the gear as lost to the Department and the gear manufacturer

Identifiable

This requirement specifies that the Alternative Gear meet the following criteria to be identifiable:

- Provides a means of Alternative Gear identification for the Department to identify Alternative Gear to permitholder both remotely when submerged, and at the surface.

The manner in which the Alternative Gear satisfies this criterion is described below.

Gear Identity

The AR4RT/Guardian system provides the ability for Department personnel to easily identify the Alternative Gear both when submerged and at the surface. When the gear is submerged, the regulatory version of the Trap Timer App provides the ability to identify the permit number associated with any trap that is within the specified visibility radius of the vessel. These traps are visible in the map and table views of the app and clicking on the trap brings up the required information including position, deployment time, popup time, range, bearing and associated permit number. When the gear is at the surface, the app can still be used in the same way, or the gear can be identified based on the traditional buoy markings. The visibility radius is adjustable but should be at least ¼ nautical mile based on the recommendation in the RAMP. Along with access via the Trap Timer app, the Sub Sea Sonics Ropeless Regulatory Portal provides full visibility of all of the gear across the fishery in a web-based portal format. In addition, Sub Sea Sonics gear data are shared via the rmwHUB which provides interoperability with other manufacturers, provides connections to other gear marking hubs such as Earth Ranger, and provides connection to the gear enforcement portal that is under development by PSMFC.

Risk Reduction Benefit

This requirement specifies that the Alternative Gear meet the following criteria to be beneficial:

- The Alternative Gear reduces the risk of entanglement.

The manner in which the Alternative Gear satisfies this criterion is described below.

Benefit

The benefit of the AR4RT/Guardian system in reducing entanglement risk is based on removal of the vertical line during the time between deployment and popup. The degree of risk reduction is a function of the percentage of time the system is in ropeless mode, which is determined by the return time of the fisher relative to the popup time. In general, these times can be very close and risk reduction for entanglement should be on the order of 99% or greater. This parameter is calculated as:

$$\%\ Risk\ Reduction = \frac{Deployment\ Time - Popup\ Time}{Deployment\ Time - Retrieval\ Time} \times 100$$

Typical soak times (Deployment Time – Retrieval Time) for the gear during the spring are around 7 days based on data collected during the EFP, while the time for the fisher to recover the vertical line following on-demand popup is generally less than 5 minutes. Thus the % Risk Reduction is typically on the order of >99.9% compared to traditional gear.

Along with this major reduction entanglement risk, another primary benefit of the gear is that it provides the opportunity for fishers to have access to the fishery when it would otherwise be closed.

Southern fishing zones of the California Dungeness crab fishery are consistently closed during the spring now because of either the high presence or the expected high presence of whales in the area. During the spring of 2023, this closure was limited to Zones 3-6 while fishing was allowed to continue in Zones 1-2 through mid-July. This trend is likely to continue and creates uneven access to the fishery that could be relieved by the approval of Alternative Gear.

A number of other benefits have been identified by the EFP participants during the testing of the gear. There is significantly less gear loss using the combination of longlining and popup gear compared to traditional gear. This is because the pots are not reliant on surface buoys that are easily cut, dragged or otherwise lost. Due to its nature, longline gear does not "walk," as traditional single-pot deployments can and do. The lack of persistent surface floats and buoy lines makes the gear much less likely to be run over by transiting vessels, less likely to be dragged by kelp wads or other debris and less likely to be pilfered by unscrupulous opportunists. Participants also cited the benefit that they are able to safely fish in high-traffic zones without risk of gear loss and that they do not have to regularly clean growth from surface buoys and buoy lines. The AR4RT/Guardian system, with grapple backup (if needed), have been proven to be very effective (nearly 100%) at retrieving gear consistently even in the unlikely event of a gear malfunction.

Overall, there is a significant benefit to the use of the gear through the reduction of exposure to vertical lines, the reduction of ghost gear, the reduction of vessel interactions, and the reduction in operational maintenance.

Enforceable

This requirement specifies that the Alternative Gear meet the following criteria to be enforceable:

- Provides a means by which department law enforcement can find and retrieve the Alternative Gear at sea.
- Defines the costs of any necessary equipment and/or training.
- Allows Department law enforcement to retrieve and redeploy the gear.

The manner in which the Alternative Gear satisfies this criterion is described below.

<u>Find and Retrieve the Gear</u>

The ability of the Department to perform enforcement would be highly enhanced by the use of the integrated AR4RT/Guardian system described here. This is because the system provides vastly more information regarding the location and status of both the gear and the associated vessels than is currently available. Information on the gear location and status is available through both the Trap Timer app and the Ropeless Regulatory Portal, and vessel tracking information is available through the electronic monitoring system dashboard. All of these information systems are available to the Department. In addition, PSMFC is developing an enforcement portal that will allow the direct viewing of both gear marking and electronic monitoring data. The functionality of each of these systems are summarized below from an enforcement standpoint.

Trap Timer App: The enforcement version of the Trap Timer app provides enforcement access to all of the permitted traps within the fishery. In the map and table views, these traps show up as icons or list items, respectively. During underway operations, the app can be used to locate and identify gear. In conjunction with the deck unit and transducer, the app can be used to trigger the release and retrieve

the gear for inspection purposes. The app automates this process so that the enforcement personnel only have to select which trap to retrieve and the app will automatically cross reference the unique release ID. The app also provides the ability to "ping" specific gear without actually hauling it. This provides a verification that a specific gear set is actually in the vicinity of where it was marked by the fisher. The Trap Timer app is free and available through app stores following onboarding through Sub Sea Sonics. Free training for the app is also available from Sub Sea Sonics.

Ropeless Regulatory Portal: The Ropeless Regulatory Portal provides a web-based link to the Sub Sea Sonics trap database. The portal provides access to all current and historical trap locations, information on deployment and retrieval times, along with fisher, permit and vessel information. This information is only accessible to enforcement personnel on a fishery basis. The data there can be filtered and downloaded based on any desired parameters. This system provides enforcement with the ability to review the locations, timing and effectiveness of the gear from the office. It can also provide the ability to plan enforcement missions based on near real-time information on trap locations and status. Access to the Ropeless Regulatory Portal is free for enforcement personnel. Sub Sea Sonics can provide free training for enforcement personnel on the use of the portal.

Electronic Monitoring System: The electronic monitoring systems that are required in the Dungeness crab fishery (e.g. Pelagic Data Systems VTS and the FishVue Lime) provide dashboard access to all current and historical vessel location information on a per trip basis. The EM system provides visibility into the movements and operations of the fishing vessels through map visualizations of both position and speed. These maps provide a clear picture of where and how the vessels have been operating. From an enforcement perspective, the EM dashboard provides a powerful tool to determine if fishers are operating in the proper areas and the proper times, if fishers reported gear locations correspond to their vessel tracks (Figure 13), and to further investigate any operations that may be considered to be unlawful with respect to fishing regulations. Access to the EM dashboard is part of the service subscription and is covered either by the Department or the fishermen Training on the use of the EM can be provided by the EM provider or their dealer representatives.

Costs of Necessary Equipment and Training

The equipment needed by the Department includes a tablet device running Android or iOS that includes GPS, Wi-Fi, cellular and Bluetooth connectivity in order to run the Trap Timer app. Typical tablet costs are in the range of $200-$600. The system can be run with either Wi-Fi or cellular data but having both options is preferred. In addition, in order to haul gear independently, the Department would need a deck box and transducer at a cost of $2000. Training for the equipment can be provided remotely at no cost, or in person training can be provided commensurate with travel and personnel costs, typically about $1500-2000 for a complete in-person training session.

Department Gear Retrieval and Deployment

In the event that the Department requires to independently retrieve the Alternative Gear without the assistance of the fisher, this capability is fully supported by the system. The enforcement version of Trap Timer provides access to the location, permit, vessel, and popup ID for every deployed system. In order to retrieve the gear, the enforcement vessel approaches to within acoustic range, puts the transducer in the water, activates the deck box, and then uses the app to select the target unit. The app sends the release command to the deck unit and the deck unit transmits this acoustically to the underwater release. The gear is then retrieved for inspection using traditional hauling gear. When complete, the gear is re-set using traditional methods in the same location where it was hauled from. There is no

requirement to re-mark the gear. Alternatively, the Department can retain the gear and notify the fisherman. Through the app, the Department has access to all of the release codes associated with the popup IDs in their fishery.

Interoperability

Although not specifically called for under the RAMP Alternative Gear requirements, interoperability is an important aspect of the Alternative Gear. In particular, interoperability with respect to mobile fisher and other ocean users that may interact with fixed fishing gear, and interoperability with fishers within the same fishery using other types of Alternative Gear.

Interoperability with Other Alternative Gear

Interoperability with other alternative gear will be important if gear from other manufacturers is authorized within the same fishery. The Sub Sea Sonics/Guardian system has already implemented this interoperability through a system called the rmwHUB, an interoperability capability developed and supported by the Ropeless Manufacturers Workgroup. This system is currently implemented or in the process of being implemented by the major on-demand fishing gear manufacturers. Through the rmwHub, gear from other manufacturers is visible to the fisher via the Trap Timer app. This allows for the fisher to avoid interferences that might result from the overlay of trap strings in the same area. The system does not provide any detailed information on the gear, but just displays the location. Some manufacturers provide interoperability through an alternative hub called Earth Ranger. The rmwHUB and Earth Ranger have a data sharing protocol that allows for these systems to also work together so that any manufacturer connected to either hub can see data from manufacturers connected to the other hub.

Interoperability with Mobile Fishers

Interoperability with mobile fishers (bottom draggers, trollers, etc.) is important to consider because they may be operating in the same areas and without visible surface buoys they will be unaware of the presence of fixed gear. To address this, the public version of the Trap Timer app provides these fishers with visibility of the fixed gear. This works in the same way that the app works for fishers and enforcement, however it does not allow for any operation of the gear. The public version of the app will display all of the Alternative Gear within the specified visibility radius. The visibility radius is generally established on a fishery-wide basis. In addition to the public version of Trap Timer, mobile fisher visibility is also available through the Earth Ranger Buoy App and the Earth Ranger Time Zero feature for vessels that use the Time Zero chart plotter system.

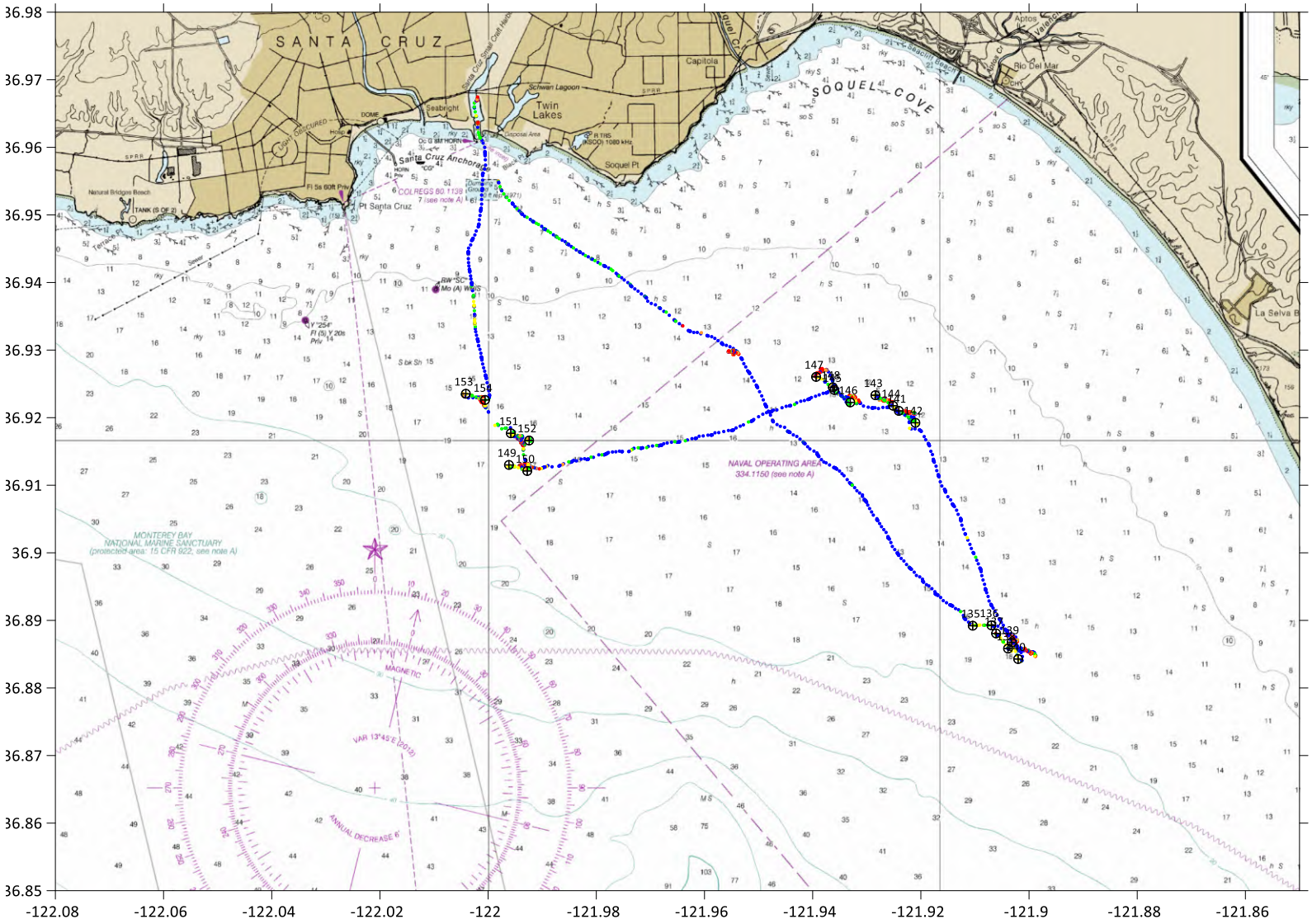

Figure 13. Map showing the overlay of trip data from the Pelagic Data Systems VTS and trap locations from the Ropeless Regulatory Portal. The combination of these data sets provides a powerful tool for enforcing the proper use of the proposed Alternative Gear.

Gear recovery plan in the event retrieval is unsuccessful

The RAMP criteria require an effective gear recovery plan in the case that gear retrieval is unsuccessful. Over multiple years of EFP testing, we have developed the following rear recovery strategy to meet this requirement.

The Alternative Gear recovery plan for the AR4RT/Guardian system incorporates three key aspects. First, the AR4RT/Guardian system is a proven, highly reliable on-demand solution that reduces the number of failures to a very small number. Second, an accurate gear marking and documentation system for lost gear built into the Trap Timer app. Lastly, a highly reliable alternate method is in place to recover gear that does not popup. The underlying system has been shown to have a reliability of ~98% under spring fishing conditions in the California Dungeness crab fishery. For the small percentage of gear that does not come up on demand, the grappling backup was also shown to be highly effective and required only 10-15 minutes of additional time to recover. In the event that both the release and the backup fail, the gear remains accurately marked using the Trap Timer app, and that the lost status is flagged in the database. This will provide a reliable search location for any subsequent gear recovery efforts under the Departments Lost or Abandoned Dungeness Crab Trap Gear Retrieval Program. Given the documented reliability of the main and backup systems, it has been demonstrated that loss rates exceed RAMP requirements of <10%, with gear loss during the EFP testing was found to be <1%.

The procedure that we have developed for recovering lost gear is as follows:

- Attempt to recover the gear from the preferred end of the gear string.
- If the initial attempt fails, retry the acoustic release command and determine if the unit is sending back a verification signal.
- If a popup is installed on the other end of the string, go to that end and attempt to haul the gear from there.
- If there is only a popup at one end, or both ends fail to popup, choose the preferred end and grapple up the gear by hooking it between the popup unit and the first trap.
- If grappling at that location is unsuccessful, attempt grappling at the other end or at other parts of the gear string.
- If unable to recover the gear by grappling, and the gear location cannot be verified acoustically, conduct a wider gear search with the acoustics
- If the gear is relocated acoustically, attempt to haul with the popup gear or follow up with grappling if that is unsuccessful.
- If all attempts to recover the gear have been exhausted, report the gear as lost to the Department and the gear manufacturer

Gear enforcement considerations

As described above, the Alternative Gear proposed here provides a range of methods to support enforcement. Because the gear is deployed in strings, the ideal approach for the Department to retrieve and deploy the gear is by having the fisher do it while they monitor. This has multiple advantages in that the enforcement vessel does not have to be modified to allow for handling strings, the fishers will be highly adept at handling the gear because they do it all the time, and the Department will not be responsible for any issues that might occur during hauling or re-setting the gear. In this case, the Department would be required to have access to the Trap Timer app, the Ropeless Regulatory Portal, and the EM dashboard in order to plan and execute enforcement actions. The use of Trap Timer in the field requires a tablet with wi-fi and cellular connection that generally costs in the range of $200-600 unless an existing tablet or phone can be used. There would be no other costs to operate enforcement in this mode. An enhancement to this would be to make sure that the enforcement vessel has continuous connectivity through a satellite link so that Trap Timer could be synchronized outside of cell range, and if desired the portal and dashboard could be used on a laptop on the vessel.

Alternatively, if the Department desires to haul and set gear themselves, the primary requirements beyond what is described above would be to also have a deck unit and transducer, and outfit the enforcement vessel to handle strings. The cost of the deck unit and transducer is $2000. The cost to outfit the enforcement vessel (if necessary) to haul strings would be vessel specific. Because the Department is already managing other fisheries that utilize strings of traps (e.g. Coonstripe shrimp, Spot prawn, Hagfish), it is expected that this will not be a major variation from current operations. As described previously, in the event that the Department requires to independently retrieve the Alternative Gear without the assistance of the fisher, this capability is fully supported by the system.

Alternative Gear Authorization

Following the spring gear trials in 2023, we compiled and submitted an alternative gear authorization request to CDFW. The Department declined to authorize this request because they believed the gear did not meet the RAMP criteria for Enforceability including the following issues:

- The trap marking software requires fishers to manually input the gear set location which could allow for fishers to set traps in closed fishing areas without detection by Department law enforcement staff; and
- The proposed gear doesn't provide a means for the Department to verify the manually entered gear set location.

To address these concerns, the Department recommended expanded testing along with the implementation of a robust electronic monitoring program and the utilization of conditional authorization limits that will be established in the upcoming RAMP 2.0 regulations.

"The Department believes that expanded testing along with the implementation of a robust electronic monitoring program (currently scheduled for the 2024-25 season) and the additional conditional authorization limits that will be established in the upcoming RAMP 2.0 regulations will address these issues."

Sub Sea Sonics/Guardian followed through with the largest full-scale testing of on demand gear ever conducted. The results show that the gear is reliable and effective and there is significant demand from the fleet to use the gear for access to the spring Dungeness crab fishery. Robust electronic monitoring will be in place for the 2025-2026 season and the new RAMP 2.0 regulations are also scheduled to be in place. On this basis, the clear next step was for the gear to be authorized under RAMP 2.0 for the 2025-2026 season.

In July of 2025 we submitted a draft Alternative Gear Authorization proposal. Throughout the summer we worked with CDFW to help establish the process for authorization and continued to refine our proposal. In September of 2025 we formally submitted our authorization proposal. Following a number of collaborative consultations with the Department, the Sub Sea Sonics/Guardian alternative gear was conditionally authorized in December of 2025 for use in the California Dungeness crab fishery. This authorization represented the culmination of our EFP goals and also the first ever alternative gear authorization in the State of California.

C. Scientific reports and documents created as a result of the authorized activities

A number of reports and documents were created as a result of the authorized EFP activities. These documents are summarized below:

- EFP Application - Testing of Pop-Up Gear in the California Dungeness Crab Fishery
- EFP Terms and Conditions – EFP T2-001 Marine Fisheries: Experimental Fishing Permit Terms and Conditions including amendments
- EFP Annual Report 2023 - Sub Sea Sonics/Guardian Popup Fishing System – 2023 EFP Testing Results
- Alternative Gear Authorization Request 2023 - Request for Alternative Gear Authorization Sub Sea Sonics/Guardian Ropeless On-Demand Fishing System
- Ropeless Consortium 2023 - Progress toward an adaptable, low-cost, on-demand fishing system
- EFP Annual Report 2024 - Sub Sea Sonics/Guardian Popup Fishing System – Spring 2024 EFP Testing Results
- Ropeless Consortium 2024 - On-demand gear innovations lead to operational viability in a large-scale fishery - California Spring Dungeness Crab
- Oceans Conference 2024 - Development and Large-Scale Testing of a Low-Cost Acoustic Release System used to Reduce Entanglement Risk in Commercial Trap Fisheries
- EFP Annual Report 2025 - Sub Sea Sonics/Guardian Popup Fishing System – Spring 2025 EFP Testing Results
- Alternative Gear Authorization Request 2025 - Request for Alternative Gear Authorization Sub Sea Sonics/Guardian Ropeless On-Demand Fishing System
- Alternative Gear Terms and Conditions 2025 - Alternative Gear General Conditions for Authorization/Sub Sea Sonics And Guardian Ropeless Systems Alternative Gear Conditional Authorization
- Ropeless Consortium 2025 - Testing of Sub Sea Sonics/Guardian ropeless gear: On-demand fishing goes wide-scale in California trawl fishery
- BREP Final Report 2026 - Implementation of On-Demand Fishing During the Spring Closure in the California Dungeness Crab Fishery

D. Key Participants

The EFP was made successful through the contributions of a wide range of people who participated in the process. Key participants are listed below.

Participating Fishers: The following fishers contributed to the success of the EFP through their willingness to try the gear, their financial investments to acquire the gear, and their contributions to improving the gear and the fishing process.

Brand Little	Justin Monckton	Ben Platt
Paddy Davis	Jacob Emerling	Richard Axelson
Greg Tanji	Dan Fugere	Nick Svedise
Matt Juanes	Steve Melz	Walter Deyerle
Barry Day	Mike Cohen	Coriann Erskine
Eion Davis	Frank Cunningham	Phil Lafata
Scott Edson	Tommy Walsh	Scott Giles
Jonathan Jackson	Khevin Mellegers	Dave Toriumi
Bob Monckton	Jasen Dennon	Joe Cullen

Development and Refinement of the Popup Fishing Gear: The following personnel contributed to the development and refinement of the gear based on input from the participating fishers and others.

Bart Chadwick

Ryan Halonen

Russ Mullins

Implementation and Execution of the EFP: The following personnel contributed to the implementation and execution of the EFP.

Bart Chadwick	Joanna Grebel
Ryan Halonen	Ryan Bartling
Russ Mullins	Lt. Tiffany Wolvek
Kim Sawicki	Assistant Chief Eric Kord
Morgan Ivens-Duran	CA Fish and Game Commission
Owen Mulvey-Mcferron	Geoff Shester
Craig Shuman	

Development and Execution of the Training Program: The following personnel contributed to the development and execution of the training program.

Bart Chadwick

Ryan Halonen

Russ Mullins

Kim Sawicki

Brand Little

Implementation and Execution of the Authorization: The following personnel contributed to the implementation and execution of the authorization.

Bart Chadwick

Ryan Halonen

Russ Mullins

Ryan Bartling

Allegra La Ferr

Joanna Grebel

Craig Shuman

Lt. Tiffany Wolvek

Assistant Chief Eric Kord

Geoff Shester

Funding Support: The following personnel assisted in identifying, securing and/or administering funding to help support the EFP effort and the participating fishers.

Bart Chadwick

Ryan Halonen

Russ Mullins

Kim Sawicki

Geoff Shester

Francine Kershaw

Marie Hemsley

Justin Pearce

Jenn Eckerle

Michael Moore

Outside Technical Review: The following personnel provided outside technical review during the development and execution of the EFP

Dan Lawson

Fran Recht

Outlook

Gray fox synthesis report publishing today — for Commission awareness

From AnMarie Rodgers
Date Tue 05/05/2026 09:03 AM
To FGC <FGC@fgc.ca.gov>
Cc Greg Kerekes

Dear Melissa and Commission Members,

The Urban Wildlife Research Project is publishing a synthesis report today, Tuesday, May 5, that we wanted to bring to the Commission's attention.

Status, Signals & Data Gaps: The California Gray Fox documents what may be the first comprehensive statewide assessment of California's gray fox status in forty years. The report's core finding: California currently lacks the monitoring infrastructure to know whether gray fox populations are healthy or declining. The last systematic statewide assessment was conducted in 1984, when the species was still managed as a fur resource.

The report is explicitly non-advocacy — it documents the monitoring gap and identifies proportionate first steps toward closing it, without making regulatory or legislative recommendations. It does note that SB 1135, the California Wildlife Coexistence Act, currently before the Senate Appropriations Committee, represents a potential legislative opening for the kind of species-level mortality reporting that gray fox currently lacks.

Given the Commission's regulatory authority over furbearer seasons and its role in commissioning species assessments — as it did for bobcat — we thought this report might be of interest to Commission members and staff.

The full report is available at urbanwildliferesearchproject.org/gray-fox-status-inquiry/. The press release is attached.

Greg Kerekes, UWRP Co-Founder and Executive Director, is copied here and is our primary point of contact.

With appreciation,

AnMarie Rodgers
Board Member, Urban Wildlife Research Project
https://urbanwildliferesearchproject.org/gray-fox-status-inquiry/
ARodgers.uwrp@gmail.com

FOR IMMEDIATE RELEASE

May 5, 2026

Contact: Greg Kerekes, Executive Director
Urban Wildlife Research Project
greg.uwrp@gmail.com
www.urbanwildliferesearchproject.org

BAY AREA NONPROFIT PUBLISHES FIRST STATEWIDE GRAY FOX SYNTHESIS IN FORTY YEARS

A Species Without a Scorecard

PALO ALTO, CA — A Bay Area nonprofit has published what may be the first comprehensive synthesis of the California gray fox's status in more than forty years — and the findings raise serious questions about a species that has largely escaped scientific and regulatory attention.

Status, Signals & Data Gaps: The California Gray Fox, released today by the Urban Wildlife Research Project (UWRP), draws on six months of original researcher outreach, published scientific literature, and fifteen years of field observation at the Palo Alto Baylands Preserve. The report concludes that California currently lacks the monitoring infrastructure to know whether the gray fox population is healthy and thriving — or stressed and declining.

The report arrives as California legislators consider SB 1135, the California Wildlife Coexistence Act, which passed the Senate Natural Resources and Water Committee in April 2026 and is currently before the Senate Appropriations Committee. If enacted and funded, the bill would establish a Wildlife Coexistence Program and Technical Advisory Committee that could create a framework for the kind of species-level mortality reporting that currently does not exist for gray fox. (Full bill text: https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202520260SB1135)

"The last systematic statewide assessment of California's gray fox was conducted in 1984," said AnMarie Rodgers, the report's lead author and a UWRP board member. "In the intervening forty years, the species has moved from being managed as a fur resource to being essentially unmanaged — present in the landscape, but absent from any monitoring framework."

The report was catalyzed by findings from the Midwest, where rigorous studies in Iowa, Indiana, Ohio, and Illinois have documented sharp gray fox declines over the past two to three decades. In 2025, Illinois closed its gray fox hunting season indefinitely. California has no comparable data.

The report synthesizes observations from more than a dozen researchers, agency staff, and conservation practitioners, including wildlife geneticists, urban carnivore ecologists, and field biologists working across the state. It identifies canine distemper, habitat fragmentation, structural simplification of shrublands, and road mortality as recognized pressures — none of which have been assessed at a population scale in California.

UWRP's own fifteen-year field record at the Palo Alto Baylands anchors the report's central concern. In 2016, canine distemper eliminated the preserve's entire gray fox population — approximately 25 animals documented by founder and field researcher Bill Leikam. Nearly a decade later, the population has not recolonized. The creeks and riparian corridors that once connected the Baylands to surrounding fox populations have been fragmented by roads, culverts, and urban development.

That absence has not gone unnoticed by the next generation of wildlife watchers. Milo, a 12-year-old founding member of UWRP's Kit Club — a youth wildlife monitoring program named for baby gray foxes — recently spotted and named a gray fox along Matadero Creek near the Baylands. He called the fox Barron.

"I've been tracking gray foxes in our neighborhood for a few years now," said Milo. "What's really cool is that neighbors help too. People send me videos when they spot one. It's become an exciting part of living in Barron Park. Gray foxes are an important part of our ecosystem and community."

The report is framed explicitly as a non-advocacy synthesis for professional audiences — scientists, government officials, and conservation practitioners — and closes with an invitation to researchers and agencies to begin building the coordinated monitoring effort California currently lacks.

"Our beloved bush dog is an understudied species," UWRP Executive Director Greg Kerekes said. "With this paper we hope to start the conversation about the conservation status of the California gray fox, so we may begin to understand the health of their populations regionally and statewide."

Status, Signals & Data Gaps: The California Gray Fox is available at urbanwildliferesearchproject.org/gray-fox-status-inquiry/.

About the Urban Wildlife Research Project

The Urban Wildlife Research Project is a 501(c)(3) nonprofit based in the San Francisco Bay Area. Co-founded by field researchers Bill Leikam and Greg Kerekes, UWRP has conducted long-term gray fox behavioral research at the Palo Alto Baylands Preserve since 2009. Its work spans field observation, citizen science, and policy research at the intersection of urban wildlife and habitat connectivity.

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Urban Wildlife Research Project

Status, Signals & Data Gaps:

The California Gray Fox

A synthesis of researcher outreach, published literature, and fifteen years of field observation at the Palo Alto Baylands Preserve

May 5, 2026

Contents

I

Introduction

The Urban Wildlife Research Project (UWRP) set out to describe what is currently known — and not known — about the status of the gray fox (*Urocyon cinereoargenteus*) in California, and to identify where meaningful data gaps exist as of spring 2026.

UWRP asserts that California currently lacks the monitoring infrastructure to know whether the gray fox populations are healthy and thriving or stressed and declining.

The immediate catalyst for this inquiry was a body of recent research and action from the Midwest. Across Iowa, Indiana, Ohio, and Illinois, rigorous studies involving collared animals, camera surveys, disease testing, and long-term harvest data have documented sharp gray fox declines over the past two to three decades. Canine distemper has emerged as a primary documented mortality driver. Habitat simplification — the loss of brushy fencerows, woodland understory, and edge structure — has reduced the cover gray foxes depend on. Coyote pressure, while regionally variable, appears to compound these effects, particularly where dense shrub cover has been lost.

Those findings prompted a straightforward question: does California have comparable data? The answer, based on conversations with more than a dozen researchers, agency staff, and conservation practitioners, is no. Not yet. What California has instead are localized observations, fragmented datasets, and a monitoring gap stretching back more than forty years. That gap is itself a finding worth documenting.

UWRP has conducted long-term gray fox research at the Palo Alto Baylands Preserve for more than fifteen years. Our own observations — including a complete population collapse in 2016 and the failure of that population to recolonize nearly a decade later — raise questions we cannot answer from a single site. This inquiry was an attempt to understand whether others are asking the same questions, and what tools exist to begin answering them.

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II

A Species Without a Scorecard

The charismatic, tree-climbing gray fox is California's most widely distributed native fox, occupying a broad range of habitats from coastal scrub and oak woodland to urban edges and riparian corridors. It is not listed as threatened or endangered. Gray fox are classified as a furbearing mammal under California law — neither a game species with active population management objectives nor a species listed under the California Endangered Species Act. A regulated hunting season exists, but hunters face no mandatory harvest reporting requirement. It is not a focal species in any current statewide monitoring program.

That institutional invisibility has a practical consequence: California has not conducted a systematic statewide assessment of gray fox populations since 1984, when the species was still managed primarily as a fur resource. (For a more detailed discussion of California data, see Appendix A: California's Gray Fox Data Record). That study examined harvest data and age structure across 29 counties, grouped into eleven regional populations.[i] It found healthy populations under harvest rates that in some areas exceeded 20% of the estimated local population. It did not include any geographic unit representing the San Francisco Bay region or the Palo Alto Baylands. In the four decades since, trapping has nearly disappeared as a management activity, but no monitoring framework has replaced it.

The California Department of Fish and Wildlife (CDFW) monitors game species and those listed under the California Endangered Species Act. Gray fox fall into neither category. As a CDFW spokesperson confirmed the department does not actively track gray fox populations statewide.[ii] [iii] The species exists in an institutional gap — present enough to be taken for granted, unmonitored enough to be invisible.

This is not a failure of attention or will. California's wildlife agencies operate under chronic resource constraints, managing an extraordinarily diverse and geographically complex state with monitoring obligations that far exceed available capacity. Non-listed, non-game species like the gray fox fall naturally to the bottom of an already overwhelming priority list. Understanding that structural reality is essential context for any conversation about how the gap might be addressed — and for identifying where partners outside government can most usefully contribute.

Dr. Justin Brashares, the G.R. & W.M. Goertz Professor of Environmental Science, Policy and Management at UC Berkeley, identified what may be the central framing problem.

> *"Gray foxes are assumed to be widespread and abundant — but those are not the same thing, and we're conflating them. Widespread describes where a species can occur across the landscape. Abundance describes how many animals are actually there. One tells you about habitat potential. The other tells you about population health. For gray fox in California, we have a reasonable picture of the first and almost no picture of the second."*
>
> — Dr. Justin Brashares, Professor *and G.R. & W.M. Goertz Chair*, UC Berkeley

That distinction matters because abundance — not just presence — is what population health assessments require. A species can persist across a wide geographic range while declining sharply in actual numbers, and standard detection methods may not reveal that decline until it is well advanced.

The bobcat offers an instructive parallel. Long assumed to be stable and common across California, bobcats attracted serious scientific and policy attention only after sustained advocacy prompted the California Fish and Game Commission to mandate a statewide bobcat management plan and fund the research to support it.[iv] That multi-year effort — still ongoing — demonstrated that a non-listed, widely distributed species can move from assumed stability to systematic study when the case for monitoring is made clearly and the right institutional partnerships are in place. Gray fox have not yet had their bobcat moment. Whether they need one — and how urgently — is precisely what this inquiry was designed to begin examining.

III

What the Midwest Is Teaching Us

The gray fox decline documented across the Midwest did not emerge from a single study or a single state. It converged — independently, across multiple research teams, using different methods, over different timeframes — toward a remarkably consistent set of findings. Understanding how that happened, and what it found, is useful context for California.

The Studies: Precipitous Decline

Beginning in 2020, Indiana became the first of four states to launch a formal gray fox study, partnering the Indiana Department of Natural Resources with Luther College and the Wildlife Ecology Institute.[v] Researchers collared 26 foxes, achieving an annual survival rate of approximately 68%. Of 13 documented deaths, the majority were attributable to canine distemper, with vehicle collisions as the second leading cause. Notably, genetic diversity among Indiana's foxes appeared good — suggesting the decline was not primarily a genetic bottleneck story, at least not yet.

Iowa followed, with the Iowa Department of Natural Resources partnering with the Iowa Wildlife Federation on a collaring program that began in 2022.[vi] The program struggled initially — three years passed with almost no captures despite a $400 bounty for live animals and active public recruitment. Iowa's harvest records tell their own story: for the first time since record-keeping began in 1930, no gray fox pelts were reported during the 2023 fur harvesting season. In recent years, fewer than ten individuals have been confirmed statewide.[vii]

In Illinois, a camera-based occupancy study compared detection rates from 2008–10 with those from 2022–23.[viii] The results were stark. Naïve occupancy — the simple rate at which cameras detected gray fox — dropped from 20% of sites to just 6%. The best-fitting occupancy model predicted an overall decline of roughly four-fold across 99% of the study area over that period.[ix] The authors concluded that gray fox numbers in the Midwest have suffered a “precipitous decline” substantially and that the situation warrants urgent conservation attention.

Ohio's work, conducted through the Ohio Coyote Project in partnership with Ohio State University, began collaring foxes in 2020 and has been examining the relationship between coyote presence and gray fox persistence — a question that lingers.

What the Data Show

Across these studies, three factors emerge consistently as drivers of decline, though their relative importance varies by region and remains incompletely understood.

Canine distemper is the most clearly documented mortality cause. More than other canids, gray foxes appear to have little immunological buffer against the disease — field researchers describe animals as either naïve (unexposed) to distemper or dead from it, with little evidence of survivors carrying protective antibodies. The raccoon population, which has expanded dramatically across the Midwest over the same period, is widely suspected as a reservoir amplifying transmission. As Iowa DNR veterinarian Dr. Rachel Ruden has noted, canine distemper is not the only species that can carry and shed the virus — infected coyotes, raccoons, skunks, and unvaccinated domestic animals all contribute to its circulation.[x]

Habitat simplification is the second recurring theme. Historically, gray fox in the Midwest occupied woodlands with dense understory. Following European settlement, old farmsteads and brushy fencerows continued to provide shrubby and dense cover. Decades of agricultural consolidation have removed much of that structure — farmsteads cleared, fencerows eliminated, maturing woodlands thinned and became isolated. The result is a landscape with fewer of the edge and refuge habitats that gray fox depend on. Harvest data reflect this: the all-time peak Iowa harvest of 3,093 gray fox in the 1979–80 season has given way to single digits and then zero.[5]

Competition in the form of coyote pressure is the third factor, though its role is regionally variable and mechanistically complex. Research in North Carolina found that gray fox in rural areas used the same sites as coyotes at roughly the same times — but only where sufficient tree cover existed.[xi] Without it, gray fox avoided recently coyote-used areas or shifted to later nocturnal activity. As that study's lead author noted, habitat structure and coyote pressure likely interact, rather than operating independently. While coyote effects appeared in Illinois, in Iowa and Indiana direct predation was not detected as a primary driver.

Dr. Dawn Reding, a wildlife geneticist at Luther College whose laboratory led the disease and genetics work for the Indiana study, offered a framing that runs through all of these findings:

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> *"It's likely multiple interacting syndromes, not a single driver — and regional variation is significant. Iowa is not Indiana is not the Carolinas."*
>
> — Dr. Dawn Reding, Professor, Luther College

From Data to Action

What distinguished the Midwest response was not just the quality of the science but the institutional pathway it created. In Illinois, the confluence of published occupancy data, long-term hunter and archer survey trends, and broad stakeholder engagement produced both scientific consensus and the political will to act.

Stan McTaggart, furbearer biologist with the Illinois Department of Natural Resources, emphasized that the outcome depended as much on relationships as on data. Hunters and trappers had been observing gray fox declines for decades before formal studies confirmed them — their long-term, field-level knowledge was an asset, not an obstacle. Building trust with those communities early, and treating their observations as scientifically meaningful, helped create the stakeholder agreement that made administrative action possible. The Illinois experience suggests that gray fox conservation is not a story of science dictating practice — it is a story of science and practice arriving at the same conclusion together.

That process — data first, stakeholders early, policy last — culminated in the passage of HB 3760, which established a designated gray fox hunting season in Illinois and gave the state's wildlife director authority to adjust its length based on population data.[xii] The director used that authority to close the season indefinitely, until the species recovers. It is one of the strongest precautionary actions taken by any state for a non-listed species in recent memory, and a notable one given the current political climate around wildlife regulation.

Ryan Smith, Executive Director of the Iowa Wildlife Federation and a partner in Iowa's gray fox collaring program, drew a broader lesson from the Midwest experience. Coalition breadth matters, he emphasized — engaging across the political spectrum, and across sectors including educators, scientists, agricultural interests, and conservation organizations, produces durability that narrower coalitions cannot. Gray fox, as a charismatic, native species with an unusually engaging ability — tree-climbing— are well suited to building the kind of broad public engagement that sustains coalitions. He cautioned, however, against letting advocacy outpace knowledge. "Be conservative in public claims. Don't overstate certainty. Less is more."

IV

California: Signals Without Synthesis

If the Midwest story is one of data leading to action, California's gray fox story is one of signals that have never been assembled into a picture. The signals exist. Researchers have noticed them, field biologists have documented them, and agency staff have acknowledged them — often in the same breath as acknowledging that no system exists to connect them. What follows is not a population assessment. It is an inventory of what is known, where it came from, and what it cannot tell us.

Gray fox family group, Palo Alto Baylands, 2014. Photo: Bill Leikam / The Fox Guy.

A Baseline That Never Was

The most recent statewide assessment of California's gray fox population was conducted in 1984, when the species was still managed primarily as a fur resource[xiii]. That study examined harvest data and age structure across 29 counties, grouped into eleven regional populations. It found healthy populations under harvest rates that in some areas exceeded 20% of the estimated local population. It did not include any geographic unit representing the San Francisco Bay region or the Palo Alto Baylands. In the four decades since, trapping has nearly disappeared as a management activity, but no monitoring framework has replaced it.

As a CDFW spokesperson confirmed in 2025, the department "does not study or monitor" gray fox populations[xiv]. The species exists in an institutional gap — present enough to be taken for granted, unmonitored enough to be invisible.

Dr. Ben Sacks, a wildlife geneticist at the UC Davis Mammalian Ecology and Conservation Unit whose laboratory has conducted foundational genomic work on California's fox species, offered an important caution about importing Midwest findings to California. Research by Dr. Sophie Preckler-Quisquater, Dr. Sacks, and colleagues confirmed that California gray foxes belong to the western gray fox lineage, which diverged from the eastern lineage approximately one million years

ago — a genetic separation far deeper than their outward similarity suggests, and as deep as that between recognized sister species.[xv] To put that timeframe in perspective, the gray fox as a species is believed to be about 10 million years old and has been called a "living fossil" because the species has remained unchanged for so long. In comparison, modern wolves are believed to have evolved 300,000 years ago and dire wolves, saber tooth cats and the woolly mammoth all went extinct about 10,000 years ago, a fraction of the time since eastern and western gray fox diverged.

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> *"California questions have to stand on California data. These are not the same animals."*
>
> — Dr. Ben Sacks, Professor and Director of the Mammalian Ecology and Conservation Unit , UC Berkeley

That divergence does not mean California gray foxes are immune to the pressures documented in the Midwest. Canine distemper susceptibility appears to recur across lineages — it is one of the few threads that crosses regional boundaries. But it does mean that Midwest population trends cannot be directly extrapolated westward, and that California's monitoring gap represents a genuine scientific problem, not merely an administrative one.

The Baylands: A Case Study in Local Collapse

UWRP's research site at the Palo Alto Baylands Preserve offers the most detailed long-term gray fox dataset in the Bay Area — and its story is cautionary. Bill Leikam, UWRP's founder, began documenting gray fox behavior at the Baylands in 2010 and over subsequent years came to know four skulks, approximately 17 individuals, well enough to name them. In hindsight, he observed early warning signs — eye discharge, unusual behavior in cubs, signs of inbreeding including floppy ears — before the collapse became apparent.

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> *"It was like a black wind swept through the area and infected all of them," Leikam said. "They're all gone now."*
>
> — Bill Leikam, "The Fox Guy" Co-Founder and Board President , Urban Wildlife Research Project

State wildlife veterinarian Dr. Deana Clifford confirmed canine distemper as the cause, describing the scale as "unfortunately very typical of a localized outbreak" that can "dramatically reduce the number of animals in an area and even make it seem like they've disappeared altogether for a while."[xvi] All told, 17 carcasses were recovered by year's end. All 25 foxes documented by UWRP across four social groups were gone.[xvii]

What has followed is nearly as striking as the collapse itself. Nearly a decade later, gray foxes have not recolonized the Baylands Preserve. The site that once supported 25 individually documented animals across four social groups remains largely unoccupied. Whether this reflects ongoing disease pressure, corridor fragmentation preventing recolonization, coyote competition, or some combination of these factors is not known. No systematic monitoring has been conducted at the site since the collapse.

David Johns of the Wildlands Network, commenting at the time of the die-off, identified the underlying vulnerability directly: "You have this small population, they're often very genetically similar, and very easy to wipe out if they are susceptible. That's why connectivity is so important — it's a reach for these foxes to find other populations that are bigger and wilder and that might bring in some new genes.[xviii]"

Disappearances Without Documentation

The Baylands collapse is the best-documented local event, but it is not the only one. Laurel Serieys, a wildlife ecologist working under the auspices of the National Park Service, documented approximately 50 gray fox captures in Malibu Creek and Topanga State Parks in the Santa Monica Mountains between 2008 and 2010. Individual markings in gray fox can be too subtle for camera identification, making the number of unique individuals among those captures unknown. The volume of captures across routinely moved traps, however, suggests high local abundance at that time. When she returned to a site near San Jose in 2017–18 planning to collar ten gray foxes, she found almost none — catching only one animal at a nearby site. Foxes that had been present on camera in the study area a few years earlier were no longer detectable. Disease was posited as a possible explanation, but this was speculation rather than a confirmed finding. The event generated no formal report, no agency response, and no entry into any statewide record. This pattern — local collapse, short timeframe, prior presence confirmed, disappearance unrecorded — is precisely what a monitoring gap looks like from the inside. Something can happen locally, quickly, and quietly, without triggering statewide awareness. Whether the Baylands and the San Jose site represent isolated events or early signals of a broader pattern is, at present, unknowable.

What Current, Localized Monitoring Can and Cannot Say

Several research programs operating in the Bay Area and Southern California detect gray foxes incidentally — as one species among many in camera grids designed primarily for other purposes. Their findings are informative, but they share common limitations.

A research program at the University of California, Berkeley has operated approximately 100 cameras across the East Bay and San Francisco since 2022, primarily designed to study urban carnivore dynamics. Gray fox detections from this ongoing, unpublished work by the UCB Schell Lab are described as preliminary and infrequent — appearing more commonly in hill areas than along shoreline in the East Bay and sporadically throughout San Francisco, based on early and incomplete analysis. No population estimates or trend analyses are available yet from this dataset[xix].

In Southern California, Dr. Niamh Quinn, a UC Cooperative Extension advisor whose laboratory tracks urban coyotes across Los Angeles, reports that gray fox rarely appear in her data. In years of coyote trapping, her team has captured only one gray fox — in the foothills of northern Los Angeles County near Glendora. Her general impression is that gray fox are not present in Southern California in meaningful numbers, though she notes this warrants further investigation.

The most structured regional monitoring effort identified in this inquiry is NatureCheck[xx], a formal ecological health assessment published in 2022 by the East Bay Stewardship Network — a partnership of five public agencies managing nearly 225,000 acres, roughly 25 percent of land in Alameda and Contra Costa Counties. Through NatureCheck, gray fox is designated as a formal indicator species for the region, with a published baseline and a commitment to repeat assessment on a regular cycle, with an update anticipated by the end of 2026. That designation matters: it means gray fox status in the East Bay is now tracked intentionally, not simply noticed.

What NatureCheck can and cannot yet tell us about gray fox reflects the program's current stage. The camera data underlying the mesocarnivore assessment were drawn from studies designed primarily for other purposes — carnivore research and kit fox monitoring — and processed as binary presence or absence per park unit rather than as population data. Two limitations follow from this. First, cameras cannot distinguish individual animals: a series of detections may represent many foxes or one fox many times, making it impossible to estimate how many animals actually use an area. Second, the methods were not designed to support population estimation, which requires either mark-recapture protocols, structured occupancy modeling with defined sampling effort, or distance/transect sampling — none of which the current dataset provides. The program acknowledges both constraints directly. What the data do show is worth noting. Gray fox was

detected in all three subregions of the NatureCheck area of focus. In the East Bay Hills and Mt. Hamilton subregions, detection rates met the threshold for "Good" condition. In the Mt. Diablo Range, detection in only three of nine monitored lands produced a "Caution" rating — a finding that warrants follow-up to determine whether it reflects genuine low presence or gaps in monitoring coverage. Reproductive confirmation remains unknown across all subregions as evidence of cubs or family groups was not documented in the underlying camera data.

Beyond the new data, NatureCheck is nonetheless notable for what its partnership structure makes possible. Five agencies sharing a standardized indicator framework across a quarter of two Bay Area counties represents monitoring infrastructure that most of California lacks entirely for this species. Whether that infrastructure could be connected to broader regional efforts, including the Urban Wildlife Information Network's standardized occupancy transects, remains an open question that this inquiry was not able to resolve.

Taken together, these datasets confirm presence. They cannot confirm abundance, trend, or reproductive health. The data that exist were not designed to answer the questions that now matter most.

The Detectability Problem

One reason California's monitoring gap is particularly consequential is that standard detection methods may systematically misread gray fox presence — producing unreliable data in either direction. Cameras may undercount foxes that are present but behaviorally suppressed, making it impossible to distinguish a stressed but present population from a genuinely absent one.

Dr. Madeleine Zuercher, whose dissertation research examined gray fox behavior in wildland parks in Los Angeles and Ventura Counties, found that domestic dog presence strongly suppressed gray fox investigative behavior — animals appeared to be more cautious and were less likely to consume bait or investigate surroundings when dog scent was present. A preliminary analysis of camera data by Luke Benson found that in one high dog-use park, gray fox activity shifted from primarily nocturnal to crepuscular on weekends, clustering at dawn and dusk when human and dog activity was lower.[xxi] As Zuercher notes, this means apparent absence from detection should not be confused with actual absence of the species: "Behavioral suppression is not the same as absence. The system may be stressed in ways our tools are not designed to detect."

This detectability problem compounds the monitoring gap. Not only does California lack a baseline, but the methods most commonly used to establish one may also produce unreliable readings under the very conditions most likely to stress gray fox populations.

V

Recognized Pressures, Unquantified Effects

California does not lack hypotheses about what threatens gray foxes. Across every conversation UWRP conducted during this inquiry — with academic researchers, agency staff, field biologists, and conservation practitioners — the same pressures recurred with remarkable consistency. What is missing is not awareness of these pressures. It is any systematic effort to measure their effects on gray fox at a population scale in California.

Disease: Canine Distemper

Disease, especially Canine distemper virus, is the most consistently documented mortality cause across every region where gray fox have been studied carefully. The Baylands collapse of 2016 was confirmed as distemper by CDFW. Laurel Serieys documented a disappearance near San Jose — but that documentation existed only in field records. Such events generate no formal agency reports, no official response, and no entry into any statewide record. East Bay gray fox populations may have increased during 2018, when residents documented elevated sightings particularly in urban Berkeley and the flatlands near the Ohlone Greenway. Local reporting at the time noted foxes venturing into neighborhoods in unusual numbers, with experts suggesting juvenile dispersal and dry conditions as possible explanations for increased urban movement.[xxii] In the Midwest, distemper accounted for the majority of documented deaths in both the Indiana and Iowa studies.

Gray foxes appear to have an unusually limited immunological response to the virus. Research from the Midwest describes foxes as either naïve to distemper or dead from it, with little evidence of survivors carrying protective antibodies. When the virus enters a gray fox population it can move through it rapidly and completely, as the Baylands event demonstrated.

The raccoon population is widely implicated as a reservoir amplifying transmission. Raccoon numbers have expanded substantially across California's urban and suburban landscapes, increasing the frequency of interspecies contact at food sources, water features, and denning areas. Infected raccoons, coyotes, skunks, and unvaccinated domestic animals all shed the virus through respiratory droplets, saliva, urine, and feces. In fragmented urban landscapes where multiple species concentrate around anthropogenic food subsidies, the conditions for transmission are consistently present.

California has no statewide system for tracking canine distemper mortality in gray foxes. Carcasses are sometimes submitted to CDFW's Wildlife Investigations Lab, and individual die-off events have been confirmed. But these records are not aggregated, not publicly synthesized, and not connected to any population monitoring framework. Disease events that do not generate public attention or a formal carcass submission go entirely unrecorded.

Habitat Fragmentation and Structural Simplification

Habitat loss is commonly understood as the conversion of natural land to developed uses. For gray foxes, the more consequential threat may be subtler: the structural simplification of habitat that remains.

Gray foxes, as climbers, are structurally dependent animals. Research in California's chaparral systems has found high fox densities in areas dominated by dense shrubs and manzanita — habitat that allows foxes to move agilely, escape coyotes, and exploit their unusual capacity for semi-

arboreal movement. When that structure is disturbed — through shrub removal, thinning, vineyard conversion, or development — foxes lose not just cover but the functional refuge that allows them to persist alongside larger predators. As Dr. Justin Brashares has characterized it, structural simplification, not land use change per se, is the core habitat concern for gray fox in California.

Fragmentation compounds this problem in a second, equally important way. Isolated populations cannot recover from local collapse. The Baylands event illustrates this directly: nearly a decade after distemper eliminated the local population, gray foxes have not recolonized the preserve. Even though the preserve itself remains, the creeks and riparian corridors that historically connected mountain populations to baylands habitats have been channelized, culverted, and interrupted by roads and urban development. Even where gray foxes persist in surrounding areas, the pathways that would allow dispersing animals to reach and reestablish at the Baylands are compromised.

Roads represent a particularly acute barrier. Gray foxes are large enough to range widely but face serious mortality risk crossing California's heavily trafficked roads and freeways — infrastructure that was not designed with their movement in mind and that wildlife crossing programs have not yet systematically addressed.

The genetic consequences of long-term fragmentation are an additional concern. Dr. Dawn Reding, whose laboratory work spanned the Iowa and Indiana studies, noted that eastern gray fox populations show lower genetic diversity than western populations — and raised the possibility that reduced diversity may increase disease vulnerability, even if genetics alone do not fully explain distemper susceptibility. Research by Sacks and colleagues examined population structure and genetic diversity of gray foxes across California and the adjacent Desert ecoregion, finding that California populations belong to the broader western lineage — which extends from California to Texas — and showing relatively continuous gene flow within the state, with northern California populations reflecting particularly ancient and stable ancestry. Whether current habitat fragmentation is affecting that connectivity, or whether localized disease epizootics pose cumulative regional risk, has not been assessed at a population scale[xxiii]. Whether fragmentation is producing genetic bottlenecks in some California gray fox populations is not currently known, because no one has looked.

Competitive Pressures: An Understudied Dynamic

The relationship between gray foxes and other canids in California — both wild and domestic — is recognized as potentially significant, but remains one of the least documented pressures in this inquiry. What the available evidence supports is not a simple story of predation or displacement, but a more complex picture of behavioral stress, habitat dependence, and regional variation that California has not yet begun to systematically study.

Among wild canids, the North Carolina occupancy study offers the most rigorously documented finding: gray foxes and coyotes use the same sites at roughly the same times in rural areas, but only where sufficient tree cover exists.[xxiv] Without it, gray foxes avoided recently coyote-used areas or shifted to later nocturnal activity. The study's authors concluded that habitat structure and coyote presence likely interact, rather than operating independently — a finding that resonates with California's increasingly fragmented chaparral and riparian landscapes.

Dr. Justin Brashares, drawing on long-term field experience in Sonoma and Mendocino counties, identifies coyote pressure as one of two significant threats to gray foxes in California, alongside canine distemper, and emphasizes that the two likely interact. Where chaparral structure is intact, gray foxes can exploit dense cover and their semi-arboreal agility to largely avoid coyotes. Where that structure has been simplified or fragmented, that refuge disappears.

Dr. Niamh Quinn, whose laboratory tracks urban coyotes across Los Angeles, offered a direct but carefully qualified assessment: even where direct predation is not occurring, some competition between coyotes and gray foxes is likely. Coyotes are among the most adaptable mammals on the

continent — where food is available, they will be present. But she stopped well short of identifying coyotes as a primary driver of gray fox decline in California, noting that the question warrants more targeted investigation.

Notably, the four Midwest studies — which offer the most rigorous population-level data available for this species — found that direct coyote predation was not detected as a primary mortality driver in either Iowa or Indiana, though coyote effects appeared more pronounced in Illinois where habitat simplification was more advanced.

In California, the most directly documented canid pressure on gray fox behavior comes not from coyotes but from domestic dogs. Dr. Madeleine Zuercher's research in wildland parks in Los Angeles and Ventura Counties found that dog presence strongly suppressed gray fox investigative behavior — animals appeared more cautious and were less likely to consume food sources when dog scent was present. This behavioral suppression — distinct from displacement or predation — represents a chronic stressor whose population-level effects have not been assessed.

Whether competition for prey between gray foxes and other mesocarnivores contributes to population stress in California is an additional question that none of the researchers consulted in this inquiry were able to address from data. It remains an open and understudied thread.

A mystery — because the data do not exist — is how these competitive pressures combine, interact, or compare in magnitude to disease and habitat loss in the California complex. That absence is itself part of the monitoring gap this report documents.

Rodenticides: A Threat Reduced, Not Eliminated

California has taken stronger action on anticoagulant rodenticides than any other state in the country — and the gray fox, as an urban and peri-urban carnivore in the same food web as the mountain lions and bobcats that drove legislative attention, is an incidental beneficiary. Beginning with AB 1788 in 2020, and completed with AB 2552 in 2024, California has progressively banned most uses of both first and second-generation anticoagulant rodenticides statewide, with exemptions for agriculture and public health.[xxv] The legislation was catalyzed by documented exposure rates of 80–90% in tested mountain lions, bobcats, and raptors — a body of evidence built over years by CDFW, the National Park Service, and university researchers, and advanced by sustained NGO advocacy.

Whether these regulatory changes have meaningfully reduced rodenticide exposure in gray foxes specifically is not known, because gray foxes were not among the focal species in the monitoring that drove the legislation, and no targeted post-regulation assessment has been conducted for this species. Dr. Justin Brashares has noted that sublethal exposure and ecological stress effects may persist even as acute mortality from the most toxic compounds declines. Researchers at Ohio State University are now examining rodenticide exposure alongside disease as possible interacting contributors to gray fox mortality in the Midwest — a methodological approach worth tracking as California's own regulatory changes mature.

California's rodenticide legislation represents a meaningful model: sustained monitoring of a recognizable flagship species — the mountain lion — combined with NGO advocacy and legislative will, produced the strongest statewide anticoagulant restrictions in the nation. It is worth asking whether gray fox could serve a similar catalytic role for the monitoring infrastructure they currently lack.

The Synthesis Gap

What is striking about this inventory of pressures is not that they are unknown. It is that they are known individually, in isolation, without any framework connecting them across California's landscapes. Canine distemper events are confirmed locally but never aggregated. Habitat fragmentation is documented at specific sites but never assessed for its cumulative effect on gray fox

connectivity. Coyote and domestic dog dynamics are studied intensively in some regions and not at all in others. Genetic health has not been assessed at a population scale. Rodenticide exposure has not been measured in gray foxes directly.

Right now, California does not have that data. What it has are fragments — locally meaningful, regionally disconnected, and collectively insufficient to determine whether the pressures documented here are producing population-level effects. That is the condition this inquiry was designed to document.

VI

What Would It Take to Know More

The preceding sections document a monitoring gap, not a management crisis — at least not yet. But the Midwest experience suggests that by the time a crisis is visible, the window for precautionary action has already closed. What follows is not a prescriptive research agenda. It is a synthesis of what this inquiry found to be the most promising and proportionate first steps toward closing California's gray fox knowledge gap.

Know What Already Exists

Before new data collection begins, a clearer picture of what already exists would itself be valuable. Several datasets of direct relevance to California gray fox status have already been identified through this inquiry. The Brashares Lab at UC Berkeley has operated a continuous camera grid at the Hopland Research and Extension Center in Mendocino County since 2016, generating more than 500,000 images across oak woodland savanna habitat — including gray fox detections spanning multiple years before and after the 2018 Mendocino Complex Fire[xxvi]. That dataset represents one of the most sustained California gray fox camera records currently known to exist, from a site characterized by high gray fox densities in intact chaparral structure. Camera programs in the East Bay, behavioral studies in Southern California, carnivore monitoring in the North Bay and Santa Monica Mountains, and long-term field observations at the Palo Alto Baylands each contribute additional fragments of the picture. These are the datasets this inquiry was able to identify. There are likely others — held by university researchers, county agencies, tribal wildlife programs, and private land managers — that have never been surfaced in a shared context.

A focused data-holders convening — a working session among researchers and agency staff who hold relevant datasets, designed to clarify what exists, in what form, and where the most consequential gaps lie — would be a productive and proportionate first step. Its output, a knowledge inventory, would build a shared understanding of the California gray fox data landscape that currently does not exist and be a basis for deciding what monitoring investments would be most useful.

The Urban Wildlife Information Network (UWIN) offers a complementary opportunity. UWIN operates standardized wildlife transects across urban-to-wildland gradients at sites across the country, generating comparable occupancy data that could support population modeling far more analytically powerful than incidental detections alone. Whether existing UWIN transect data include sufficient gray fox detections, and whether data sharing protocols would permit their use, are questions worth pursuing. Connecting local California observations to a national standardized dataset could give this work analytical reach that no single site study could achieve independently.

Disease and Mortality Surveillance

Better visibility into disease events is a second priority. California's Wildlife Investigations Lab receives carcass submissions and has confirmed canine distemper in gray foxes on multiple occasions. But submissions are opportunistic, records are not aggregated publicly, and there is no mechanism connecting individual mortality events into a regional disease picture.

The most immediate step would be determining what necropsy and disease records already exist within CDFW — whether those records are accessible, and whether they reveal any temporal or geographic patterns in gray fox mortality. This is a data retrieval question before it is a research question. It requires no new fieldwork, no new funding, and no new institutional commitments. It requires only the will to ask.

A pending bill — SB 1135, the California Wildlife Coexistence Act — would, if enacted and funded, establish a Wildlife Coexistence Program and Technical Advisory Committee that could potentially create a framework for the kind of species-level mortality reporting that currently does not exist for gray fox. The bill passed the Senate Natural Resources and Water Committee in April 2026 and is currently before the Senate Appropriations Committee[xxvii].

Acoustic Monitoring

For presence and distribution data, passive acoustic monitoring offers a practical, low-cost entry point well suited to gray fox. Gray fox vocalizations are distinctive enough to allow automated detection and analysis using widely available software. Passive acoustic recorders can be deployed across a network of sites with minimal infrastructure, maintained by volunteers or citizen scientists, and downloaded periodically for analysis.

A pilot deployment at a site with known historical gray fox presence — such as the Palo Alto Baylands, where UWRP has existing research infrastructure and long-term baseline knowledge — could establish proof of concept, generate data relevant to recolonization questions, and demonstrate the method's feasibility before any larger network deployment is attempted. Longer term, a regional citizen science acoustic network — engaging landowners, park managers, and conservation volunteers across the Bay Area and beyond — could produce a distributed baseline dataset at a fraction of the cost of conventional monitoring.

Genetic Assessment

The genetic health of California's gray fox populations — their diversity, connectivity, and vulnerability to inbreeding — has not been assessed at a population scale. Whether the habitat fragmentation documented across the Bay Area and Southern California is producing measurable genetic bottlenecks, or severing the gene flow that would allow local populations to recover after collapse, is not currently known.

Scat-based DNA sampling offers a non-invasive method for assessing genetic connectivity across a landscape without capturing or disturbing animals. A study spanning the Santa Cruz Mountains, Diablo Range, SF Baylands, and urban areas of Silicon Valley would directly address the connectivity questions raised by the Baylands collapse and the corridor fragmentation UWRP has documented over fifteen years of field observation. UC Davis holds existing California fox genetic datasets that would provide a valuable analytical foundation — and that already suggest relatively continuous gene flow within the state, a finding that frames the connectivity question as precautionary rather than urgent.

The Bobcat Blueprint

California has demonstrated that it can move from assumed stability to funded, systematic study of a non-listed, widely distributed species — when the evidence is clear and the advocacy is sustained. The California Fish and Game Commission's decision to mandate a statewide bobcat management plan and fund the research to support it, began not with a crisis but with a credible articulation of what was unknown and why it mattered[xxviii]. That is exactly the kind of argument the California gray fox data gap supports.

Gray fox are not bobcats. They occupy a different institutional position, generate different levels of public recognition, and face a distinct set of data challenges. But the underlying logic is the same: a species does not need to be listed or in freefall to warrant systematic attention. It needs a clear

demonstration that the absence of monitoring is itself a risk — and a proportionate, credible first step that gives agencies, funders, and researchers a reasonable place to begin.

> *"Habitat fragmentation and disease outbreaks are putting some populations at risk. More research is needed to understand the big picture for this canid's conservation needs."*
>
> — Greg Kerekes, Co-Founder UWRP & Executive Director, Urban Wildlife Research Project

VII

An Invitation

This inquiry began with a simple question: does California have the data to assess whether the pressures now documented in the Midwest are present here? The answer is no. But the process of asking that question — speaking with researchers, agency staff, and conservation practitioners across California and the Midwest — revealed something equally important: the people best positioned to begin closing this gap are already in the field, already collecting relevant data, and already asking related questions. What is missing is not expertise or motivation. It is coordination.

The Midwest experience demonstrates the power of regional data. Researchers working independently in four states, using different methods and asking different questions, arrived at convergent findings — and that convergence created the scientific foundation for meaningful action. That convergence did not happen quickly or easily. It required years of fieldwork, sustained institutional partnerships, and the willingness of agencies, NGOs, and academic researchers to work across organizational boundaries toward a shared understanding. Critically, that understanding included the public and decision-makers. The result was not just better science. It was the political and institutional foundation for the strongest precautionary action any state has taken for this species.

California is at an earlier moment. The signals are present. The researchers are engaged. The data, fragmented as it is, points consistently toward the same conclusion:

> *the current absence of monitoring is not a neutral condition, and the cost of continued invisibility is unknowable precisely because no one is looking.*

UWRP is a small organization with a long field record and a genuine commitment to the careful, non-advocacy approach this inquiry has tried to model. We do not have the resources to close California's gray fox knowledge gap alone. We do believe we have helped map it — and that mapping it is the necessary first step toward addressing it.

Public agencies responsible for wildlife management in California are not indifferent to these questions — they are stretched. The monitoring gap documented here reflects resource constraints and competing priorities, not a lack of scientific awareness or institutional concern. Independent research organizations, universities, NGOs, and tribal wildlife programs each have a role to play in supporting the work that agencies cannot currently resource. A collaborative model — with public agencies as essential partners rather than sole responsible parties — is both realistic and, as the Midwest experience demonstrates, effective.

We are extending an open invitation to researchers, agency staff, funders, tribal wildlife programs, and conservation partners who share an interest in California's gray fox and the broader questions of urban carnivore ecology, habitat connectivity, and wildlife disease that gray fox illuminate. We welcome conversation, collaboration, data sharing, and the kind of sustained partnership that the Midwest experience suggests is the only path to genuine understanding.

The fox is still out there. We just don't know how many, or for how long. That is reason enough to look.

Appendix A

California's Gray Fox Data Record — What Existed and What Replaced It

Understanding California's gray fox knowledge gap requires distinguishing between two things that are easy to conflate: the *existence of data* about a species, and the existence of a *monitoring program* for that species. California has had the former, sporadically. It has never had the latter.

A monitoring program, as the term is used in wildlife management, implies a recurring institutional commitment: defined methodology applied at regular intervals, a designated agency responsible for its continuation, and enough temporal depth to detect population trends over time. A one-time population study, however rigorous, is a snapshot. Harvest records compiled as a byproduct of license administration are an administrative artifact. Neither constitutes a monitoring program.

What California had: two imperfect data sources

Furbearer Kills or Removal. Gray fox in California are classified under state law as *furbearing mammals* — a legal category that includes pine marten, fisher, mink, river otter, raccoon, beaver, badger, and muskrat, among others. This classification is distinct from *game species* — deer, bear, elk, and waterfowl — which are subject to active population management, mandatory harvest reporting, and regular population assessments tied to regulated take. Furbearers historically generated monitoring data through a different mechanism: the trapping license system, which required licensed trappers to report their annual harvest as a condition of license renewal. That data was never designed as a population assessment. It measured kills — not abundance, reproductive health, or trend. Wildlife law renders this as 'take,' a term that obscures what the data actually recorded: how many animals were killed. As CDFW's own reporting acknowledged, catch-per-unit-effort figures are influenced by trapper skill, local landscape characteristics, and regulatory changes, not just species density. What the harvest record offered was a rough, geographically uneven signal of relative presence over time. It was the only systematic statewide record that existed for gray fox, and it is now gone.

The last population study: 1984. In 1984, the California Department of Fish and Game conducted what remains the most recent systematic statewide assessment of gray fox populations, examining harvest data and age structure across 29 counties grouped into eleven regional populations. It found healthy populations under harvest rates that in some areas exceeded 20% of the estimated local population. It did not include any geographic unit representing the San Francisco Bay region. No comparable study has been conducted since — not because a law ended the requirement, but because no law required continuation, and without listing obligations or commercial pressure to justify the investment, none was undertaken.

Two legislative changes that ended the harvest record. What remained after 1984 — the harvest data stream from licensed trappers — was itself progressively curtailed by two legislative actions:

- **In 1998**, California voters passed Proposition 4, banning the use of body-gripping traps for recreational and commercial fur trapping.[xxix] Trapping license sales dropped 42% in the first year and continued declining. The remaining harvest data became increasingly thin: by

the final season, just three trappers were targeting gray fox statewide, all operating in Los Angeles County.[xxx]

- **In 2020,** AB 273 — the Wildlife Protection Act of 2019 — ended recreational and commercial fur trapping entirely[xxxi]. The final trapping report documented 83 gray fox taken, representing 95% of the total furbearer harvest that season.[xxxii] All were unsold. No lawful recreational trapping harvest has been recorded since.

Unregulated hunting. Gray fox hunting continues under a regulated season (November 24 through the end of February, statewide), but unlike game species — for which mandatory tag reporting generates annual harvest data used in population management — gray fox hunters face no reporting requirement. The hunting season generates no population data while allowing unlimited kills of gray fox.[xxxiii]

What this means. The result is a species for which California has no current data source of any kind on population trends. The absence is not a neutral condition. Harvest data, even at its most limited, provided a rough signal of presence and relative abundance across a broad geographic area over time — the kind of long-term baseline that makes it possible to detect change. That signal is gone, and nothing has replaced it. Whether gray fox populations in California are stable, declining, or locally collapsing is, at present, unknowable — not because the question is unanswerable, but because no institution has yet built the tools to answer it.

A current opportunity. A pending legislative development may begin to address one part of this gap. SB 1135, the California Wildlife Coexistence Act, introduced by Senator Catherine Blakespear, passed the Senate Natural Resources and Water Committee in April 2026 and is currently before the Senate Appropriations Committee. If enacted and funded, the bill would establish a Wildlife Coexistence Program and a Technical Advisory Committee charged with guiding CDFW's coexistence efforts — and could potentially create a framework for the kind of species-level mortality reporting that has been absent for gray fox since commercial trapping ended. Whether nuisance trapper reporting — currently unregulated despite trappers holding state licenses — would fall within the TAC's scope remains to be determined. The bill represents the first legislative opening in decades for the kind of institutional infrastructure California's gray fox monitoring gap requires

Appendix B

Acknowledgements and Attribution

This report would not have been possible without the generosity of the researchers, agency staff, and conservation practitioners who shared their time, knowledge, and field experience. The author is grateful to the following individuals for their contributions:

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- Dr. Laurel Serieys, Wildlife Ecologist
- Dr. Niamh Quinn, UC Cooperative Extension Advisor, University of California
- Dr. Madeleine Zuercher, Wildlife Ecologist
- Neville Taraporevala, PhD Student, Department of Environmental Science, Policy, and Management, University of California, Berkeley
- Ryan Smith, Executive Director, Iowa Wildlife Federation
- Stan McTaggart, Furbearer Biologist, Illinois Department of Natural Resources
- Natalie Reeder and Tammy Lim, East Bay Regional Park District, and the East Bay Stewardship Network — a coalition of five public agencies managing nearly 225,000 acres across Alameda and Contra Costa Counties.

The author also acknowledges the broader community of researchers, agency staff, and field observers whose conversations over many years shaped the questions this report asks.

Authorship: This report was researched and written by AnMarie Rodgers, Board Member and Policy Lead: arodgers.uwrp@gmail.com, Urban Wildlife Research Project. AnMarie Rodgers conducted all interviews, source selection, synthesis, and analysis. Claude (Anthropic) provided editorial and drafting support throughout the writing process. All research judgments, characterizations of contributor statements, and conclusions reflect the author's independent assessment.

Photography: by Bill Leikam, “The Fox Guy” and Co-Founder UWRP.

Special thanks to Bill Leikam, Co-founder and Board President of the Urban Wildlife Research Project, whose fifteen years of field observation at the Palo Alto Baylands Preserve form the empirical foundation of this inquiry; to Greg Kerekes, UWRP Co-Founder and Executive Director, for his organizational support and partnership throughout this project; and to the UWRP Board for their encouragement and approval of this work.

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5/14/2026

To: California Fish and Game Commission

Everingham Bros. Bait Co. is a commercial fishing business in operation for the last 75 years catching and selling live bait. We have bait barges located in San Diego Bay, Mission Bay, and Dana Point Harbor where we sell the live bait to our customers. Our customers include private boaters and sportboats (commercial passenger fishing vessels) across the entire Southern California coast.

Everingham Bros. Bait Co. denies Petition 2023-33MPA and Petition 2023-24MPA. These MPA fishing restrictions would have a major impact on our business and associated industries including but not limited to:

- Proposed MPAs impact where we are able to catch live bait.
- Proposed MPAs directly impact our customers by restricting them from fishing in areas where they are currently active, reducing their business and causing financial and operational hardships.
- Proposed MPAs will affect the sales and income of our business, which in turn will affect the livelihood of our 46+ employees and the many businesses that we work with to maintain our fleet of vessels and bait barge receivers.
- Proposed MPAs will negatively impact tourism, local seafood industry, and marine industries.
- Proposed MPAs set a precedence for a process that increases fishing restrictions without support of scientific evidence or consideration of negative impacts.

Our company is also a member of the San Diego Fishermen's Working Group and the Sportfishing Association of California. We concur with the written statements those associations have submitted on our behalf regarding these petitions and other petitions not specifically mentioned above.

Respectfully,

Roy Everingham, Jr.
President

Jason Dunn
General Manager

Office: (619) 477-2248
Fax: (619) 477-2240

Everingham Bros. Bait Co.
PO Box 2449, La Mesa, CA 91943

Email: baitbarge@aol.com
Website: www.baitbarge.com

PORT SAN LUIS COMMERCIAL FISHERMEN'S ASSOCIATION
P.O. BOX 513
AVILA, CA 93424

Attn: California Fish & Game Commission's Marine Resources Committee (MRC)
RE: Regional Marine Protected Area (MPA) Petitions (alongshore San Luis Obispo through Santa Barbara counties petitions), most specficially Petition 2023-28MPA_AM2 (Tribally Co-led)
Note previous MPA Attempt: Point Sal SMR 2023-28MPA (termed SMCA) - OPPOSED BY PUBLIC
SUBJECT: PSLCFA's Opposition to Proposed MPA

May 5th, 2026

The Port San Luis Commercial Fishermen's Association (PSLCFA) was established in 1964 as a 501(c)6 nonprofit organization. PSLCFA members generate millions of dollars in local community revenue each year. We currently have 75 registered members. However, our unregistered numbers greatly exceed 100 as fishing in our community continues to be a family affair, passing along this time-honored tradition to future generations. Our PSLCFA members participate in groundfish, coastal pelagic species, halibut, crab, highly migratory species such as albacore, salmon, and/or hagfish fisheries, both commercially and recreationally (outside our association). The PSLCFA represents a significantly vested interest in fishery activities on the California coast. Our central coast fishermen land the most live fish on the West Coast. At least 65% of fishermen in our area rely on the live fish market for their main income source, fishing mostly through nearshore groundfish permits inside 3 miles with the primary take method being hook and line.

Contrary to the petitioner claims, the proposed MPA around Point Sal in central California poses a threat to the livelihood of California fishermen specifically the members of the PSLCFA. The area identified for proposal encompasses fruitful fishing grounds where our members' harvest activities occur.

The PSLCFA urges the California Fish and Game Commission's Marine Resources Committee to consider the dire consequences to our local commercial fishermen from enacting a Point Sal MPA. While the petition states the data from the overlapping commercial fishing blocks contributes to 1.1% of the central coast's landings by value, it fails to look at the local effects that 1.1% actually has. In the same dataset timeframe on the MFDE, 2012-2022, the local port to the MPA, Port San Luis/Avila had 28.12% of its commercial revenue alone come from the overlapping blocks, 631 and 632. More specifically 25.92% of the port's groundfish revenue

PORT SAN LUIS COMMERCIAL FISHERMEN'S ASSOCIATION
P.O. BOX 513
AVILA, CA 93424

and 57.79% of the port's crab revenue based on the dataset referenced. Further, upon speaking with our members, we have identified that many members have inadvertently misclassified their reported catch block which should have fallen under 631 and 632. Therefore, due to this, we anticipate the catch rate and revenue accumulated from this area to be significantly larger than shown in the dataset used for justification of this MPA proposal. Our members are making adjustments for future landings, but this will not be reflected in historical data and should be considered in this MPA's determination.

Further, disproportionate management such as enacting the proposed Point Sal MPA will undoubtedly result in the systemic dismantling of fishery culture on the California Coast and the economic ramifications will be felt far beyond.

The west coast fishing industry and coastal community businesses who normally benefit from derived demand are already facing economic decline directly related to the regulatory restrictions limiting the Dungeness crab season by 3 months and the inadvertent creation of a uniform west coast season opener date. The PFMC's decision for salmon season closures the last three years exacerbated this downward trend. The fishermen who would normally depend on one or both of those fishers for their livelihood have now expanded into the sablefish, groundfish, and albacore fisheries or the recreational sector in order to compensate for their lack of income. A preexisting high level of market competition from unregulated seafood importers and aquaculture production already presents downward pressure on the price of fish. This shift in the dedicated labor harvesting local wild fish has led to an influx of fish supply and market saturation wherein the price of fish sold off the boat has plummeted creating instability in other fisheries. Once again, in order to compensate for their income deficiency at this lowered price of goods, fishermen have been forced to increase catch volumes in these alternative fisheries. The government possess the power to waive permit fees, temporarily suspend fishery related taxes, issue financial relief, subsidize marine fuel, and/ or limit imported seafood from countries known for practicing unsustainable fishing but there has been zero regulatory reprieve to assist fishermen through this hardship. Closure of nearshore fruitful fishing grounds imposed by this MPA will place further unnecessary pressure on our local industry. By limiting This unfairly confines the potential income of fishermen involved in the commercial and recreational fisheries on the coast of California. The proposed MPA will especially harm the PSLCFA as many of our members are relatively new fishermen who have over $100k invested in assets and depend on this location to support their sole income.

Due to the already negatively impacted state of fisheries our fishermen frequently venture along the California Coast specifically North to the Morro Bay area and just South to Santa Barbara. Therefore, we stand in solidarity and brotherhood with the Morro Bay Commercial

PORT SAN LUIS COMMERCIAL FISHERMEN'S ASSOCIATION
P.O. BOX 513
AVILA, CA 93424

Fisherman's Association and the Santa Barbara Commercial Fisherman's Association against further MPA creation in this coastal region especial, MPA 2023-19MPA. The commercial blocks overlapping the proposed SMCA account for 6.2% of Morro Bay's landing revenue alone. More specifically, these blocks represent 25% of the area's squid landings, 8.8% of the groundfish landings, and 15% of the area's salmon landings per the MFDE. Closing this area to exclusively commercial fishermen would only continue to reduce fishable area for a shrinking industry and offer no benefits of the so-called "spillover effect" to restricted fisheries due to the still-allowed recreational take. There is zero public benefit which would come from MPA closures and restrictions but the impact to the livelihood of fishermen families would be devastating.

We urge you to question the policy methodology of MPA's along our coast- are these protective measures truly addressing a threat worth sacrificing the livelihood of us hardworking Americans? Also, why do proposals continue to identify the same areas for protection year over year when the general public has repeatedly and expressively voted against such measures?

Thank you for your time and consideration!

Sincerely,

Chris Pavone
President, PSLCFA

Outlook

Petition 2023-33MPA-AM

From Trevor Rodgers
Date Fri 05/15/2026 09:13 AM
To FGC <FGC@fgc.ca.gov>

Dear California Fish & Game Commissioners,

I am writing to you in support of California Department of Fish and Wildlife's position to deny the proposed increased closure of Cabrillo State Marine Reserve, Petition 2023-33MPA-AM.

As a lifetime angler, consumer of local seafood, supporter of this public resource and wildlife management strategy implemented by CDFW, I am deeply concerned that the resource will no longer be available for future generations as it was for myself.

I urge the commission to consider the impact of this closure and what effects it could have on our access to local seafood. Thank you for your consideration.

Very Respectfully,

Trevor Rodgers

Outlook

May 19, 2026 Meeting San Clemente Public Comment

From KIMBRA Phi
Date Sat 05/16/2026 07:02 AM
To FGC <FGC@fgc.ca.gov>

Dear FGC,
I have the following comments below.

Agenda Item #2- Shore fishing should not be restricted in Laguna Beach further. I do not believe this is about trying to sustain marine life and fish populations, I believe this is about trying to deny access from the ultra elite of Laguna Beach. There are plenty of women like me who chose to shorefish as a hobby that is affordable and accessible. Further denying access in Laguna Beach is just another win for the rich.

Agenda Item #4 - I am a daughter, wife and mother that fishes at the beaches of Ventura and Los Angeles County multiple times each week. I am catch and release. I believe the MPA that covers Point Dume to El Matador SB is another MPA that is about the ultra rich of Broad Beach trying to deny access to their beaches that they consider private. Opening the MPA to allow spear fishing and hook and line fishing would not have an impact on the fish populations. Broad beach and El Matador have great access and should be open and accessible for all, including lower income shorefisher women like myself. Broad beach specifically is one of the most accessible beaches for me to take my 80 year old mother with me, the south beach access point has only a few stairs that she can maneuver to accompany me to the beach. I look forward to bringing my mom with me to Broad Beach so I can fish and she can look for sea glass on the shore.

Thank you,
Kimbra Inglis Philbrook
Newbury Park, CA

Outlook

Thanks on Behalf of CCA California

From Tonie Bangos <tbangos@ccacalifornia.org>
Date Tue 05/19/2026 06:24 PM
To FGC <FGC@fgc.ca.gov>
Cc Miller-Henson, Melissa; Ashcraft, Susan; Shuman, Craig

Commissioners, Commission Staff, and Department Staff,

On behalf of CCA California, I simply wanted to extend a sincere thank you and congratulations to the Commission, Department staff, and everyone involved in coordinating and facilitating the recent bioregional meetings. (I am so sorry I wasn't able to make it in person today to say this in person to you all!)

The meetings were exceptionally organized, timely, and thoughtfully managed throughout what we know is a very complex and demanding process involving many perspectives and stakeholders. It was clear that a tremendous amount of preparation, coordination, and professionalism went into keeping the process productive and moving forward efficiently.

We appreciate the effort made to provide opportunities for public participation and dialogue, while maintaining structure and focus throughout each meeting. Processes of this scale are never easy, and your commitment to navigating this next phase in a transparent and organized manner does not go unnoticed.

Congratulations again on reaching this important milestone and thank you all for your continued hard work and dedication to California's marine resources and coastal communities.

Respectfully,

Tonie Bangos
Regional Director-Southern California
tbangos@ccacalifornia.org
Call/Text: (714) 803-9028
CCACalifornia

Outlook

Item #4, Fish & Game Commission, May 19 meeting - my hand was raised by I wasn't called upon

From Vroom, Peter
Date Tue 05/19/2026 03:43 PM
To FGC <FGC@fgc.ca.gov>

Hello,

I am a Deputy Director with the City of San Diego Public Utilities Department. I sat through almost the entire Fish & Game Commission Meeting on May 19 in order to speak on Item #4. I raised my hand at the very beginning of any discussion and did not lower it. However, I was not called.

Our Department would like our comments to be considered:

- As detailed in our comment letter, the proposed MPA expansion overlaps with the federally and state-permitted ocean monitoring area for the Point Loma Wastewater Treatment Plant, creating uncertainty about future permit conditions. Any changes to these long-standing permit terms could require multibillion-dollar infrastructure upgrades, affecting wastewater service affordability for the 2.4 million residents we serve.
- The City has also invested approximately $1.2 billion in the Pure Water San Diego Program, which will ultimately provide up to half of the City's water supply and relies on continued Point Loma operations under the existing permit framework. Permit changes resulting from the MPA expansion could jeopardize the success of this program and its long-term water supply benefits.
- Additionally, we share Scripps Institute of Oceanography scientist's concerns that the justification within the petition lacks scientific basis.
- For these reasons, we respectfully request that the Commission deny the petition.

Thank you,
Peter.

Peter S. Vroom, Ph.D.
Deputy Director
Environmental Monitoring & Technical Services Division
Public Utilities Department

NTC T (619) 758-2301
Alvarado T (619) 668-3239
C (619) 534-0908

The City of SAN DIEGO

~ A world-class city for all ~

Outlook

FW: Central Coast MPA petitions

From: Sheri Hafer
Sent: Saturday, May 23, 2026 7:15 PM
To: Wildlife DIRECTOR <DIRECTOR@wildlife.ca.gov>
Subject: Central Coast MPA petitions

From: **Mrs. Sheri Hafer,** ccwf@womenforfish.org**, +18058012836, San Luis Obispo County**

Subject: **Central Coast MPA petitions**

Message:

May 26, 2026 Meghan Hertel, Director California Department of Fish and Wildlife 1416Ninth Street, 12th Floor Sacramento, California 95814 Re: MPA Petition Process —Petitions 2023-19MPA, 2023-20MPA, 2023-28MPA-AM, 2023-33MPA, and 2023-34MPA Dear Director Hertel, The Central Coast Women for Fisheries (CCWF) is a 501(c)(3) organization based in San Luis Obispo County, California. Our fishing businesses are small-scale, family-operated enterprises. CCWF represents those families. Our members include active commercial fishermen and charter boat captains, fishermen's wives and daughters and general fishing industry and community supporters. Our mission is to foster and promote a sense of the living culture of our fishing communities. We support the fishing community thru a variety of ways including scholarships, community events, public education of fisheries, a sculpture called "Those who wait" near the harbor entrance, a newsletter called the Pelorus, safety classes and equipment, and anything else we can do to support the fishermen and fisherwomen and their families. One of our fundraisers is selling shirts. Our latest shirt design is titled "Save the Morro Bay Fishermen - Protect An Endangered Species". California commercial fishers have significantly declined in numbers over the last 20 years. In 2004, California issued 7,184 commercial fishing licenses. In 2026, they issued 1,942. A 73% decline. They truly are the endangered species we should be protecting. With this understanding, we don't see the reason why it is necessary to add more Marine Protected Areas (MPA) that would further decrease fishing opportunities and further hurt the fishing community's ability to thrive. The Central Coast fishermen are already significantly challenged by the 2007 Marine Life Protection Act process that implemented 29 MPAs along our coast. MPAs are already around nearly every geographical point where large reefs exist, squeezing the nearshore fishers into small ribbon-reefs along our coast. The petition for Point Sal is particularly concerning since it is one of the only significant hard bottom habitats left open to fishing between San Luis Obispo and Santa Barbara. It is very important to several fisheries including live nearshore, sea bass, salmon, halibut, and Dungeness crab. The area North of Point Buchon is another hard bottom habitat close to port- highly utilized by commercial and recreational fishermen alike. The area near Morro Rock is also an area close to port, mostly utilized by small boat recreational fishermen but also used by the commercial squid and salmon fisheries. Because America imports over 80% of our seafood, The President signed Executive Order 14276 "Restoring American Seafood Competitiveness" in April 2025. In it, there is wording requiring reducing regulatory burden, improving access, and preventing closures. Adding more MPAs would be in direct violation of this EO. We hope that the Department of Fish and Wildlife Commission denies these petitions. Perhaps there are other ways the tribes can be involved with the management and naming of the existing MPAs. Sincerely, CCWF directors

CALIFORNIA FISH AND GAME COMMISSION
RECEIVED 5/26/2026

Devora Hertz
[redacted]

May 19th 2026

Re: 202324 Petition
Extension of the Laguna Beach MLPA

Dear Commissioners,

I have lived at the entry point to Thousand Steps beach for nearly 40 years. In that time I have seen a huge transformation of this area.

I would like to talk about human impacts.

Our particular property and its vantage point has a direct visualization of the entrance to Thousand Steps and the access streets from all angles.

Initially to access this beach area you needed to be a resident and have a key card to enter the gate down the steps. Some time in the 80's this key card disappeared and the access became public. About 10 years ago a signal was put in at the entry point to this beach. Suddenly this beach was all over social media and people started coming down to this beach in droves.

As I said, we can see this access 24/7. People coming and going with fishing gear. Permits? Probably not. I see people leaving with numerous lobsters/fish etc, 12 at a time. Over and Over and Over again! Sometimes I just want to jump in the water and shew the fish away in the other direction its so bad. And I hate to say it but some of these people are my neighbors. They brag about their catches and there isn't a thought or care of their impacts onto these areas.

The health of these areas need your protection. Even with protection, enforcement is far from 100%. Considering the substantial impacts humans are having on these fragile areas I please request your approval of the petition.

Every little bit helps

Sincerely,

Devora Hertz

Outlook

In Support of the Mishopshno SCMA (Petition 2023-29MPA)

From Andrew Kweder <noreply@adv.actionnetwork.org>
Date Wed 05/27/2026 05:21 PM
To FGC <FGC@fgc.ca.gov>

President Sklar and Honorable Commissioners,

Dear President Sklar and Honorable Commissioners,

I am a California resident writing in strong support of the Mishopshno State Marine Conservation Area (SMCA) (Petition 2023-29MPA) off the coast of Carpinteria.

The Mishopshno SMCA would protect important habitats that support rich biodiversity, such as kelp forest, rocky reef, sandy beaches, and a vital juvenile white shark habitat. Furthermore, I strongly support Mishopshno's tribal co-management by the Santa Ynez Band of Chumash Indians as a concrete step towards Indigenous marine stewardship. The designation of this MPA would honor the Chumash peoples' historical and present-day relationship with the Santa Barbara coast, and strengthen their stewardship of the area.

Research has shown that marine protected areas (MPAs) can bolster ecosystem resilience in the face of climate change, enhance local economies through tourism and ocean recreation, help overexploited fish and habitats bounce back, and keep our coasts healthier. The establishment of Mishopshno SMCA would also be a powerful step toward Governor Gavin Newsom's 30x30 goal, protecting California's marine life and coastal communities for generations to come.

We appreciate the Commission's work to protect our state's coastal habitats and biodiversity, which is critical now more than ever as we face the twin crises of climate change and biodiversity loss. I urge you to approve this proposal that aims to honor Chumash cultural and historical connections to the area, provide additional resilience in the face of climate change, and protect critical marine habitats.

Sincerely,
Andrew Kweder M.P.A.

Andrew Kweder

Outlook

Please Support Stronger MPAs to Protect California Kelp Forests

From Joli Delucia
Date Thu 05/28/2026 12:31 PM
To FGC <FGC@fgc.ca.gov>

Dear Chair Sklar, Vice Chair Anderson and Members of the Fish and Game Commission,

Thank you for your continued leadership and partnership to manage California's Marine Protected Area (MPA) Network. As environmental threats intensify across the world's oceans and coasts, our state's MPA Network stands out as a globally recognized model of ocean conservation. My name is Joli DeLucia, and I am a California undergraduate student writing about a marine conservation issue to ask you to support stronger and expanded Marine Protected Areas, especially to help protect California's declining kelp forest ecosystems.

Recent research shows that kelp forests in California have changed unevenly across the state. Central California has experienced kelp gains, while Northern and Southern California have experienced major declines. This suggests that stronger ecosystem protection is especially vital in these regions where kelp is most vulnerable. MPAs can help by protecting the whole ecosystem that kelp forests provide as they are important for providing habitat to fish, invertebrates, marine mammals, and many other species. They also support fisheries, biodiversity, and coastal resilience. The MPA Network is California's most important marine ecosystem conservation tool, and the Network has served as a model for marine biodiversity conservation around the world. Kelp forests are facing threats worldwide from climate change, marine heatwaves, pollution, storms, and overgrazing by sea urchins. Climate change is already affecting marine life and habitats, with impacts expected to increase over time. The catastrophic collapse of kelp forest ecosystems off California's North Coast is just one example of how climate change can

cause, accelerate or compound other stressors facing California's coast and ocean. Climate impacts also often have cascading effects, not just for ecosystems but for coastal economies and communities that rely on a healthy ocean.

I respectfully urge you to support policies that strengthen and expand California's MPA network, protect kelp forest ecosystems, fund long-term monitoring, and support science based restoration. Protecting kelp forests is significant for marine life, fisheries, and the future health of California's coast.

Sincerely,

Joli DeLucia

Outlook

Surf Beach State Marine Conservation Area

From Archie Mitchell
Date Wed 06/03/2026 08:11 AM
To FGC <FGC@fgc.ca.gov>

To: California Fish and Game Commission
Email: fgc@fgc.ca.gov

Subject: Request for Review of Recreational Fishing Restrictions at Surf Beach State Marine Conservation Area

Dear Commissioners,

I respectfully request that the California Fish and Game Commission review the current prohibition on recreational fishing at Surf Beach State Marine Conservation Area near Lompoc, California, and consider whether a narrowly tailored public access exception is warranted.

Surf Beach has a long and important history as a traditional recreational fishing destination for residents of Lompoc, Santa Barbara County, military personnel assigned to Camp Cooke and later Vandenberg Air Force Base/Space Force Base, and visitors to California's Central Coast. For generations, anglers used this beach responsibly for surfperch and other lawful recreational fishing opportunities.

I fully recognize and support California's marine conservation goals under the Marine Life Protection Act. Protecting marine ecosystems is an important public responsibility. However, California's own Marine Protected Area framework demonstrates that conservation and carefully managed recreational fishing can coexist.

Multiple California Marine Protected Areas currently allow some forms of recreational fishing under controlled conditions. This establishes that total prohibition is not the only regulatory model available when biological objectives can still be met.

Accordingly, I respectfully ask:

1. What current scientific evidence specifically justifies continued total prohibition of shore-based recreational fishing at Surf Beach SMCA?
2. Has the Commission evaluated whether limited, regulated shore angling could be compatible with conservation objectives?
3. Would the Commission consider adaptive management measures such as:
• hook-and-line only fishing,
• shore-based access only,
• species-specific restrictions,
• seasonal access limitations,
• catch-and-release provisions if appropriate?

Surf Beach represents an important public recreational resource for the Central Coast community. Reasonable access, if biologically supportable, would better balance conservation goals with public recreational opportunity.

Thank you for your public service and your consideration of this request.

Respectfully,

Archie Mitchell
Lompoc, California

Sent from my iPhone

Outlook

Opposition to Environmental Action Committee of West Marin (EAC) Duxbury Petition 2023-32MPA and SMCA Expansion

From Josh Christenson
Date Wed 06/03/2026 12:56 PM
To FGC <FGC@fgc.ca.gov>
Cc saveduxburyaccess@gmail.com <saveduxburyaccess@gmail.com>

Dear President Sklar and Commissioners,

I oppose the proposed no-take reserve and any unjustified expansion of the Duxbury Reef SMCA.

Duxbury Reef is already highly protected within Point Reyes National Seashore and the Greater Farallones National Marine Sanctuary, alongside strict statewide fishing regulations. Long-term UCSC monitoring shows natural variability, not ecosystem collapse, and there is no evidence that current regulated use is causing harm. If issues arise, targeted, least-restrictive management tools are available and appropriate.

CDFW scientists have already rejected the EAC's claim that Duxbury is in crisis and recommended denying the no-take reserve. Proposing expansion without site-specific justification departs from established, evidence-based standards and risks unnecessary harm to coastal communities, including local fishing access and food security in West Marin.

I urge the Commission to:
- Reject a no-take reserve at Duxbury Reef
- Maintain current SMCA boundaries unless clear, site-specific need is demonstrated
- Rely on adaptive, least-restrictive management tools
- Include the February 2026 Save Duxbury Access alternative petition in the official record

Sincerely,

Joshua Paul Christenson
El Granada, California

June 4, 2026

BY EMAIL TO: fgc@fgc.ca.gov

California Fish and Game Commission
715 P Street, 16th Floor
Sacramento, CA 95814

Re: MPA petitions submitted by the Santa Ynez Band of Chumash Indians

The Santa Ynez Band of Chumash Indians would like to thank you for your ongoing work on the Marine Protected Area (MPA) petitions.

On behalf of the Tribe, I presented an overview of the Chitqawi petition at the May 5 public meeting. At that meeting, I provided a very brief explanation of some of the basic concepts and origin of tribal sovereignty in the United States. This is important to understand as it explains why Tribal petitions are different in both law and policy. Since that presentation, I have received a few questions (such as why is a federally recognized Tribe treated differently? and why is there separate tribal take?) as well as a request to put this information in writing, so with this letter I am responding to those questions so the Commission can review and consider this information in its process.

Before I address these questions however, I want to make clear that the Santa Ynez Band submitted these MPA petitions in 2023 first and foremost because these places—Mishopshno, Point Buchon and Chitqawi—are special and deserve protection. They are vitally important for their biodiversity and cultural resources. The purpose here is not to make a political point; it is for the Tribe to protect and return to the important ecosystems that they stewarded for thousands of years.

The general answer to the questions above is in United States Constitution. Article 1, Section 8, Clause 3 states that Congress has the power "To regulate Commerce with foreign Nations, and among the several States, and with the Indian Tribes." Called the Indian Commerce Clause,[1] this one provision serves as the foundation for all law pertaining to Tribes.[2] Through a series of cases early in U.S. history referred to as the Marshall Trilogy, the Supreme Court relied upon this provision to clarify that Tribes are above all sovereigns. Although contained within the exterior boundary of the United States, they remain functioning, sovereign governments and retain all powers not inconsistent with their

[1] The Supreme Court had recently reaffirmed again that the Indian Commerce Clause is not limited to the common perception of commerce as meaning trade or economic transactions. A brief description of this can be found at: https://constitution.congress.gov/browse/essay/artI-S8-C3-9-1/ALDE_00012976/

[2] Throughout this letter the term "Tribes" refers to federally recognized Tribes.

"domestic" status. The California Attorney General has a brief but helpful definition of sovereignty here: https://oag.ca.gov/nativeamerican/tribal-sovereignty.

Because Tribes are governments, their members are actually dual citizens of both the United States and their respective Tribe. Also because they are governments, Tribes and their members are subject to different laws meant to protect their sovereignty. The clearest example of this is Title 25 of the United States Code, which is an entire section of federal law amounting to thousands of different statutes that apply only to Tribes and their members.[3] Thus different laws (such as the tribal take regulations that provide it is for federally recognized Tribes) can and do apply only to Tribes or their members and this is well within the law.

The fact that Tribes are governments also answers questions about whether tribally led initiatives or tribal take are racial classifications that might not be permitted in law. The simple answer is no. As noted above, the law has always dealt with Tribes and members as a political category of persons – not a racial category. This issue has been tested many times (starting with a case called *Morton v. Mancari* in 1974) but the answer never changes: Tribes and Tribal members are a political classification and as such, laws benefiting them do not run afoul of discrimination laws.

Similarly, tribal co-management/co-stewardship and other tribal rights to lands and water depend upon this same longstanding body of law that Tribes are sovereigns. The current MPA effort to provide support for tribally led MPAs is therefore rooted in this same legal framework. California Tribes were dispossessed of their lands and waters starting with the Spanish missions in the eighteenth century and this continued up to the twentieth century. The tribally led MPAs are very much an effort to put tribes back on the landscapes (and seascapes) from which they had been forcibly separated. In other words, these are not new efforts but a return to the oldest efforts of Tribal management. This is set out in the Governor's Statement of Administration Policy on Native American Ancestral Lands: https://www.gov.ca.gov/wp-content/uploads/2020/09/9.25.20-Native-Ancestral-Lands-Policy.pdf.

The bottom line is that the Commission is on solid legal ground in this process for tribally led MPs and tribal take, and has been for almost 250 years. I have tried to avoid too many citations and legal detail here, while providing enough for the Commission to know just how strong a foundation this process stands upon, but would be happy to discuss or share any further information on this that the Commission would like. We are here to help.

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[3] If you would like to read about this status in more detail, the Native American Rights Fund has a very helpful blog post that summarizes these issues, although in more detail than I can do in this letter: https://narf.org/about-tribal-nations-united-states-treaties/

To the degree you receive any questions or comments about the nature of the role of federally recognized Tribes or tribal take under the regulations, please feel free to share this letter.

Thank you,

Natalie Landreth
Nashoba Consulting LLC
natalie@nashobaconsultingllc.com
907-360-3423
Counsel to the Santa Ynez Band of Chumash Indians

Kent Khtikian
[redacted]

June 4, 2026

via email (fgc@fgc.ca.gov)

California Fish and Game Commission
P.O. Box 944209
Sacramento, CA 94244-2090

Re: Petition for modification of Duxbury Reef Marine Protected Area
Petition # 2023-32MPA

Dear President Sklar and Honorable Commissioners:

For the reasons set forth below, the survey submitted by the opponents of Environmental Action Committee of West Marin's ("EAC") Petition 2023-32MPA is not applicable to, nor does it reflect, the conditions which are the concern of Petition 2023-32MPA and which that Petition seeks to remedy. The basis for this comment is that from 2013 to the present, I have been part of a team of four persons (3 biologists and I) that conducted the Multi-Agency Rocky Intertidal Network ("MARINe") surveys of intertidal life at four sites in Marin County and one on Alcatraz, including the Bolinas Point site on Duxbury Reef. I most recently assisted in the survey of the Bolinas Point site on May 19, 2026. I have also written a training manual for docents which identified and described all invertebrate species in the intertidal area of Duxbury Reef.

The opponents of the Petition have submitted a report of a survey of Duxbury Reef (performed about 720 yards north of Bolinas Point) which they claim shows that the "reef is doing well and not in decline."[1] The study that the opponents reference, and which they previously submitted at least twice to the Commission, is set forth in the attached document (hereinafter the "BP MARINe Survey") . Contrary to the opponent's claim, for the reasons set forth below in paragraphs 1-3, there is no basis to conclude from the BP MARINe Survey that "the reef is doing well and not in decline".

1. *The BP MARINe Survey covers only an 8-year period ending in 2014, and shows no invertebrate[2] counts after about January 2014, for 5 of the 7*

[1] This characterization of the survey has been often repeated by Save Duxbury Access ("SDA") in public meetings, in numerous social media posts, and in SDA's submissions to the media. For example: "This 20-year study shows a stable eco-system, with no documented collapse." "Perspective", *Pt. Reyes Light,* February 5, 2026 , p4. As explained below, there are several reasons why this is misleading.

[2] The BP MARINe study presents data to 2024 for Fucus and Mastocarpus which are both algae and Phyllospadix ("surf grass") which is a plant, and bare rock. EAC's petition is concerned with the condition of the invertebrates

species of invertebrates shown in that document.[3] Therefore, neither a conclusion regarding the presence, absence or degree of any adverse impacts in the past 12 years on those five species, nor a general inference concerning the current condition of any other invertebrate species premised on that data, would be supported by what is presented in the BP MARINe Survey. The inappropriateness of such an inference is further indicated by the fact that starting in May 2017, well after the last year's data (2012), there was a dramatic increase in Duxbury visitation as a consequence of the highly publicized beached Blue Whale (May 2017), a Fin Whale (May 2018), two grey whales (2019 and 2020), and the Covid epidemic (commencing about March 2020).

2. *The BP MARINe Survey does not adequately address the many small, motile and/or cryptic species that the thousands of Duxbury Reef 's annual student and recreational visitors hope to see, and that are most sensitive to and directly impacted by the human handling/possession and taking activity on Duxbury that EAC's petition hopes will be mitigated by the proposed redesignation.*[4] Information about the condition of those species has been presented in the documents that were submitted to the Fish & Game Commission by EAC. None of the seven invertebrate species in the MARINe Survey were species of concern in EAC's submission.

3. *The BP MARINe Survey was performed in an intertidal area*

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and raises no issue concerning the condition of algae or plants on Duxbury.

[3] The BP MARINe Survey does show data for Mytilus (CA Mussel) and Pisaster ochraceus (common sea star) through to 2024. It shows a stable Mytilus population. (Mussels have not been a species of interest to either student groups or recreational visitors/tidepoolers.) However, it also shows a dramatic crash of Pisaster commencing in 2014 and which continues to 2024. BP MARINe Survey at pg. 8. That drop in the population of Pisaster is due to star wasting disease, a general mortality condition which was not limited to Duxbury Reef and not a consequence of the mixed take/no take regulation of Duxbury. Although EAC's petition, if granted, would obviously not prevent star wasting disease, it would promote the recovery on Duxbury of the several star species that were present on Duxbury prior to the star wasting epidemic. In that regard, it should be noted that the BP MARINe survey set forth in the BP MARINe Survey shows no data for any other species of sea star, including Leptasterias spp., and Henricia spp., which regardless of star wasting disease are of particular concern to EAC's petition due to their sensitivity to handling. For example, all Leptasterias brood their young as does one species of Henricia and consequently are particularly highly sensitive to being picked up (an activity which tide-poolers justify by inferring that "fishing is allowed so what harm is there in picking something up and putting it back or taking it home"), whereas all other species of sea stars on the Central Coast of California are broadcast spawners.

[4] Those species include Pugettia richii, Pugettia producta, Pugettia gracilis, Romaleon antennarium, Pachygrapsus crassipes, Hemigrapsus nudus, Hemigrapsus oregonensis, Leptasterias spp., Henricia spp., Xiphister atropurpureus, Lottia gigantea, Oligocottus spp, Gobiesox maeandricus, Octopus rubescens, and Octopus dofleini.

purposefully chosen as a survey site for the fact that the area selected is a relatively remote and a very infrequently visited part of Duxbury, and, therefore, with a low probability of being impacted by any visitation - like the other MARINe Survey sites in Marin County and on Alcatraz. For reason of the location of the site selected, the results of surveys conducted at Bolinas Point are well suited to understanding macro-anthropogenic impacts (such as oil spills, acidification and water temperature change). However, it would not reflect any of the micro-anthropogenic impacts (such as taking, handling, and turning over rocks) occurring in any other part of Duxbury Reef, other than the immediate study area at Bolinas Point in which the study plots and transects for the BP MARINe survey are located. The inapplicability of the BP MARINe study to the heavily visited Agate Beach area of Duxbury is compounded to the extent that there are micro-habitats in the Agate Beach area of Duxbury, and organisms in those micro-habitats, that are not present within the plots of the BP MARINe Survey.

SUPPORT FOR COMPROMISED RESOLUTION

In conclusion, I believe that the evidence which all interested persons have submitted supports a compromised approval of the Petition as follows:

(1) the current Marine Protected Area to remain a Marine Conservation Area;

(2) the Southern and Northern Extensions of the Marine Protected Area to be classified as State Marine Reserves[5]; and,

(3) there be no limitation on offshore fishing off the Southern or Northern Extensions as described in EAC's letter to the Commission dated November 26, 2025.

This proposed solution:

(1) would not deprive anyone of their current rights to fish from the reef in the current Marine Protected Area, which is the area where fishing from the reef occurs. (It should be noted that this would not address the problem of the taking and injury to intertidal creatures caused

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[5] Examples of current MPAs (in the North-Central coast area) which are contiguous with differing designations (e.g. one as a MCA and the other as a MR) and share boundaries despite their differing designations:

Pt Arena MR & Sea Lion Cove MCA
Stewart Point MR & Salt Point MCA
Salt Point MCA & Gerstle Cove MR (wholly within Salt Point MCA)
Bodega Head MR & Bodega Head MCA
Montara MR & Pillar Point MCA

At Duxbury there are clear physical features between the current MPA and the Northern & Southern Extensions.

by visitors who infer that such activity is permitted because fishing is permitted, despite signage to the contrary and, therefore, would not abate the loss of invertebrate biomass, and would be a significant compromise of EAC's petition.)

(2) would not have any impact on commercial or recreational offshore fishing;

(3) would provide a legal framework for the protection of intertidal species on the Northern and Southern Extensions for generations to come;

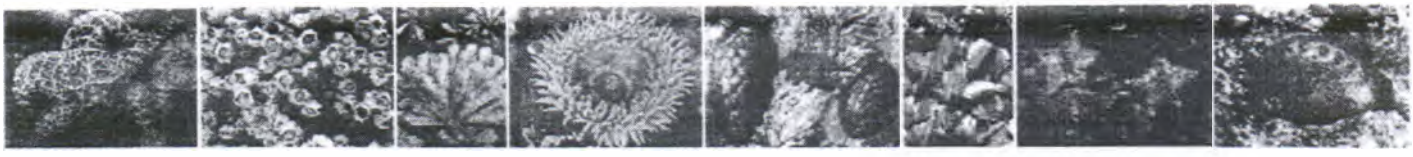
(4) would not impact fishing from the reef in the Southern and Northern Extensions as fishing in those areas does not occur because of either the difficulty of access, reef topography, remoteness, or some combination of those three. However, if the moratorium on the taking of Red Abalone which has been extended to 2036 is not extended beyond 2036, the picking of Red Abalone, a predominately sub-tidal species, in the intertidal area of the Northern Extension would no longer be permitted; nevertheless, in that event, even if the area down to low low water is a marine reserve, Red Abalone could still be taken by wading and snorkeling/scuba diving from shore into any area below low low water and by snorkeling/scuba diving from a boat.

Respectfully submitted,

Kent Khtikian

Search

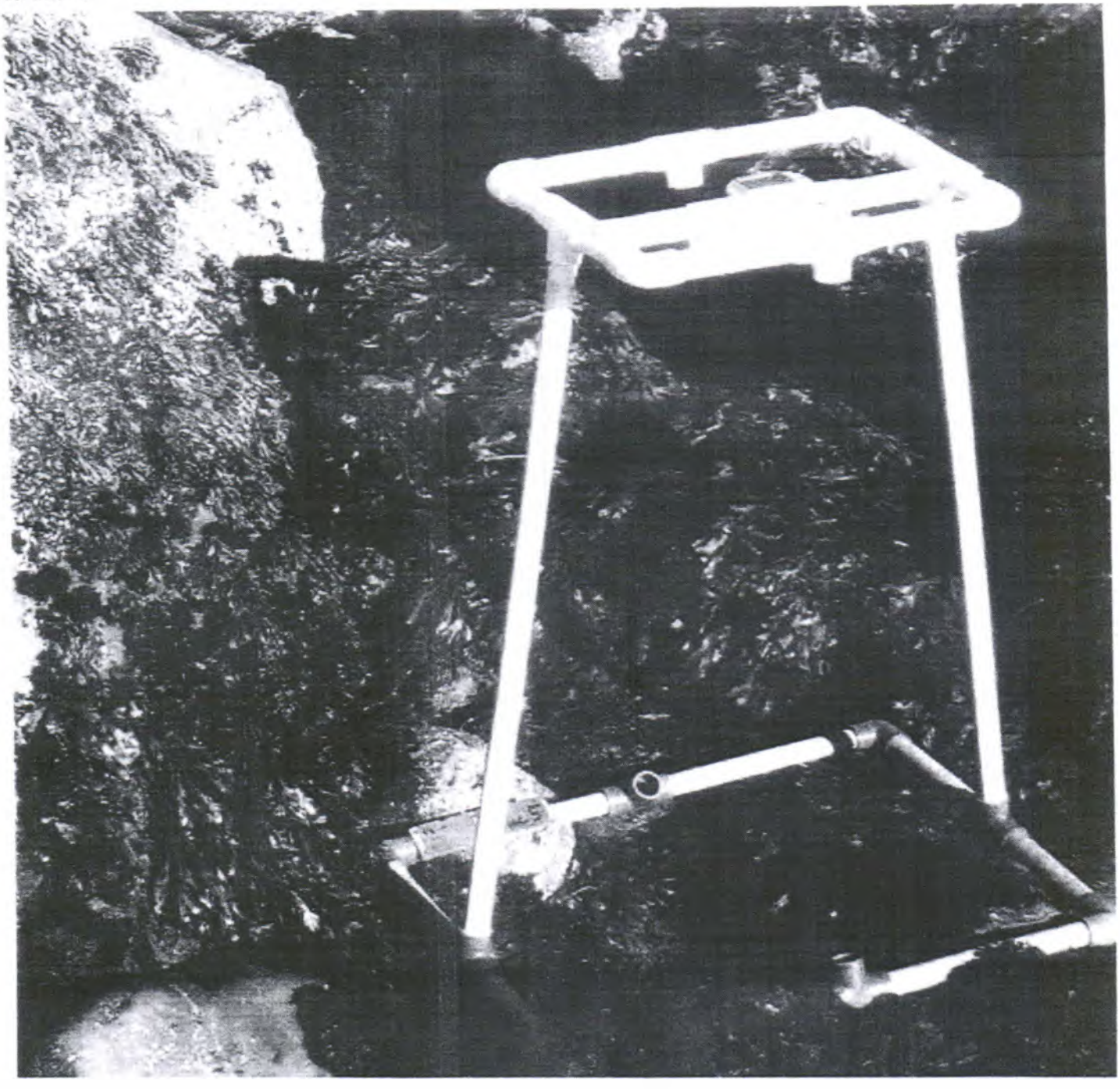
Bolinas Point Long-Term trends



In order to standardize species resolution across all MARINe groups and over time, some species (typically rare) were lumped for graphical presentation of Long-Term monitoring data. See lumped categories for definitions (some variation occurs between methods and over time).

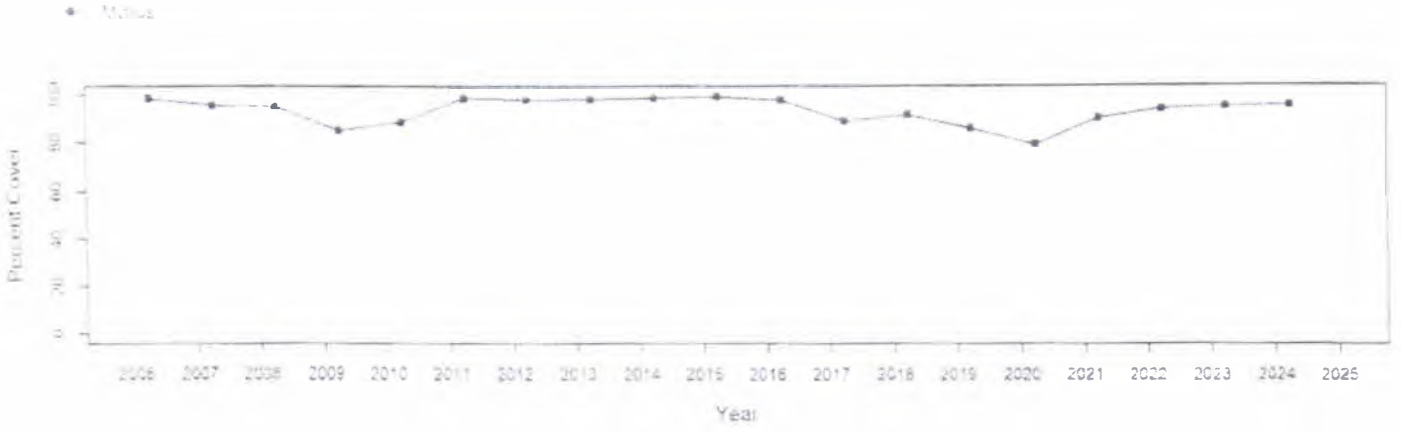
If you experience any barriers accessing the trend graphs below, please contact (pacificr@ucsc.edu) for help.

Photo Plots

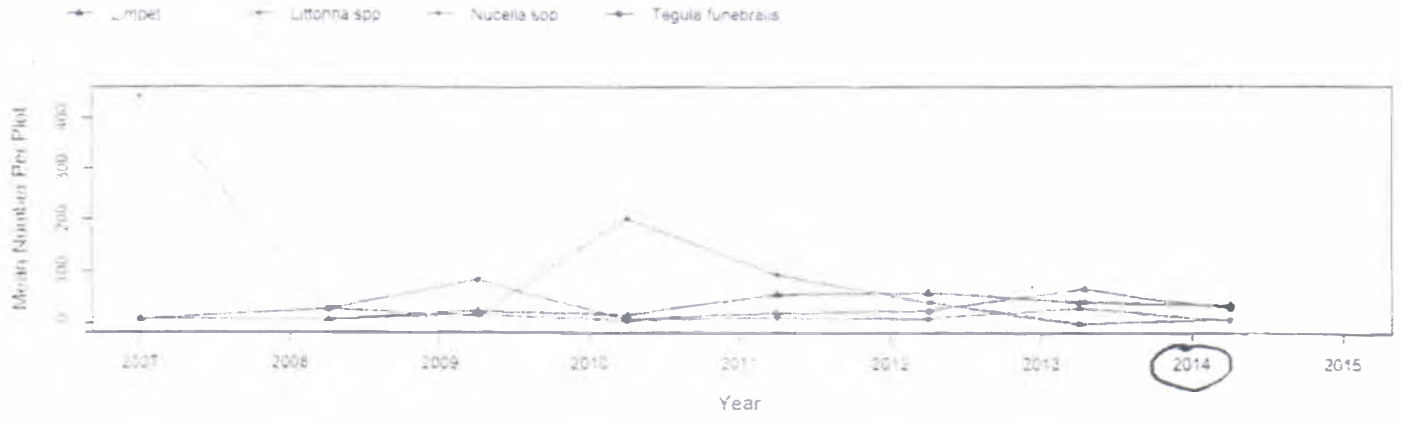


Below are the trends observed for each Photo Plot target species at this site. Long-Term percent cover trend graphs also include any species that reached a minimum of 25% cover during any single point in time within a given target species assemblage. Breaks in trend lines represent missed sampling events. For additional species observed that did not meet this 25% threshold, please use the Graphing Tool.

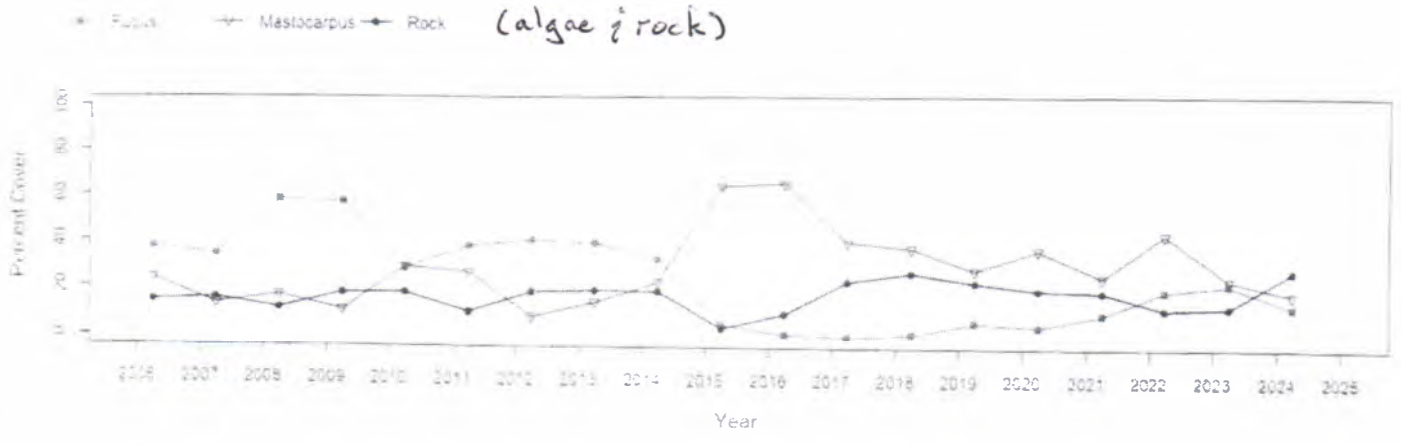
Mytilus (California Mussel) – percent cover



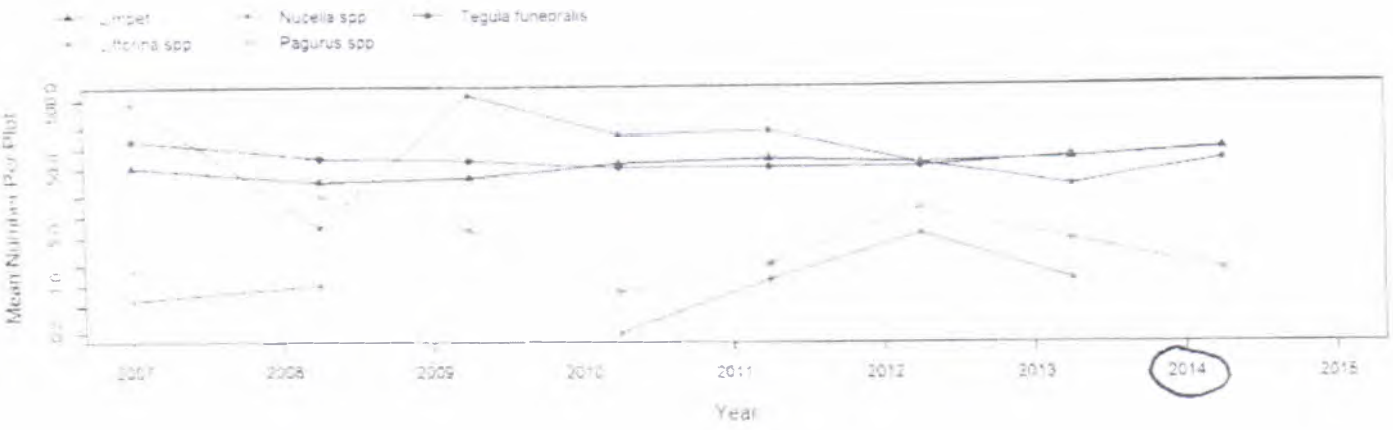
Mytilus (California Mussel) – motile invertebrate counts



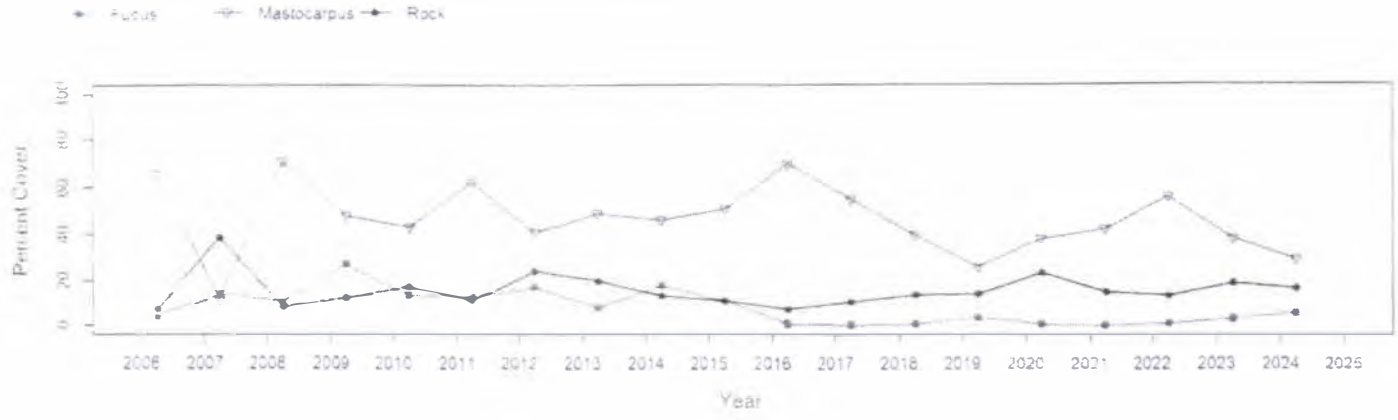
Fucus (Northern Rockweed) – percent cover



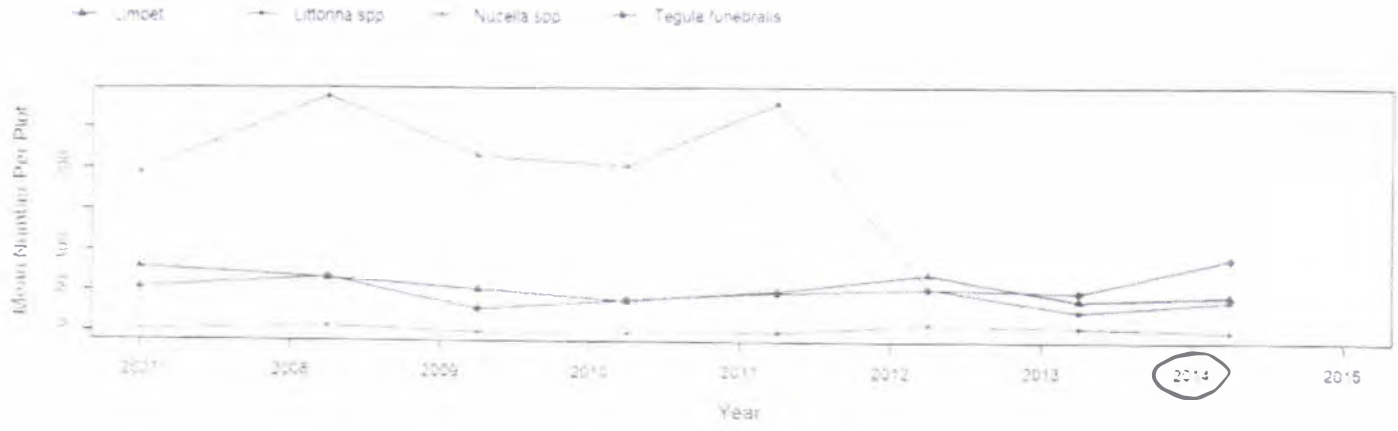
Fucus (Northern Rockweed) – motile invertebrate counts



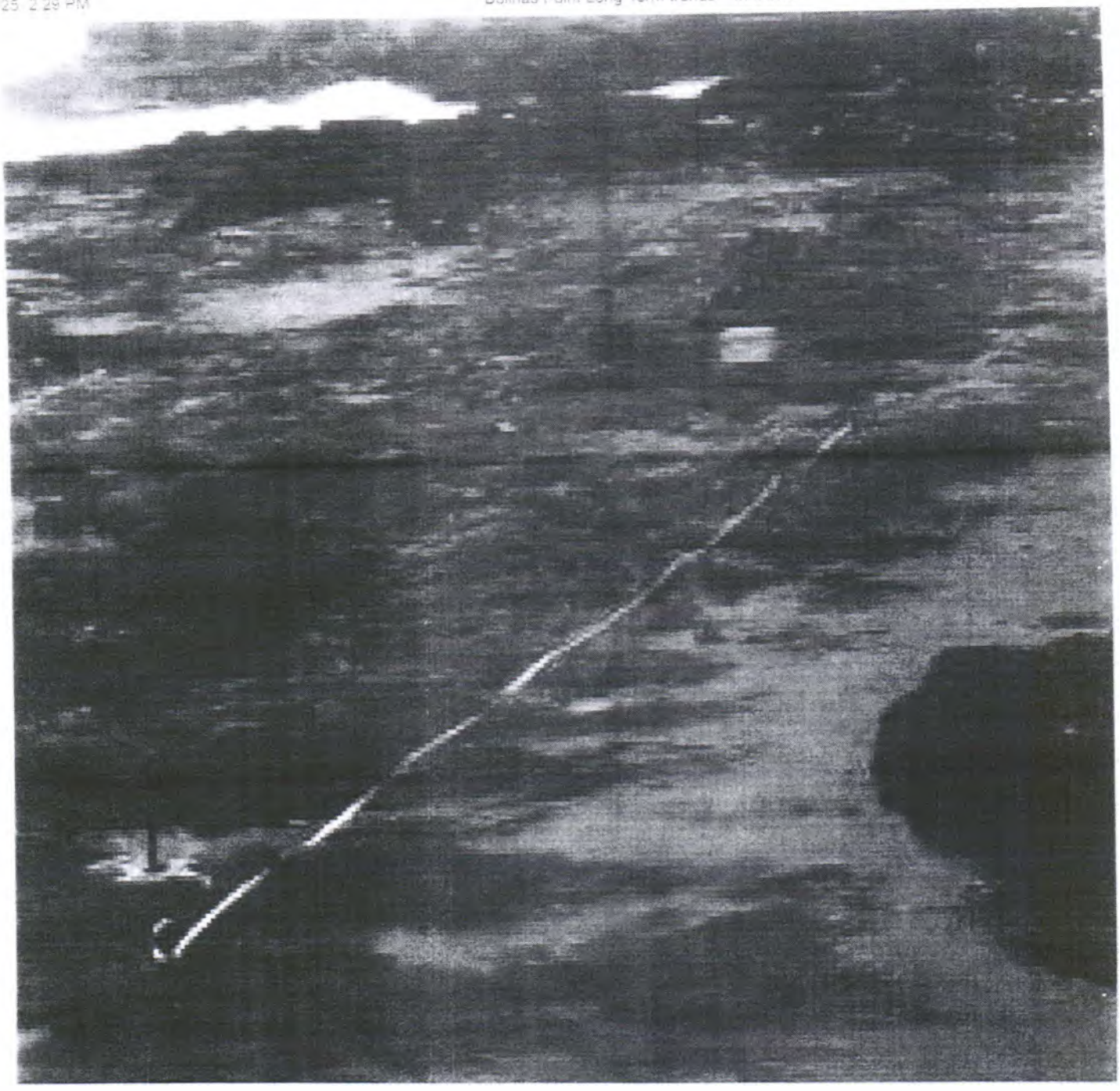
Mastocarpus (Turkish Washcloth) – percent cover



Mastocarpus (Turkish Washcloth) – motile invertebrate counts

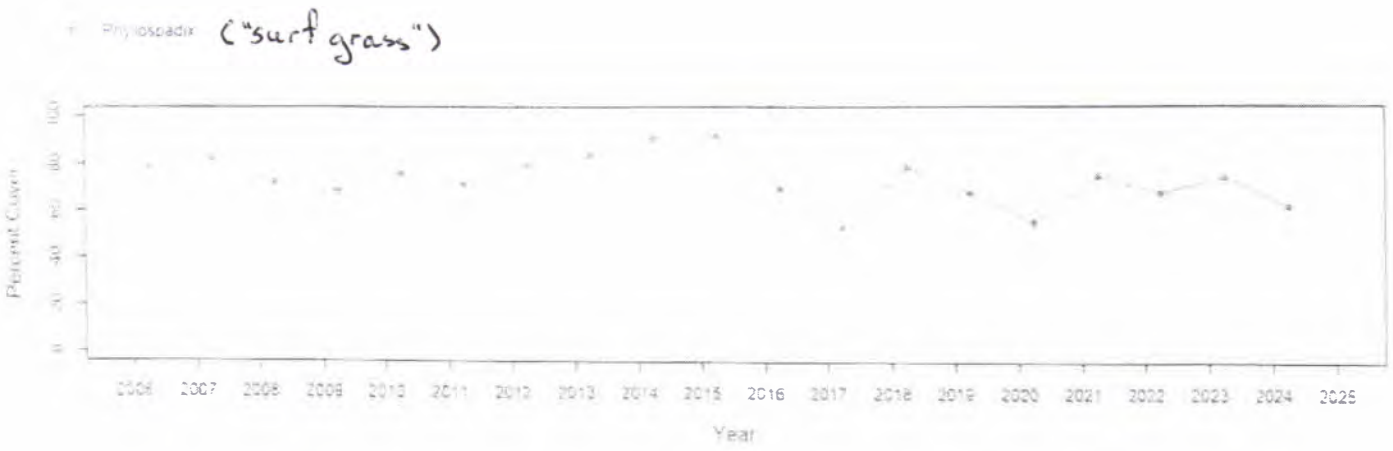


Transects

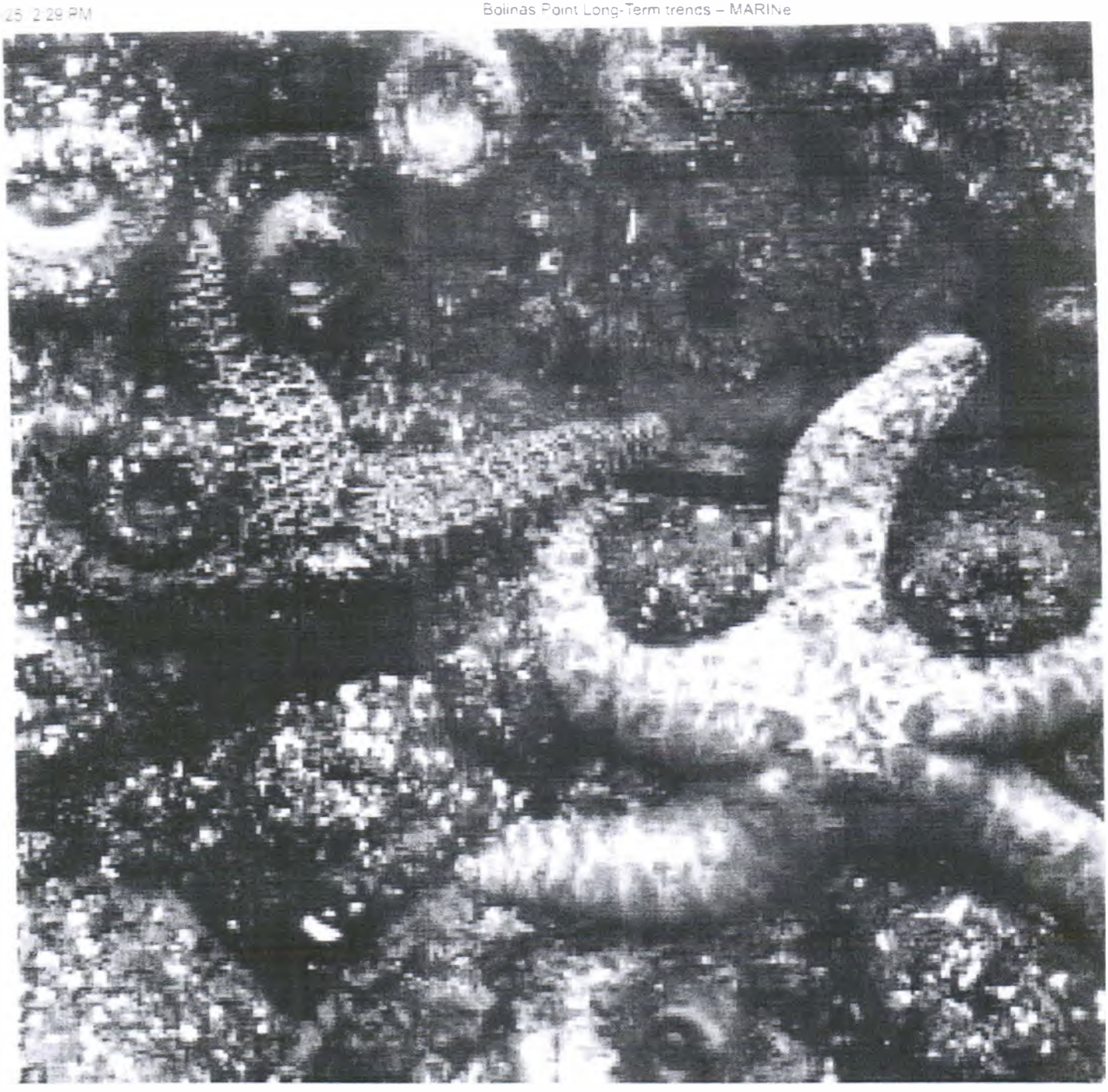


Below are the trends observed for each Transect target species at this site. Long-Term trend graphs also include any species that reached a minimum of 25% cover during any single point in time within a given target species assemblage. Breaks in trend lines represent missed sampling events.

Phyllospadix (Surfgrass)

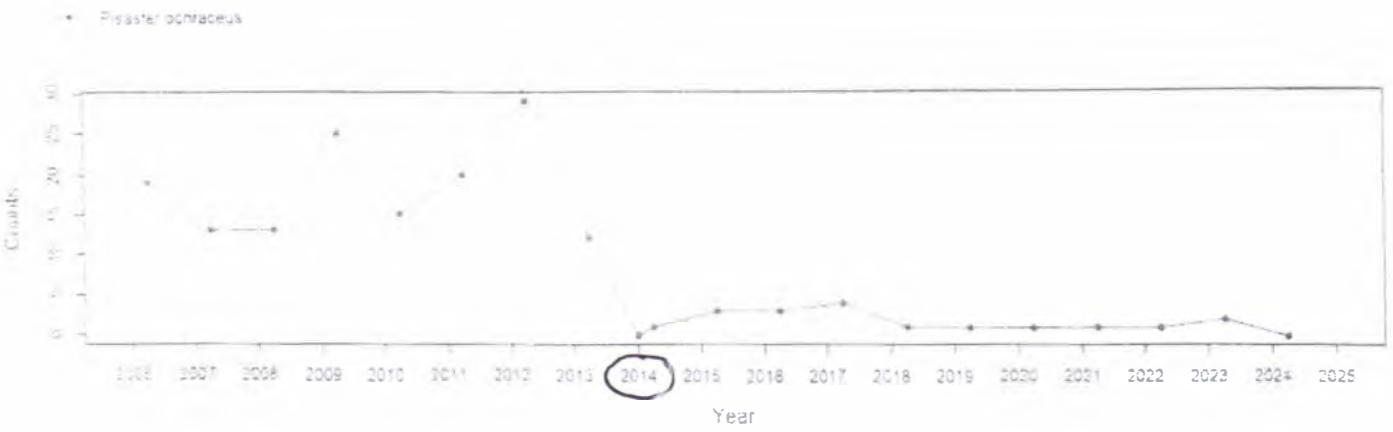


Species Counts and Sizes

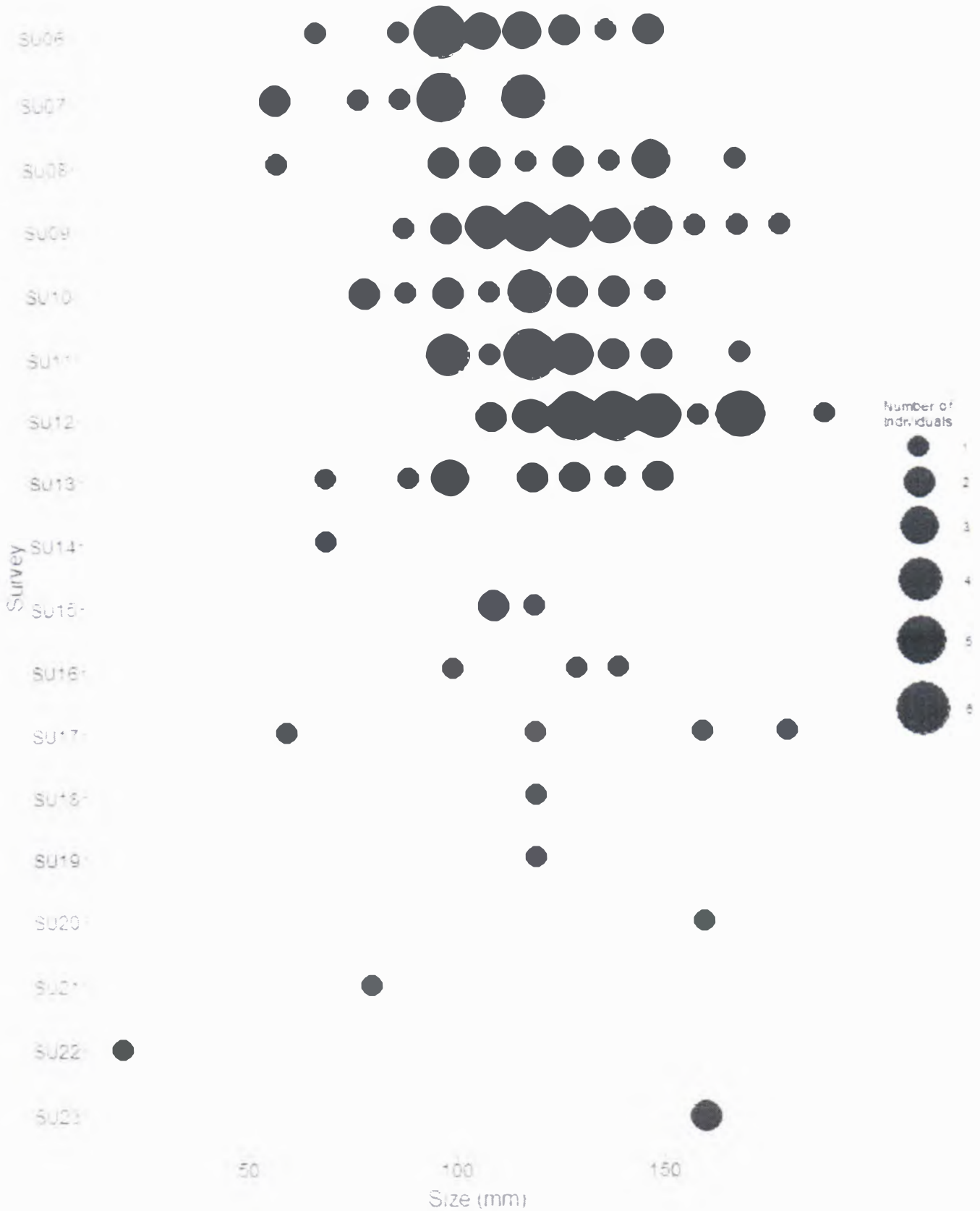


Species Counts and Sizes (where recorded) for *Pisaster* are shown below for this site. At some sites, other sea star species and *Katharina* are counted in addition to *Pisaster*. The sum of all individuals across all plots is displayed. Note that data gaps are represented by breaks in long-term count trend lines, but are not shown in size plots.

Pisaster ochraceus (Ochre Star) – counts



Pisaster ochraceus (Ochre Star) – sizes


SU06
SU07
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SU09
SU10
SU11
SU12
SU13
SU14
SU15
SU16
SU17
SU18
SU19
SU20
SU21
SU22
SU23
Survey
50
100
150
Size (mm)
Number of individuals
1
2
3
4
5
6

Outlook

Written public comment of Merit McCrea

From Merit McCrea
Date Thu 06/04/2026 04:31 PM
To FGC <FGC@fgc.ca.gov>
Cc kennethfrankesac

Commissioners and Staff,

In case you aren't already aware.

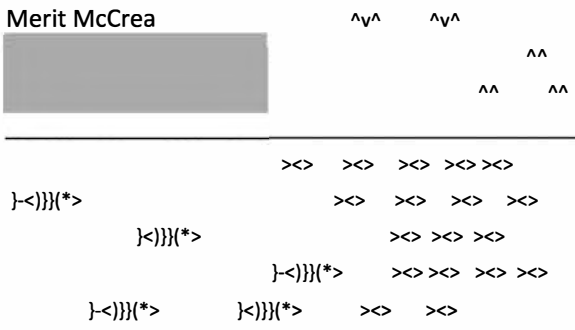
On May 13th, the Partnership for Observation of the Global Ocean hosted a webinar with Drs. Ray Hilborn and Mark Carr titled, Lessons Learned From The First 10 Years of the Marine Life Protection Act: A Scientific Discussion on MPAs and California's MPA Network.

The recording of this talk just recently posed on YouTube. It provides some important insights into the observed effects of California's MPA network as well as their thoughts, through a question-and-answer session. The video is just under an hour in length and well worth a watch if you weren't able to log into the talk or haven't already seen it. https://www.youtube.com/watch?v=4nnNZ2gcZQs&t=6s

Respectfully,

Merit McCrea

Merit McCrea
[redacted]



Outlook

Public comment for the May 19th MPA meeting

From Wendy Tochihara
Date Fri 05/15/2026 03:06 PM
To FGC <FGC@fgc.ca.gov>

Dear Commissioners and Staff,

My name is Wendy Tochihara. I am a lifelong angler, a conservationist, and served as a Regional Stakeholder during the Southern California MLPA Initiative. I lived through the original process, and I saw firsthand how much was taken from the fishing community. The MPAs we have today are already extremely large, and they removed many of our best fishing areas.

I want to be very clear: I have never supported the size or scope of these MPAs. But since we have to live with them, I believe in responsible management — sound science, no expansions, no major changes, and strict adherence to the Master Plan. The Master Plan was explicit: adaptive management is for refinements, not for reopening the network or creating new closures. The public was promised that the decadal review would not be used to expand MPAs.

I support the petitions that make small, reasonable adjustments without expanding MPAs.
But I strongly oppose Petitions 19, 20 nearshore, 23, 24, 27, 28, 29, 32, 33, and 34 because they attempt to expand MPAs or add new restrictions without measurable ecological benefit.

Many of these proposals misuse EFH and Hap-C. These are federal designations that already cover most of our coastline and do not require or justify new MPAs. Others propose boundaries in water far too deep for kelp to grow, or create enforcement problems by replacing clear physical markers with invisible lines on beaches.

And we cannot ignore water quality, one of the biggest ecological stressors on our coast.
We have an MPA at the Tijuana Slough, which is one of the most polluted coastlines in the United States. Beaches there are closed for months at a time because of cross-border sewage. That is a water-quality crisis, not a fishing problem. The MPA does nothing to fix it.

We also have a sewage outfall pipe running directly through the middle of the Laguna Beach MPA, along with repeated spills, stormwater contamination, and infrastructure failures. Again, these are pollution problems not fishing problems and MPAs do not address them.

Up and down the coast, we see sewage spills, runoff, warming, sedimentation, invasive species, and urchin overgrazing. These are the real drivers of ecological decline. Expanding MPAs will not fix any of these issues.

If the goal is ecological function, then focus on the actual stressors. Taking more fishing areas does not solve water quality, does not solve warming, and does not solve pollution.

The MPAs we have now are already some of the most restrictive in the world. They were designed to be durable. They were designed to last for decades. And they were designed with the understanding that adaptive management would not be used to expand them.

As someone who lived through the original MLPA process, I can tell you: the public gave up a lot. We were told the network would be evaluated, not expanded. We were told science would guide refinements, not justify new closures. And we were told the Master Plan would be followed.

I'm asking you to honor those commitments.

Stick to the Master Plan.
Stick to sound science.
No expansions.
No big changes.
Respect the original design and the communities who have already sacrificed so much.

Thank you.

Wendy Tochihara

Outlook

Re: Opposition to Additional Marine Protected Area Expansions and Restrictions

From Jeff N
Date Tue 05/19/2026 09:31 AM
To FGC <FGC@fgc.ca.gov>

California Fish and Game Commission
P.O. Box 944209
Sacramento, CA 94244-2090
fgc@fgc.ca.gov

Re: Opposition to Additional Marine Protected Area Expansions and Restrictions

Dear President and Commissioners:

I respectfully submit this letter in opposition to the pending Marine Protected Area (MPA) regulation-change petitions currently under review by the California Fish and Game Commission.

The Commission's public notice identifies multiple petitions affecting Southern California waters, including Laguna Beach SMCA, Point Vicente SMCA, Swami's SMCA, Point Dume SMCA, Cabrillo SMR, and Farnsworth Onshore/Offshore SMCAs. Public comments are currently being accepted regarding these proposed actions.

My opposition is centered on the continued expansion of fixed coastal MPAs where the stated justification involves broad claims regarding pelagic or highly migratory fish conservation. The available scientific literature does not support the conclusion that additional static MPAs are an effective primary management tool for highly migratory pelagic species such as tuna, yellowtail, dorado, bonito, and other wide-ranging fish.

Peer-reviewed studies consistently show that MPA effectiveness is highly dependent on species movement behavior and residency patterns. Roberts et al. found that reserve effectiveness declines significantly for species with high adult and juvenile movement because those species spend limited time inside reserve boundaries. This directly applies to pelagic fish populations that migrate across vast ranges well beyond localized coastal closures.

Likewise, Gilman, Kaiser, and Chaloupka concluded that there remains limited empirical evidence demonstrating that static pelagic fishing closures produce measurable ecological benefits for highly

migratory species. Additional reviews similarly caution that spatial closures alone are often insufficient for migratory fisheries and should not substitute for targeted fisheries management.

California already maintains one of the largest and most restrictive MPA networks in the world. Despite this, there has not been sufficient long-term, transparent, species-specific evaluation demonstrating that additional closures are necessary to achieve measurable pelagic stock improvements. The science does not presently establish a clear need for continual expansion of coastal no-take areas under broad "30x30" conservation targets. Many scientists and fisheries experts have criticized simplistic acreage-based conservation goals because protecting arbitrary percentages of ocean area does not automatically translate into improved ecological outcomes, especially for highly migratory species that spend little time within fixed reserve boundaries.

Rather than expanding additional MPAs, the State should prioritize comprehensive evaluation of the effectiveness of existing MPAs before imposing further access restrictions on the public. Existing closures should be studied more extensively using measurable biological objectives, transparent stock assessments, enforcement metrics, and independent scientific review.

I also wish to make clear that I support targeted conservation measures where science demonstrates they are appropriate and effective. Areas protecting relatively non-migratory or rebuilding species — such as the Cowcod Conservation Areas, which were specifically designed around species with limited movement patterns and documented stock concerns — are a far more scientifically defensible application of spatial fishery management than broad closures targeting pelagic fisheries.

In addition, I strongly support increased enforcement against illegal and unreported commercial and for-profit fishing activity. Rather than creating more closures for compliant recreational anglers, California should focus additional resources on enforcement and monitoring of commercial passenger fishing vessels, charter operations, and other for-profit fishing activity through AIS monitoring and vessel tracking compliance.

Federal law already requires many commercial vessels and inspected passenger vessels to carry and properly operate Automatic Identification System (AIS) equipment under 33 CFR § 164.46. AIS requirements generally apply to self-propelled commercial vessels 65 feet or greater in length, vessels certificated to carry more than 150 passengers, towing vessels of certain sizes, and other regulated commercial operations. AIS systems are intended to improve maritime safety, navigation transparency, and enforcement accountability.

Intentional disabling, manipulation, or improper operation of AIS equipment undermines both fisheries enforcement and maritime safety. There is significant concern within the recreational and commercial fishing communities that some for-hire and commercial operators intentionally turn off or tamper with AIS systems while engaged in fishing activity in order to avoid monitoring or enforcement scrutiny. Existing AIS requirements should be actively enforced before the State considers imposing additional blanket fishing restrictions on the public.

The State should work cooperatively with the United States Coast Guard and federal enforcement agencies to improve compliance with AIS carriage and operational requirements among commercial and passenger-for-hire fishing operations. Effective enforcement of existing regulations would likely provide greater conservation and accountability benefits than expanding additional fixed coastal MPAs targeting lawful recreational anglers.

California anglers are not opposed to conservation. Responsible recreational fishermen have historically supported science-based management, seasonal restrictions, catch limits, habitat

protection, and rebuilding efforts where justified by evidence. However, conservation policy must remain grounded in measurable biological outcomes rather than assumptions, acreage targets, or politically driven conservation metrics.

For these reasons, I respectfully request that the Commission reject any proposal expanding or increasing MPA restrictions unless the State can demonstrate clear, species-specific, evidence-based biological necessity supported by transparent scientific review and measurable performance standards.

Respectfully submitted,

Jeff Neubauer

April 17, 2026

Hi Susan:

You may find this article interesting and/or useful.

Lad Handelman was my oldest and dearest friend. I met him when I was 7 and he was 17. He died in Nov 2020. The next day I went into the hospital with congestive heart failure.

Laddie was an inventor of saturation diving; doing the first 400' dive at Santa Barbara in 1962. Also given credit for introducing Hyperbaric Medicine to the USA. The last couple years, his company Oceaneering has been working on the Space helmets and and suits for the trip to Mars.

SOS California: Can the Oil Industry and Environmentalists Bridge the Gap?

Commercial diving industry legend **Lad Handelman** has a plan to achieve the impossible. The founder of two New York Stock Exchange companies, **Cal Dive International** and **Oceaneering International**, has made his mark on the subsea industry in countless ways, and now he hopes to have an impact on healing the chasm between California's liberals and conservatives on the subject of [gasp] **Big Oil!** This interview was conducted by Jim Buckley of the Montecito Journal, and is reprinted with permission.

Certain portions of the interview have been updated to reflect subsequent research and developments through July 2007.

Lad Handelman lost the use of his body from his chest down as the result of a 1985 skiing accident. His spectacularly modern home near the top of TV hill overlooks the South Coast of Santa Barbara County from Point Magu to the boat harbor below. He also looks out upon the Channel Islands and the Santa Barbara Channel, under which, Lad knows, lies an enormous pool of energy that both local and state officials have decided is not worth tapping into. Lad – a former oil-industry underwater contractor, and later abalone farmer – thinks this policy is extremely unwise.

"World Events are unfolding dangerously at a speed and scale unlike at any other time period in history," Lad says. "Intrinsic to and perhaps the root cause of this danger," he continues, is 'energy' – or, in America's case, the lack thereof." Mr. Handelman proffers that because California's environmental policies have driven the nation's environmental policy, America is being "strangled by its own irrational choices," e.g. blocking all future offshore development "regardless of the crying need for money and energy."

Lad Handelman wants to bring the energy business back to the Santa Barbara Channel and has formed a nonprofit organization, **SOS California**, to "bridge the gap" between the environmentalists and energy industry.

"Right now," he says, "there appears to be a huge unnecessary conflict fed by misinformation and political paralysis, e.g. many politicians know the facts and the benefits of development but for fear of losing votes, cannot reverse their anti-oil positions. Californians cannot afford this. In these times, we must be willing to take a new look – to challenge the unchallengeable. I believe that once they learn the facts, most Californians will agree that the basic premises supporting the anti-oil movement are outdated, and they will want to join our bridge-building effort."

Lad agrees that replacing oil and gas with new cleaner energy will remove a source of pollution in the air and water, and there will be a better place for us humans overall, but he says, "until that day actually comes, we need to preserve every bit of oil and gas energy we can." Lad has other concerns as well.

"Other than the obvious need to replace petroleum energy with clean energy there's another huge pollution problem that is staring us right in the face e.g., the enormous amount of natural pollution coming up from the sea floor, right here, in our own front yard."

He continues, "As I will explain later there is far more damage to our ocean waters and air quality now coming from these natural seeps than is coming from all the offshore production and onshore motor vehicles combined. The cause of this seep pollution can and needs to be removed. We can remove it by extracting it. Like pulling a sore tooth. Like purging a leaking septic tank."

You suggest that, by extracting the oil and gas that is now in the channel, we would be cleaning up the environment. How? Please explain.

The ocean environment right now, especially from Point Conception down, is a place where the biggest oil seeps in the Western Hemisphere come from.

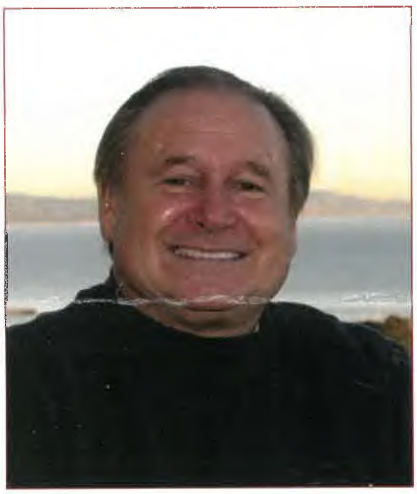
The Marine Science Institute at the University of California at Santa Barbara (UCSB) had earlier published its findings that about 4,200 gallons of oil oozes to the surface daily in a single 6-mile by 3-mile stretch seep area off Coal Oil Point. "But the amount now is easily more than double that." (Ira Leifer, UCSB Marine Science Institute, Research Scientist, February 1, 2005). That is just one seep area. According to the California State Lands Commission reports, there are one thousand two hundred recorded seeps south of Point Conception. Based on this new information when I visited with Leifer's research partner, Dr. Lyendyke, I asked "Is it fair to say that all-in there is now at least 10,000 gallons a day of seepage being released from below Point Conception down?" His reply, "Yes, you can say that."

At this rate of 10,000 gallons a day what this translates to is that over every twelve-month period, if nothing changes, if we do nothing, it is guaranteed that our environment will suffer the same amount of oil pollution as from the catastrophic '69 spill. **Our ocean is being chronically poisoned.** Unknowingly, by choosing to block development, which would eliminate this seep problem, we instead are condemning our ocean, our beaches and our air quality to never-ending pollution. Does blocking development make any sense?

So, are you saying that offshore development will help our problem with the tar on the beaches?

Yes I am. As a commercial diver, I could see large natural "pancakes" of oil slowly rising up from the sea floor, four to eight feet across and several inches thick. You could punch that oil with your fist, and it wouldn't make a mark on your glove because it was hard. These pancakes rose to the top, blanketed the kelp beds and presented a danger to marine mammals – sea otters for one. And they also came ashore.

Since beach tars and petroleum odors come from leaked oil and gas, the solution is to eliminate where this pollution is coming from. Those great quantities of submerged "oil-pancakes", thanks to past extraction, are pretty much gone now. And while oil tars still soil the beaches from Carpinteria up to Gaviota, overall there is much less now and in many spots only a fraction of what there was prior to extraction. It seems to me that too many of us are putting our concern in the wrong place—we have it backwards. Consider this: The total leakage from the last thirty-nine years of offshore production in all of California (842 barrels) has made less pollution than what is coming from Santa Barbara's natural seeps every single week! I suggest that it's time we stop worrying about the so called "risks" of production and deal with the real problem—getting rid of the seeps. Our beaches would be tar-free if the rest of the untapped reservoirs were also drained.



How can extraction help with pollution and how long would it take?

These reservoirs are mostly shallow. Oil seeps have been coming up from sea floor cracks for thousands of years. These reservoirs were originally under very high pressure, emitting enormous volumes of oil and gas. After the pressure has been reduced the seepage stops. Think of a balloon being squeezed and its contents are being squeezed out. It's the pressure that does that. But when the squeezing stops, what is left of the balloon's contents will be at equilibrium and remain inside.

If we can de-pressurize these reservoirs to where there is no more pressure to drive the oil and gas, there would be no more oil or methane gas being forced up through the sea floor cracks.

Reservoir development projects take many years. Typically, the life of a field being developed is 20-25 years. The first development at the Coal Oil Point reservoirs began decades ago and a portion of this area is still being produced. Scientific recordings demonstrate that seep levels here are less than half of the initial volume coming from seeps. These same scientists attribute this seep reduction to reservoir pressure relief, the result of extraction. We need to use this model as a way of dealing with ALL the remaining seeps. To me, to do any less would be like patching only half the holes that caused a flat tire.

Lad Handelman tells us that it is time that environmentalists, energy groups and politicians work together to benefit the environment and re-energize State and County coffers.

Lad Handelman proposes bringing the oil business back to California in an environmentally friendly way, and that funds from the oil industry should be used to help heal the ocean.

If you somehow convince the community to go ahead and pump out what oil and gas is there, what would the process of extraction look like?

It could be achieved in various environmentally friendly ways. Aside from slant drilling, another way would be to install one single production and collection platform in a new lease area which can then act as a hub for a multitude of pipelines emanating outward in various directions to distant sub-sea wellheads (a sub-sea wellhead is the uppermost component of a producing well which connects the oil flow coming up from the reservoir to a pipeline lying on the sea floor). Except for the central gathering platform, there will be nothing else to be seen.

Other types of discoveries might lend themselves to being developed **entirely** sub-sea, with pipelines from wellheads going directly to an onshore site requiring no platforms at all. These subsea/satellite methods are common practice today and after forty years, are well proven.

In the early 'sixties, between Coal Oil Point and Gaviota, thirty such entirely sub-sea production systems were installed in state waters close to shore, and the public never even knew they were there.

Twenty-five years later, when the reservoirs had been emptied, the subsea hardware was removed and hauled away. The public never saw them in all that time. These subsea installations provided California with trillions of cubic feet of natural gas and they generated millions of dollars of new revenue for state and county coffers.

This well-proven technology can be applied again right here.

How easy or difficult will it be to prevent, or at least minimize, the danger of another oil spill catastrophe like the one in 1969?
Nothing in the world is or will ever be 100% guaranteed failure-proof. Having said that, anyone who looks at the record can see that since the 1969 "catastrophe", 39 years and 10,000 new wells ago, even through hurricanes and destroyed platforms, offshore oil production is catastrophe-free. Since then, Santa Barbara's only "remarkable spill" was from a pipeline break off Point Pedernales, which was officially recorded as 163 barrels (Santa Barbara County Energy Department).

All told, in all these 39 years, only 842 barrels have spilled from offshore operations. And according to US Fish & Game records, with little, if any, damage to marine life.

By contrast, nearly 2,000 barrels a week, fifty-two weeks a year, are gushing up from natural seeps. Since the original spill in 1969, this means there have been only **842 barrels** spilled from offshore operations **versus 1,820,000 barrels** pouring out from these natural seeps. (Ref. MMS) And remember, this is the identical oil. There is no less damage from a fresh gallon of natural oil seep than a fresh gallon of pipeline spill. While anti-oil rhetoric claims state that because natural seeps are from nature and do not erupt all at once they cannot be compared to a production spill. That statement is nothing more than unscientific gibberish. Just ask a sea otter lying on the beach covered in oil from one of the seeps. See what he says just before he perishes. The same goes for all the dead birds found covered in oil.

That record is astounding. It sounds like you're saying we no longer have anything to fear from offshore development—so what has changed?

There are many reasons why offshore production has become as safe as it now is. In 1970, the year after the catastrophe, new and stricter regulations and other controls were established by the US Minerals Management Service (MMS), California's Environmental Protection agency and the newly created Santa Barbara Energy Department. Regulations were put in place requiring 24-hour/day monitoring and tough penalties for even minuscule violations (even a one pint leak must be reported).

They also required more and stronger safeguards. Should by chance a pipeline be snared and break, all flow is instantly stopped by automatic and redundant shut-in valves. Each and every offshore system is required by law to include several of these zero tolerance failsafe mechanical devices. And for even greater redundancy, onsite technicians monitor flow pressures and via remote controls can trigger a shut-in as well. A perfect current example is what happened in the Gulf of Mexico with Hurricanes Rita and Katrina. More than 100 drilling rigs, production platforms and pipelines were destroyed or torn out by their roots and moved miles away. Amazingly, there was not even one spill that amounted to anything. The failsafe shut-in systems worked! So when the next big earthquake hits and the city's gas lines rupture and explode, I'd rather be on an offshore platform than in my own home.

Based on all this, my personal take is that I am more concerned about my steering wheel coming off or my water heater blowing up than I am about another uncontrolled offshore catastrophic blowout. Lets put this fear to bed, where it now belongs!

For example, in the early sixties, we installed 30 of these subsea wellheads, piped to shore, and the public never knew they were there. They were taken out 25 years later and the public never saw them in all that time. They provided a great economic benefit to the county through the state system, and a great deal of energy.

What about natural gas and methane seeps? How big of an issue are these?

This is a huge issue, as global warming, which comes from such emissions, has become the whole world's hot button. Once again, the public in general is unaware of the magnitude of these gas seeps and the extent of damage they reek on our air quality every day. According to Santa Barbara County Air Pollution Control's most recent report (2007 Clean Air Plan), the volume of greenhouse gases emitted by all our cars, trucks and vessels combined is polluting our atmosphere at the rate of 4,800 tons/year. This is a frightening amount which we're trying hard to reduce. And yet, according to these same records, even more pollution is spewing out from natural offshore seeps—a recorded 6,075 tons/year! I found this information unbelievable. When I asked the County officials what I thought was a reasonable next question, "Why in the world aren't we doing something about this?" The answer was, "Because these natural emissions are not regulated or controlled, addressing them is not included in the County's Clean Air Plan." So you see, dealing with this issue is not even on their radar and certainly not in their budget. **UNBELIEVABLE!**

The researchers may be able to validate the existence of these dangerous emissions using scientific methods, but what can we the public connect with to help us understand this phenomenon ?
From underwater, these gushers can be witnessed shooting out of holes on the seafloor, and occasionally observed as they boil into the atmosphere. For example, just a year ago a group of UCSB researchers were right on-site when a very visible and dramatic occurrence of one of these methane blowouts happened right next to their boat. Amazingly, they got the whole episode on film. The incident was written up by *Santa Barbara News-Press*, "Was Methane Blowout Earth's Warning Signal?" (August 27, 2006). This article describes "a big blowout of methane from an undersea seep... when three separate streams of bubbles burst out of the tar and shot up 60 feet to the surface where a cloud of methane drifted over the UCSB air monitoring station."

The article goes on to say that, "Scientists have suspected that underwater explosions of methane like this occur frequently and that a major explosion could trigger runaway global warming."

If we took the pressure out of these gas reservoirs, this danger, as remote as it may be, would go away. And we'll have dealt a blow in the fight against global warming.

Going back to the idea of extraction, if such extraction were allowed, how much oil and how much money are we talking about?
Referring to the Santa Barbara-Ventura Basin, a 1997 Minerals Management Service report stated: "Recoverable oil reserves from the Outer Continental Shelf waters alone are estimated at 9.0 to 12.6 billion barrels." This translates into new revenues in excess of $500 million per year, so the known financial prospect is huge. Yet one anti-oil spokesperson makes the unsupportable unchallenged claim that "even if produced, all of Santa Barbara's oil reserves would only supply the United States for 28 days." This anti-oil rhetoric is incorrect and of no relevance. Twenty-five years of new revenues and new energy is what we need, not rhetoric. We are talking about a lot of money that could do a lot of people a lot of good.

Everyone resents the large profits made by the huge oil companies. But look at it this way: First off, they'd have to pay out a sizeable chunk of their would-be profits in the form of royalties (e.g., the $500 million). On top of that, they would have to pay out to us nearly half of the remaining profits in the

form of corporate taxes, which means even more money to the state and counties. Can you imagine how much money we're talking about here?

Who would get all this money?

Once collected at the federal level a portion goes to the State and then a part of that amount finally is received at the county level. However, under the current political climate and the recent experience of other States, we know that if California is willing to reopen California offshore development, the energy companies will be willing to pay a higher royalty percentage. The end result will be a huge new revenue source to benefit all Californians and particularly help fund many needed projects throughout Santa Barbara County which have long been delayed for lack of funding.

So, you are hoping this money, or at least a good portion of it, could be dedicated to cleaning up the creeks, streams, and ultimately the ocean?

Absolutely. A stipulated portion of this new revenue can be earmarked to expand or replace Water Treatment Plants which were supposed to clean contaminated run-off water before it flows into the ocean. Our Sewage Treatment Facilities also need major modernizing and expansion to deal with the increased bacterial effects from our exploded population (public health and coastal wildlife are threatened, marine organisms are dying off).

Another stipulation would be to fund long-term UC research and development programs designed to accelerate alternative energy projects. By using all the brain power of UC's number of world-class scientists (UCSB alone has five Nobel Prize winners), we may be able to advance the advent of practical clean energy by many years. The money for these grants will be there to be had. Why not take advantage of this invaluable natural resource for these purposes- rather than seeing it squandered through cracks in the ocean floor? If my mother saw me allowing such wastefulness go on she would disown me.

Have any local politicians or community leaders come forward in support of your project?

No. We have only presented this to two of them – I won't say who they are – but they both are afraid to touch it because they see being in any way connected to this issue as "political suicide." At the same time, these same representatives say that if we can show them enough public voice for the project, they'd look at it again.

What's missing from this picture is that the public has not been informed or made aware of the facts, let alone had the opportunity to voice its opinion. I believe if the public did have the opportunity, it would voice very strongly that we cannot keep following our current path "to nowhere." I believe our populace will agree that it's time we re-examine things, that we need change!

What is SOS California's first step, to convince the public or environmental groups?

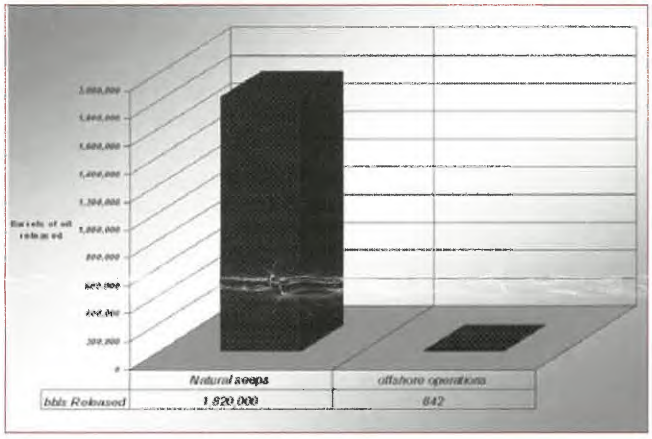
I don't think we can convince anyone of anything they don't want to be convinced of—that is not our job. Education is Step One and that is what **SOS California** is all about. Thanks to the advent of web sites and blogs, we can now spread information throughout the community and state within months, not years, and those that can look at it with open minds can see for themselves that it is time to put aside our fears from 1969 and join the rest of the world in making good use of energy.

So, what's your plan to roll out this information and begin the process of educating the public?

The first thing, which we are now working on, is to complete our website, **SOScalifornia.org**. This will allow people to check out the science, check out the records and satisfy themselves that our information is factual.

Next will be to expand this informational website into also becoming a central platform for all to share information and openly express their views and ideas. This becomes a vehicle for Californians to communicate their views to our politicians. I believe that once our politicians see this effort as a true grassroots movement, they'll have to listen. And perhaps, may even feel compelled themselves, to re-examine the current offshore energy blockade policy.

So **SOS'** job is to create the mechanism where all Californians can get current information,to see the whole picture- and then be empowered to do something about it.



A look at natural vs. manmade oil pollution offshore Santa Barbara since 1970. There is virtually no comparison between natural oil seepage and spills caused by man.

Aside from the steps you've just mentioned, what do you see as the longer term strategy?

Based on my experience, it would be futile at this time to detail any long-term plan. As events unfold, the optimal strategy will reveal itself. For now, we are concentrating our efforts on getting the word out.

The public, due to misinformation campaigns from the anti-oil environmentalist lobby, is unaware of the staggering magnitude of natural oil seepage.

For the record, what is in it for you?

What's in it for me is peace of mind from knowing that I did everything I possibly could do to promote change that is good for the environment and for California. My history demonstrates that I am an environmentalist. I've spent cash money, a couple hundred thousand dollars, replanting abalone in these islands. I have spent fifteen years of my life supporting marine mammal and other resource protection. I see myself as being a reality-based steward of the ocean. At this point in my life I do not need to prove anything to anyone. But neither can I sit back and let a few fear-mongers inflame the public with old information to promote their own self-serving agendas—living off the results of that fear—and in the process do more harm than good to our environment and to the best interest of the community.

I'm just an average guy who wants to do the right thing. I don't and won't get any money from this. I just want to go to sleep at night knowing that I spoke up for what I know is right. **UW**

For readers out there who want to help, we invite you to join our **SOS California** effort. You can go to our website or call the office and get started NOW! Contact:

Phone: 805-963-4596
email: info@SOScalifornia.org
SOScalifornia.org

Outlook

Golden State Wind lease off California terminated

From mbcfo member <mbcfo1972@gmail.com>

Date Tue 04/28/2026 08:27 AM

To Doug Boren <douglas.boren@boem.gov>; CentralCoast@Coastal <CentralCoast@coastal.ca.gov>; Andrea Chmelik <Andrea.Chmelik@asm.ca.gov>; Dobroski, Nicole@SLC <Nicole.Dobroski@slc.ca.gov>; Eckerle, Jenn@CNRA <Jenn.Eckerle@resources.ca.gov>; Executive Officer of SLC <ExecutiveOfficer.Public@slc.ca.gov>; ExecutiveStaff@Coastal <ExecutiveStaff@coastal.ca.gov>; FGC <FGC@fgc.ca.gov>; Flint, Scott@Energy <Scott.Flint@energy.ca.gov>; bgibson@co.slo.ca.us <bgibson@co.slo.ca.us>; Greg Haas <greg.haas@mail.house.gov>; Nancy Hann <nancy.hann@noaa.gov>; Harland, Eli@Energy <Eli.Harland@energy.ca.gov>; Gonzalez, Kathleen@Waterboards <Kathleen.Gonzalez@Waterboards.ca.gov>; Kalua, Kaitlyn@CNRA <Kaitlyn.Kalua@resources.ca.gov>; Kato, Grace@SLC <Grace.Kato@slc.ca.gov>; Zara Landrum <zlandrum@morrobayca.gov>; JANO.DEKERMENJIAN@sen.ca.gov <JANO.DEKERMENJIAN@SEN.CA.GOV>; Liu, Serena@Waterboards <Serena.Liu@waterboards.ca.gov>; Lucchesi, Jennifer@DOC <Jennifer.Lucchesi@conservation.ca.gov>

Cc Dayna Bochco <CommissionerDBochco@coastal.ca.gov>; Linda Escalante <CommissionerLEscalante@coastal.ca.gov>; Meagan Harmon <CommissionerMHarmon@coastal.ca.gov>; Dr. Caryl Hart <CommissionerCHart@coastal.ca.gov>; Huckelbridge, Kate@Coastal <Kate.Huckelbridge@coastal.ca.gov>; Jackson, Raymond@Coastal <Raymond.Jackson@coastal.ca.gov>; Ariel Kelley <CommissionerAKelley@coastal.ca.gov>; Lopez, Chris@Coastal <Chris.Lopez@coastal.com>; Susan Lowenberg <CommissionerSLowenberg@coastal.ca.gov>; Ann Notthoff <CommissionerANotthoff@coastal.ca.gov>; Jose Preciado <CommissionerJPreciado@coastal.ca.gov>; Effie Turnbull-Sanders <CommissionerETurnbull-Sanders@coastal.ca.gov>; Mike Wilson <CommissionerMWilson@coastal.ca.gov>; Bill Barrow <billb@portsanluis.com>; Drew Brandy <drewb@portsanluis.com>; Mary Matakovich <marym@portsanluis.com>; Richard Scangarello <richards@portsanluis.com>; Bob Vessely <bobv@portsanluis.com>

Tom Hafer
Secretary MBCFO
(805) 610-2072
mbcfo1972@gmail.com

Trump Administration Will Pay More Energy Firms to Cancel Wind Farms

In exchange, the companies will invest in oil and gas projects, echoing an earlier deal with the French energy giant TotalEnergies.

Listen · 6:32 min


By Maxine Joselow and Brad Plumer

April 27, 2026 Updated 4:58 p.m. ET

The Trump administration will pay energy companies hundreds of millions of dollars to abandon their plans to build two wind farms off the U.S. coast, the Interior Department said Monday, in a repeat of a tactic the government used to cancel other offshore wind leases last month.

The firms will forfeit their leases in federal waters for the two wind farms, one of which would have been built off New York and New Jersey and the other off California. The government will reimburse the companies a combined $885 million, the amount they paid for the leases under the Biden administration.

In exchange, the companies have pledged to invest that money in oil and gas projects, including liquefied natural gas facilities along the Gulf Coast.

The deals are modeled after a similar agreement last month with the French energy giant TotalEnergies. TotalEnergies forfeited its leases for two wind projects planned off the coasts of New York and North Carolina, while committing to a range of fossil-fuel investments.

The agreements are extraordinary transfers of taxpayer dollars to private companies for the purposes of throttling offshore wind power, a source of clean energy that Mr. Trump has disparaged for decades. The president has claimed falsely that offshore wind turbines do not work and that they are killing whales.

The administration has pursued a shifting strategy for stifling the country's nascent offshore wind industry. In December, Interior ordered a halt to construction of five wind farms off the East Coast, but federal judges have struck down those moves. By dealing directly with developers, the administration may be able to avoid legal challenges.

The first new agreement affects Bluepoint Wind, a wind farm in the early stages of development off New York and New Jersey. The project was proposed by Global Infrastructure Partners, a part of asset manager BlackRock, and Ocean Winds, which is itself a joint venture between Engie and EDP Renewables, two European clean-energy firms.

The second deal would cancel Golden State Wind, another early-stage venture off California's central coast. Golden State Wind is a 50-50 partnership between the developers Ocean Winds and Reventus Power.

Both Bluepoint Wind and Golden State Wind agreed not to pursue any new offshore wind projects in the United States, although that pledge would not necessarily apply to the companies behind the ventures.

Ocean Winds has also been developing another giant wind farm known as SouthCoast Wind, off Martha's Vineyard, Mass., that is much further along in the planning and permitting process. That project is not affected by Monday's announcement, although it has essentially been paused since Mr. Trump took office last year.

“We did not take this decision lightly,” said Michael Brown, the chief executive of Ocean Winds North America. “But when the underlying conditions in a market change, we must adapt. In this case, receiving a refund for the lease payments we had invested and exiting on agreed terms was the right outcome for our shareholders and partners.”

In January 2020, Larry Fink, the chief executive of BlackRock, said he intended to use the trillions of dollars managed by the firm to combat climate change. But six years later, BlackRock and many other Wall Street institutions have walked back or dropped their sustainability commitments.

A spokesman for BlackRock, Curtis Chou, referred inquiries to Global Infrastructure Partners. Salim Samaha, the chair of midstream and liquefied natural gas at Global Infrastructure Partners, said in a statement that the firm had “very constructive” discussions about the deal with Interior Secretary Doug Burgum and it appreciated the “practical resolution.”

Mr. Burgum said the offshore wind projects had made more financial sense under the Biden administration, which offered lucrative tax credits for wind turbines, solar panels, electric cars and other green technologies. The Republican-controlled Congress eliminated those incentives last summer.

“The companies that bid for these offshore wind leases were basically sold a product in 2022 that was only viable when propped up by massive taxpayer subsidies,” Mr. Burgum said in a statement. “Now that hard-working Americans are no longer footing the bill for expensive, unreliable, intermittent energy projects, companies are once again investing in affordable, reliable, secure energy infrastructure.”

Legal experts and congressional Democrats have raised questions over the Interior Department’s attempts to buy back leases, saying that it is unclear whether the agency has the authority to voluntarily reimburse companies for lease payments.

This month two top House Democrats sent Mr. Burgum a letter asking for more details of the deal with TotalEnergies. “On its face, this agreement is an unprecedented use of taxpayer funds to pay a private company for voluntarily relinquishing legally obtained leases,” the lawmakers wrote. They added, “There is no clear legal basis for this closed-door settlement.”

It is also unclear how much the companies will actually invest in new fossil fuel infrastructure. In documents released this month, Interior revealed that it would count investments that TotalEnergies made before the deal toward its pledge, raising questions over whether the company had any obligations to make additional investments.

Maxine Joselow covers climate change and the environment for The Times from Washington.

Brad Plumer is a Times reporter who covers technology and policy efforts to address global warming.

Outlook

Vineyard Wind: a 'Dormant Wind Farm Graveyard' Without any required decomissioning funds.

From Tom Hafer <somethingsfishy@charter.net>

Date Fri 05/01/2026 07:17 AM

To Doug Boren <douglas.boren@boem.gov>; CentralCoast@Coastal <CentralCoast@coastal.ca.gov>; Andrea Chmelik <Andrea.Chmelik@asm.ca.gov>; Dobroski, Nicole@SLC <Nicole.Dobroski@slc.ca.gov>; Eckerle, Jenn@CNRA <Jenn.Eckerle@resources.ca.gov>; Executive Officer of SLC <ExecutiveOfficer.Public@slc.ca.gov>; ExecutiveStaff@Coastal <ExecutiveStaff@coastal.ca.gov>; FGC <FGC@fgc.ca.gov>; Flint, Scott@Energy <Scott.Flint@energy.ca.gov>; bgibson@co.slo.ca.us <bgibson@co.slo.ca.us>; Greg Haas <greg.haas@mail.house.gov>; Nancy Hann <nancy.hann@noaa.gov>; Harland, Eli@Energy <Eli.Harland@energy.ca.gov>; Dr. Caryl Hart <CommissionerCHart@coastal.ca.gov>; Gonzalez, Kathleen@Waterboards <Kathleen.Gonzalez@Waterboards.ca.gov>; Huckelbridge, Kate@Coastal <Kate.Huckelbridge@coastal.ca.gov>; Kalua, Kaitlyn@CNRA <Kaitlyn.Kalua@resources.ca.gov>; Kato, Grace@SLC <Grace.Kato@slc.ca.gov>; Zara Landrum <zlandrum@morrobayca.gov>; JANO.DEKERMENJIAN@sen.ca.gov <JANO.DEKERMENJIAN@SEN.CA.GOV>

Vineyard Wind: a 'Dormant Wind Farm Graveyard' Without GE Renewables?

As Vineyard Wind makes its concerns public, one striking fact proves significant: there is no apparent funding set aside for decommissioning should the project fail.

Linda Bonvie

Vineyard Wind turbine AW 38, which lost one of its massive blades in July of 2024. Seven months later, the same turbine was also struck by lightning. *Photo MV Times, John Zarba*ion...

How is it that a $4.5 billion project, fully sanctioned to be built by U.S. government agencies, funded in part by 27 banks for over $2 billion, and spearheaded by two large foreign corporations, is totally dependent on the “service and maintenance” of just one company?

According to Klaus Moller, VP of Vineyard Wind’s overseas

parent, Copenhagen Offshore Partners, without the continued work of GE Renewables (GER), which produced and installed – and subsequently removed -- 72 defective turbine blades at Vineyard Wind (including one that disintegrated into the water in July of 2024), the project may fall into default with its lenders foreclosing.

At the end of February, when GER sent a "termination notice" to Vineyard Wind (which is located around 15 miles south of both the islands of Nantucket and Martha's Vineyard, Mass.), based on past due payments of $360 million, Moller's company wasted little time in going to court for a "temporary restraining order" to keep GER on the job. And this was despite Vineyard Wind describing the 72 replaced turbine blades as being "so poorly made that they were beyond repair."

Vineyard Wind argues that GER owes them $853 million due to the blade disaster, and if they stopped working, the project would be done for. And so on April 17, a superior court judge agreed, giving Vineyard Wind what it was asking for. GE Renewables, despite its "poor performance," must remain on the job.

Unlike other contract disputes, however, this one involves a whole lot more than the bickering of a bunch of major corporations. That's because the "poorly made" 70-ton turbine blade from GE's Canadian plant, which disintegrated

at the height of the 2024 summer season, caused pieces of fiberglass, foam, and plastic to wash ashore, closing some Massachusetts beaches and leaving behind an unknown toxic legacy.

But what this litigation, and Moller's dramatic testimony, should bring to light is the absence of any known financial security for removal of this and other projects, making a "wind farm graveyard" at some point a very real possibility.

Deficient performance and even worse turbine blades

Vineyard Wind doesn't give GE Renewables much of a job performance review. If it were a Google rating, it would be "no stars, cannot recommend."

As stated in its complaint against the company, "the bonding in some of the original blades was so deficient that the blades had to be repaired in place before they could be removed so that they did not collapse into the water."

The complaint goes on to say that GER personnel "negligently" performed their work, and this "deficient performance" has "been poor and behind schedule at every phase" with the "incredibly poor performance of GER" causing "catastrophic damage."

The catastrophe Vineyard Wind is referring to occurred back in July 2024, when a 351-foot-long Vineyard Wind blade fell

apart and sent its cargo-ship load of toxic junk into the ocean off southeastern New England, causing significant amounts of debris to wash up on beaches in Massachusetts and Rhode Island.

At that time, however, the public was not told that an incompetent company was installing “poorly made” and “deficient” wind turbine blades, but that such events are “highly unusual and rare,” something proven to be far and away from the truth (more on that in a minute).

But as far as putting up the collateral as required by the Code of Federal Regulations to ensure the availability of hundreds of millions of dollars required to either remove the project from the water at the end of its working life or should it fail for any reason prematurely, that is something put aside for later. As in a decade-and-a-half later.

As requested by Vineyard Wind way back in 2017, and again in 2021, the company would rather “defer” its “financial assurance” for decommissioning until year 15 of its operations.

In June of 2021, the Bureau of Ocean Energy Management (BOEM) approved that request, saying at the time that Vineyard Wind showed several “risk-reduction factors” that would allow for such a deferment, an important one being “the use of proven wind turbine technology.”

What that even means isn't clear, but one thing is: Vineyard Wind apparently knew that GE Renewables was doing a piss-poor job by installing "deficient" blades that – fingers crossed – would keep on spinning, all while trying to reassure the public that its blade failure was an out-of-the-ordinary occurrence.

BOEM concluded in a 2021 letter to the company that "*these risk-reduction factors, along with our review of the Project's projected revenue and costs, demonstrate that deferring the decommissioning financial assurance requirement until 15 years after construction does not expose the U.S. Government to undue risk.*"

Considering how Vineyard Wind's CEO describes its current predicament and dependence on GER, perhaps it's the environment, marine life, and coastal residents and visitors who are at such "undue risk."

Other offshore wind projects, including Revolution Wind, Atlantic Shores, and South Fork Wind, have also been gifted with this special money-saving "departure" from regulations.

"Wild-West conditions"

It's a poorly kept industry secret that power generated by wind, both on and offshore, has a robust history of blade failure.

Statistically speaking, the company GCube, whose web page describes them as "renewable energy insurance experts," hasn't provided any data on turbine blade failures since 2014, making assorted news reports the only way to find out about them. At that time, however, GCube reported 700,000 blades in operation with a failure rate of 3,800 incidents a year.

Where updated data may be hiding was a question asked in a 2023 report put out by The Turbine Group, a research collective, titled *The Toxic Wings*. The secrecy involved is due in part, the authors said, to "the fact that the wind turbine industry guarantees confidentiality to its buyers and users.

"We know of no other industry that (has) been allowed such 'Wild West' conditions ever," the report noted, describing wind energy as an "unproven technology...without a scientific basis for the overall scope of consequences" to our health, safety, and the environment.

For example, as reported by *The Oregonian*, in February of 2022 at Portland's Biglow Canyon onshore wind farm, one of the turbine's blades was described as having "launched into the night.

"No one saw it. No one heard it. But it was evidently a violent affair.

“The skinny blade, as tall as an 11-story building and weighing more than four Toyota Camrys, soared the full length of a football field. It plowed a furrow four feet deep in the wheat stubble where it eventually landed.”

That same year at sea, Orsted requested “no sail zones” that spanned three countries when both the rotor and blades were dispatched from its turbine at its Anholt wind area in Denmark.

Blades have fallen, been “torn off” and simply soared through the air all over the world, including “crashing down” in the town of North Findlay, Ohio, in 2024.

And just recently, on April 22, the Drumlins Park onshore wind project in Ireland was “temporarily shut down ‘as a precaution’” when a giant blade, called the “largest onshore turbine model,” became mysteriously disabled, with most of the blade hanging down from a broken section.

That blade was manufactured by the same company accused of “incredibly poor performance” by Vineyard Wind, GE Renewables (since renamed GE Vernova).

Truth be told, the general public has no real knowledge of the financial solvency of these (mostly foreign) wind companies that are filling our maritime environment with many hundreds of massive turbines and miles upon miles of

trenched underwater cables.

And if we go by what Vineyard Wind head Moller testifies to, they can be upended at any time, potentially leaving our seascape littered with wind junk and no plan or dollars to clean up the mess.

Outlook

Cost of renewables to double by 2030

From mbcfo member <mbcfo1972@gmail.com>

Date Sun 05/31/2026 06:35 AM

To Doug Boren <douglas.boren@boem.gov>; CentralCoast@Coastal <CentralCoast@coastal.ca.gov>; Andrea Chmelik <Andrea.Chmelik@asm.ca.gov>; Dobroski, Nicole@SLC <Nicole.Dobroski@slc.ca.gov>; Eckerle, Jenn@CNRA <Jenn.Eckerle@resources.ca.gov>; Executive Officer of SLC <ExecutiveOfficer.Public@slc.ca.gov>; ExecutiveStaff@Coastal <ExecutiveStaff@coastal.ca.gov>; FGC <FGC@fgc.ca.gov>; Flint, Scott@Energy <Scott.Flint@energy.ca.gov>; bgibson@co.slo.ca.us <bgibson@co.slo.ca.us>; Greg Haas <greg.haas@mail.house.gov>; Nancy Hann <nancy.hann@noaa.gov>; Harland, Eli@Energy <Eli.Harland@energy.ca.gov>; Dr. Caryl Hart <CommissionerCHart@coastal.ca.gov>; Gonzalez, Kathleen@Waterboards <Kathleen.Gonzalez@Waterboards.ca.gov>; Huckelbridge, Kate@Coastal <Kate.Huckelbridge@coastal.ca.gov>; Kalua, Kaitlyn@CNRA <Kaitlyn.Kalua@resources.ca.gov>; Kato, Grace@SLC <Grace.Kato@slc.ca.gov>; Zara Landrum <zlandrum@morrobayca.gov>; JANO.DEKERMENJIAN@sen.ca.gov <JANO.DEKERMENJIAN@SEN.CA.GOV>

Does California really want to follow the UK off the renewable energy cliff? The UK (the taxpayer/consumer) is stuck subsidizing BILLIONS to keep the grid working.

Tom Hafer
Secretary MBCFO
(805) 610-2072
mbcfo1972@gmail.com

Cost of renewables to double by 2030

Summarize

Still no serious alternative to the cost of Net Zero on offer

Institute of Economic Affairs

Introduction

In Autumn last year the Government released information on international energy prices. The data showed that in 2024 the UK had the highest industrial electricity prices in the developed world and the second highest domestic electricity prices. Before the election, Labor famously promised to cut energy bills by £300. However, it is now clear that energy bills are going much higher. When giving evidence to a recent Energy Security and Net Zero Select Committee hearing, Rachel Fletcher of Octopus Energy said that electricity bills would be 20% higher in four or five years' time even if wholesale prices, largely set by gas, halve. Chris Norbury, chief executive of E.On UK had a similar message when he said even if wholesale prices go to zero, bills would be where they are today because of the increase in non-commodity costs.

The Department for Energy Security and Net Zero (DESNZ) continues to insist that:

"the only way to bring down energy bills for good is by making Britain a clean energy superpower, which will get the UK off the rollercoaster of fossil fuel prices and onto clean, homegrown power that we control."

The briefing notes to the Kings Speech committed the Government to *"speed up the build-out of vital grid infrastructure"* which will add to the non-commodity costs the energy bosses were worried about in their testimony to ESNZ. The Government has also implicitly acknowledged that bills are going up, and the £300 commitment is dead because the Kings Speech notes also said *"government estimates suggest that consumers could see a gradual accumulation of savings from 2030 onwards from Reformed National Pricing, reaching £20-40 on the typical annual dual fuel household bill by 2040."* In other words, bills are going to go up before 2030 and might possibly decline slightly afterwards.

In response to extremely high UK electricity prices, opposition parties have put forward some ideas to bring bills down. These initiatives have focused on cancelling AR7 contracts

(Reform), eliminating carbon taxes and abolishing the Renewable Obligation Scheme early (Conservatives).

How much might current plans cost us, and would the opposition plans be enough to reverse that?

Renewables, Green Gas and Nuclear Subsidies

We can split the extra costs of energy into two categories. First, there are direct energy subsidies and second additional grid integration overheads that are largely driven by intermittent renewables. Helpfully, the forecast of the cost of environmental levies that includes subsidies from the Renewables Obligation (ROCs), Contracts for Difference (CfDs), the Green Gas Levy (GGL) and the Sizewell C RAB levy. The GGL subsidizes green gas like biomethane and is levied on gas supply so also has a knock-on effect on electricity bills. The Government provided a forecast for Feed-in-Tariffs in a recent consultation. The total forecast for energy subsidies is shown in Figure 1 (all figures in nominal terms).

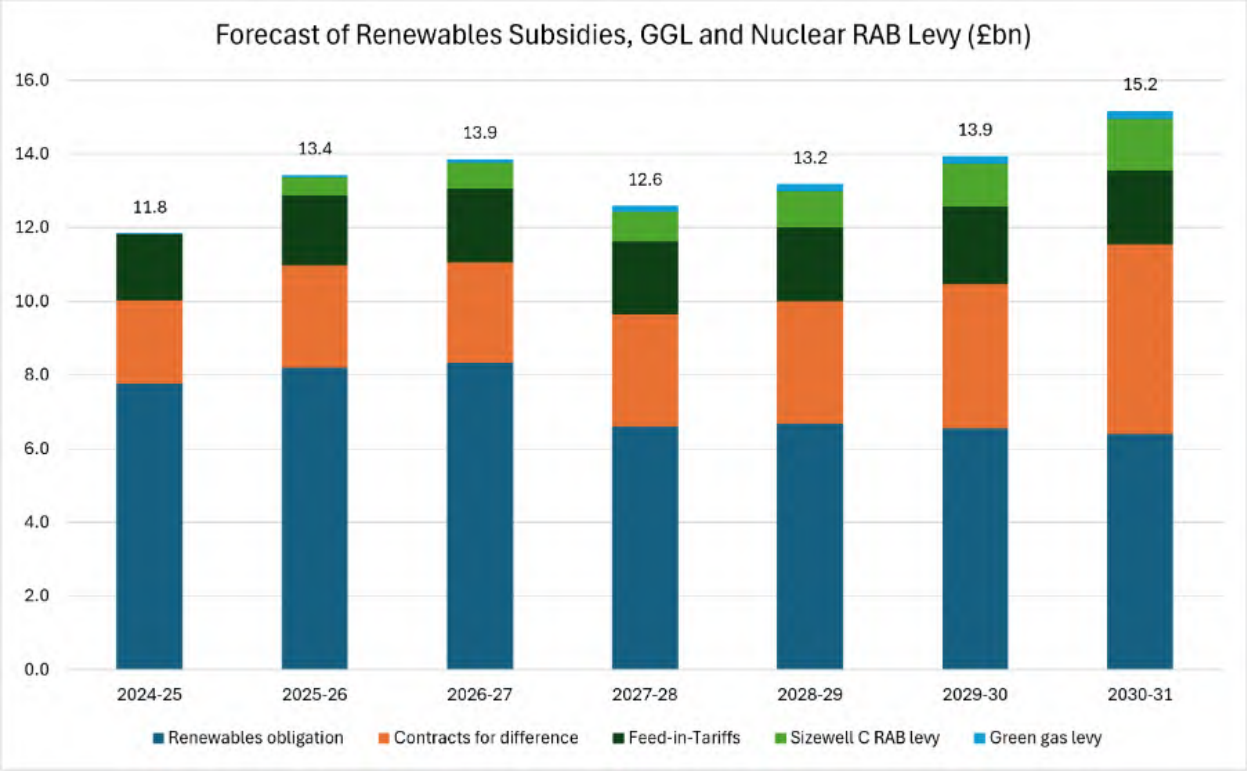


Fig 1

The total cost of these schemes is set to rise from £11.8bn in 2024/25 to £15.2bn by 2030/31. Within that total, the ROC scheme is forecast to rise from £7.8bn in 2024/25 to

£8.3bn in 2026/27 before falling back to £6.4bn 2030/31 as Drax moves to a CfD and the subsidies expire for some of the oldest projects. We should note that 75% of the cost of the ROC scheme for domestic users is now borne by taxpayers and not billpayers. However, the current government plans to put the cost back on bills in April 2029. Abolishing the scheme in 2029 would reduce the burden on both domestic and non-domestic electricity consumers.

The cost of CfDs is forecast to rise from £2.3bn in 2024/25 to £5.1bn 2030/31. FiTs remain relatively stable, rising marginally from £1.8bn to £2.1bn by 2029/30 before falling back to £2.0bn in 2030/31. The Sizewell C subsidy goes up steadily from zero in 2024/25 to £1.4bn in 2030/31 and the GGL goes up to £0.2bn by 2030/31.

Note this analysis does not include the mooted Wholesale CfDs (WCfDs)proposed by Ed Miliband to give guaranteed market revenues to ROC-funded generators.

Grid Integration Overhead Costs

Grid integration costs include grid balancing costs, backup from the capacity market and the extra transmission costs incurred to connect remote renewables to the source of demand. NESO has provided a forecast of costs and a forecast of transmission costs. The OBR forecasts the future costs of the Capacity Market. A summary of those forecasts is shown in Figure 2.

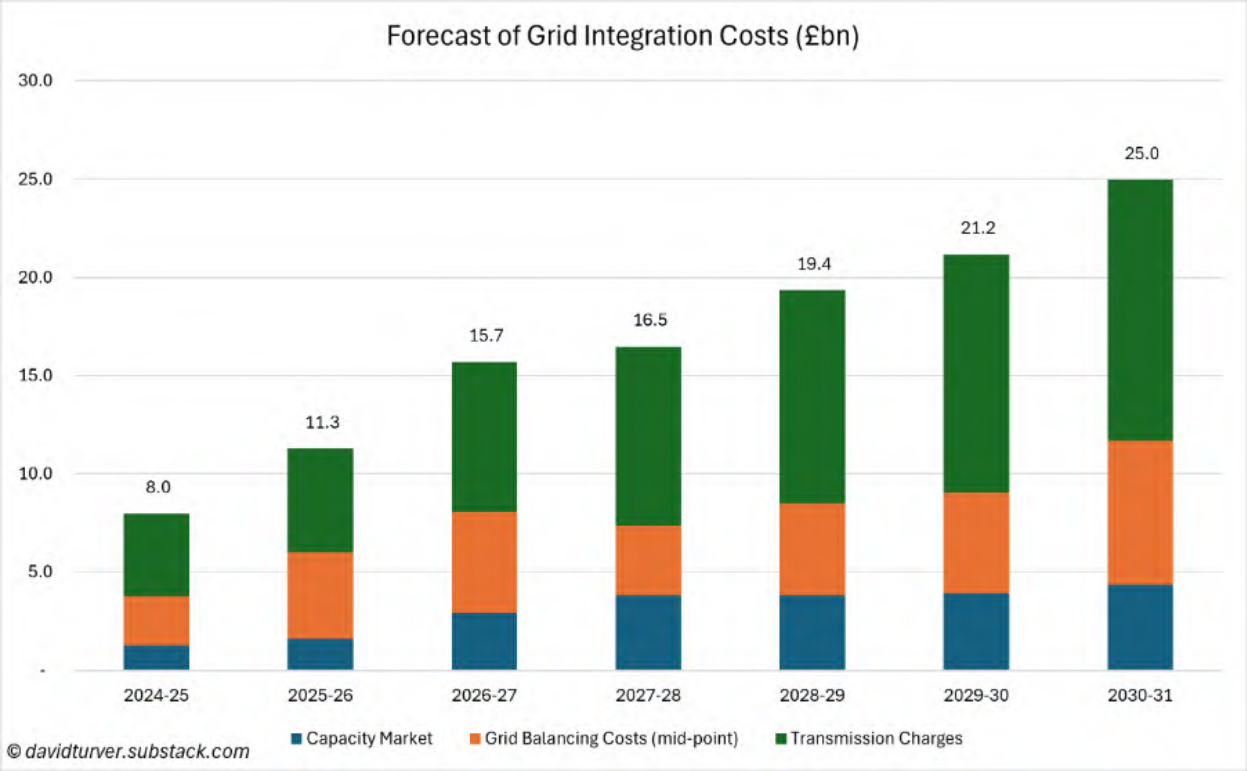


Fig 2

The total grid integration costs to accommodate the planned increase in renewables capacity to meet the current Clean Power 2030 plan are forecast to rise from about £8bn in 2024/25 to £25bn in 2030/31. Within that, Capacity Market costs are forecast to rise from £1.3bn to £4.4bn.

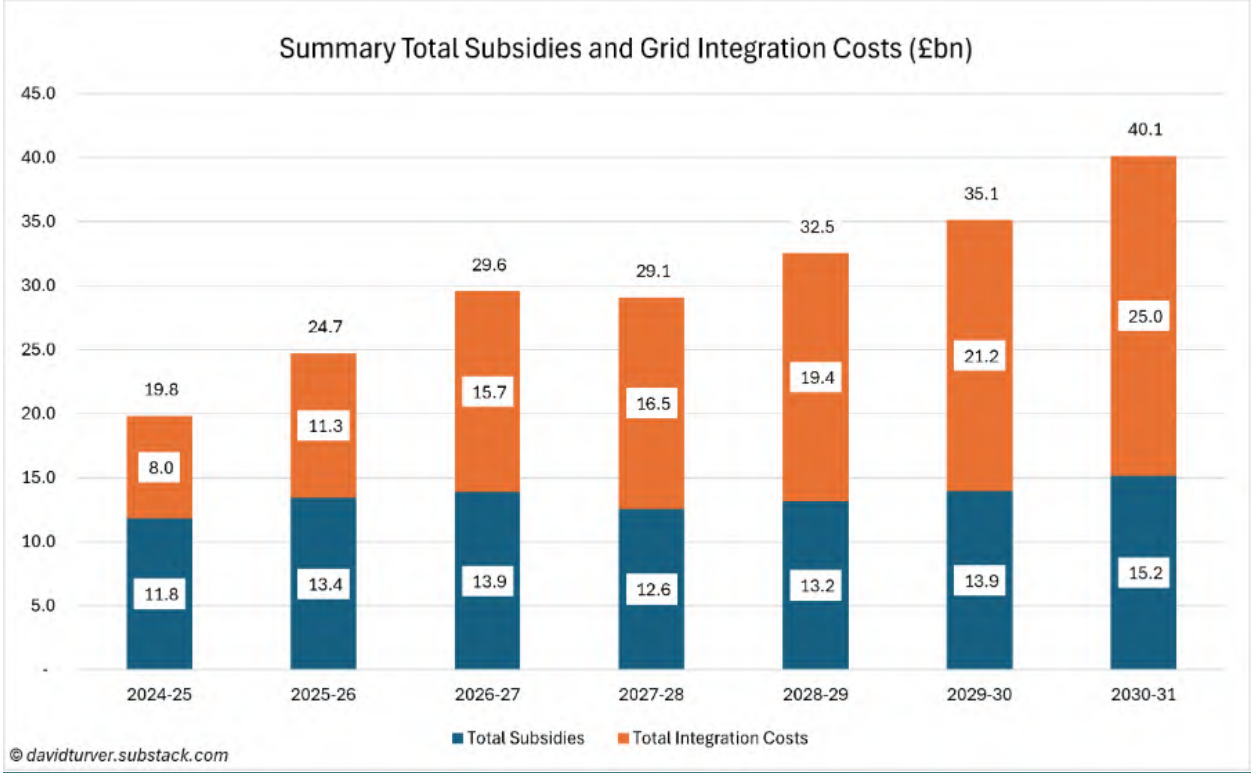
NESO provides several scenarios for grid balancing costs depending on whether they follow the Holistic Transition (highest balancing costs), Electric Engagement or Hydrogen Evolution (lowest balancing costs). For the purposes of this analysis the mid-point of the highest and lowest forecast in each year has been used. By this measure, balancing costs rise from £2.5bn in 2024/25 to £7.3bn in 2030/31. If plans to abolish carbon taxes and end ROCs early succeed (as suggested by some in the opposition), balancing costs may fall because some renewable generators will no longer be financially viable on a merchant basis. This potential impact has not been evaluated in this analysis.

NESO's allowed revenues for Transmission Network Use of Service (TNUoS) costs rise from an actual cost of £4.2bn in 2024/25 to a forecast £13.3bn in 2030/31. It is interesting to note the forecast increase in TNUoS costs is larger than the increase in balancing costs the investment is supposed to mitigate.

Recent investor presentations from National Grid and SSE show they are salivating at the prospect of guaranteed returns from Ofgem to support spending to expand the grid.

Summary Total Cost of Subsidies and Grid Integration

The total subsidies and grid integration overheads have been combined into a single chart in Figure 3.



Total subsidies and grid integration costs double from £19.8bn in 2024/25 to a staggering £40.1bn in 2030/31. These costs are likely to continue to increase as more renewables are built. Wind and solar curtailment costs will no longer be driven by grid capacity constraints, but by output being higher than demand. These staggering costs would be almost enough to buy a Hinkley Point C nuclear power plant every year.

As an aside, assuming the 77.3TWh of gas generation in 2025 was produced at 50% efficiency, the cost of the gas used for electricity at an elevated 100p/therm is about £5.3bn. It is clear the cost of gas for electricity is relatively trivial compared to the full costs of renewables.

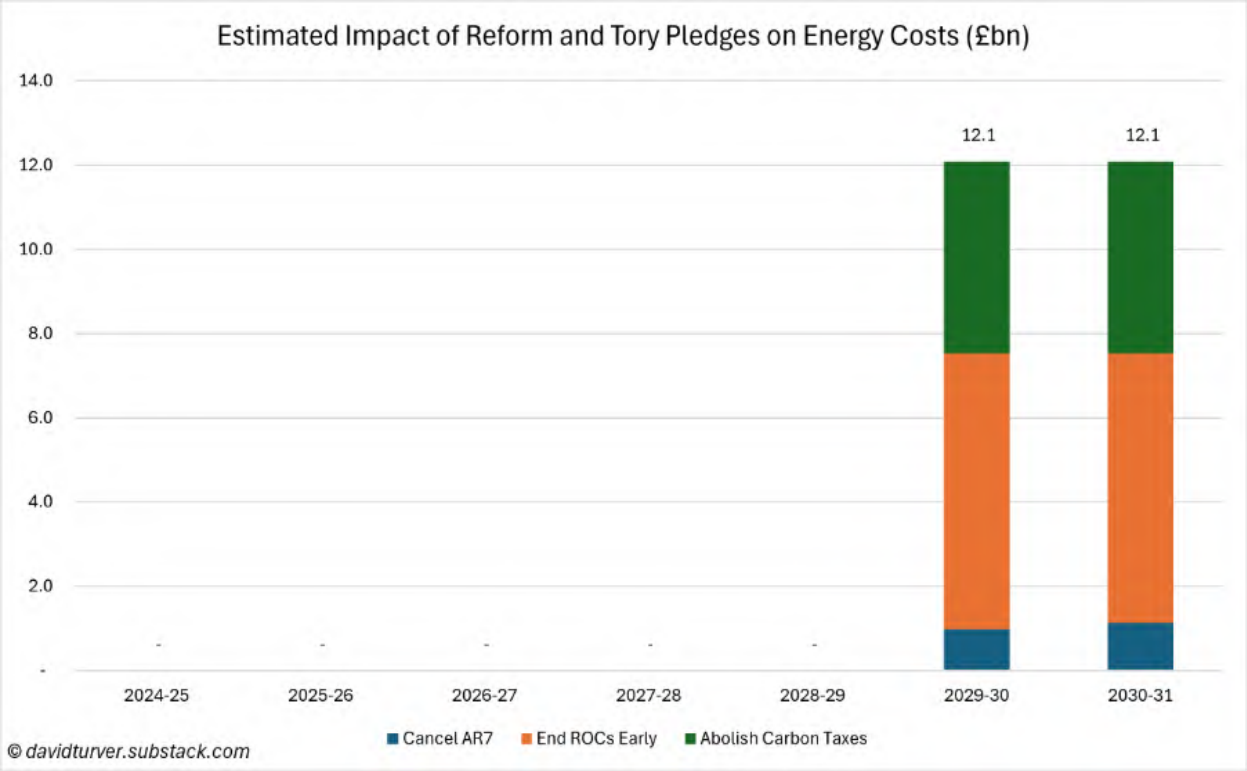
Impact of opposition proposals

The forecast increase in subsidies and grid integration costs is obviously substantial. Some in the opposition have outlined plans to abandon net zero and bring energy prices down. Reform have pledged to cancel AR7 contracts and made vague promises to cut green levies. The Tories have been more specific, promising to end the ROC scheme early and to abolish carbon taxes on wholesale electricity.

To estimate the impact of these measures we need to make some assumptions. We will assume the aforementioned proposals become actual policy in time to have a full year effect in 2029/30.

The impact of cancelling the AR7 contracts has been estimated from the AR7and AR7a results which give the budget impact by financial year (2024 prices). This gives a saving of £1bn in 2029/30 and £1.1bn in 2030/31. It should be noted that savings in later years will be larger as more offshore wind no longer comes on stream.

Estimating the impact of abolishing carbon taxes is a little trickier. Carbon taxes impact the wholesale price of electricity because wholesale prices are mostly set by gas. This means that these taxes not only impact the price of gas-fired electricity, but they also impact the price of electricity from other generators too like nuclear, hydro, storage and ROC-funded renewables. From NESO's generation mix and from Ofgem's RER database, we can calculate that a total of 182.5TWh of electricity was generated by these sources in calendar year 2025 (excluding Drax ROCs that by 2029/30 will feature in CfD costs). Assuming carbon costs of approximately £25/MWh for 2025, per Ember, we can estimate the total carbon costs of electricity generation are about £4.6bn per year. Making a forecast of carbon costs in 2029/30 and 2030/31 is somewhat tricky, because by then there will be less gas and nuclear generation and ROC generation will be down too. Balanced against that, carbon costs may well have risen because of the government's planned alignment with the EU Emissions Trading Scheme where carbon costs are higher. For the purposes of this analysis it has been assumed the carbon cost saving will remain £4.6bn in those years. It is also assumed that ending ROCs early will save the full amount in the OBR forecast. A summary of this analysis is shown in Figure 4.

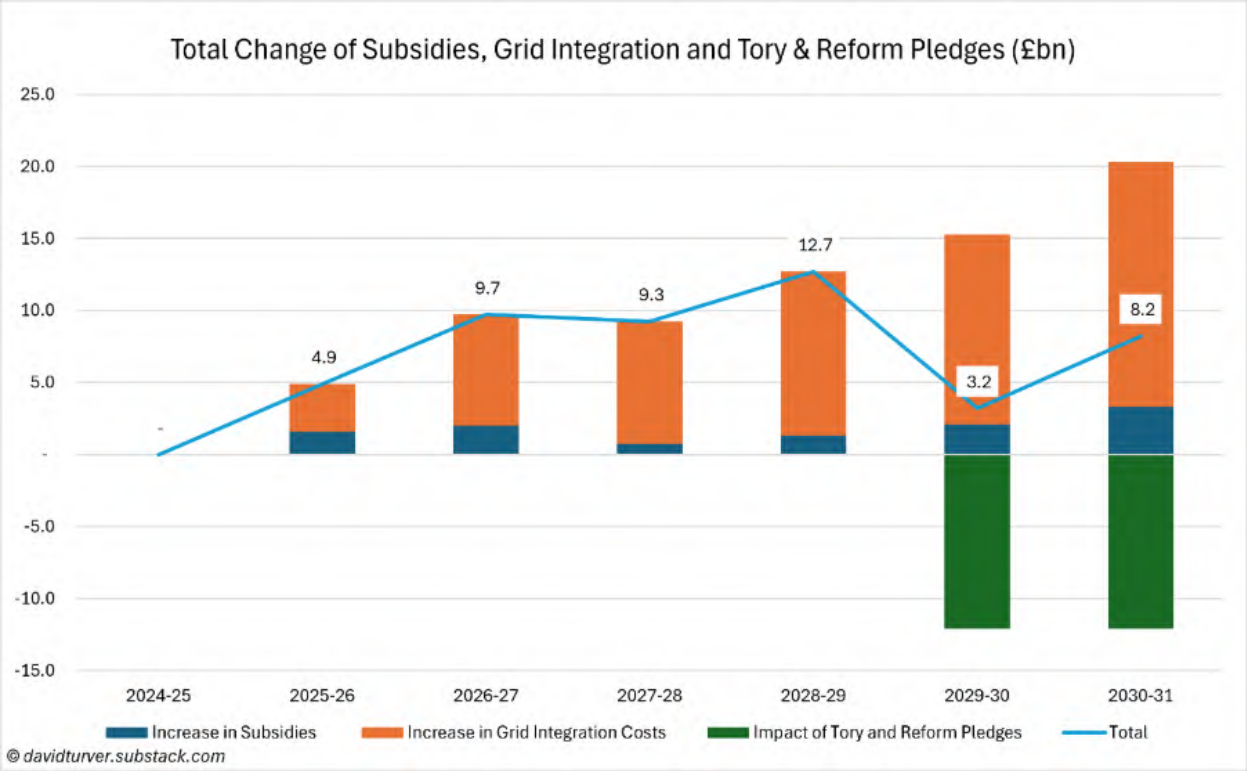


The total impact of the opposition proposals could be around £12.1bn per year from 2029/30, if they were enacted in time.

It should be noted the Government has committed to remove the Carbon Price Support mechanism from April 2028 that should reduce carbon costs by around £1.5bn from April 2028. That is not included in this analysis. However, as will be shown below, it makes precious little difference to the big picture.

Impact of Changes

The full impact of the opposition proposals and the forecast changes in subsidies and grid integration costs from the 2024/25 baseline are summarized in Figure 5.



As we saw above, on the current trajectory, the increase in subsidies and grid integration costs from the 2024/25 baseline reaches over £20bn by 2030/31. This amounts to the equivalent of about £700 per household, without any change in gas prices. The opposition proposals would make a £12.1bn difference from 2029/30. However, the total impact of the forecast increases and proposals still means energy costs will be £3.2bn higher than 2024/25 in 2029/30 and £8.2bn higher in 2030/31.

Conclusions

In 2024 the UK had the most expensive industrial electricity prices in the developed world and second highest domestic prices. A national emergency to address this catastrophe should have been declared.

Instead, official forecasts shows that subsidies and grid integration costs are set to rise by over £20bn by 2030/31 from the 2024/25 baseline, further increasing electricity costs. This increase in costs amounts to the equivalent of £700 per household. The claims from Octopus and E.On that bills are going up regardless of what happens to gas prices can be seen to be true. It is clear that the often-heard claim that making Britain a “clean energy superpower” will bring down bills is false.

The pledges from parts of the opposition to begin to tackle high energy prices are very welcome, but not enough. Even if those pledges were fully implemented in time, electricity system costs will still be £8.2bn higher in 2030/31 than the baseline.

If the UK is to survive as a developed economy, these extra costs simply cannot be allowed to endure. In fact, drastic action will be required to cut subsidies even more than anyone in the opposition currently plans to do, and the extra grid integration overheads driven by intermittent renewables will need to be removed too. The legislative and contractual barriers to doing the right thing are considerable. It would mean inflicting considerable pain on the current beneficiaries of this state largesse – renewable energy generators, their investors, storage companies and grid operators. Investors in these doomed projects should take note.

However, the pain inflicted on the green blob by a return to a sane energy policy will be small compared to the pain inflicted on the rest of the economy if high electricity prices are allowed to continue. Net Zero must be stopped now.

Outlook

Scientists prove fish suffer ‘excruciating pain' for at least 10 minutes after catch, as calls are made for reforms

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From Phoebe Lenhart
Date Mon 04/27/2026 07:03 PM
To FGC <FGC@fgc.ca.gov>

Please note.

Thank you,
Phoebe
[redacted]
Crescent City, Ca

Scientists prove fish suffer ‘excruciating pain' for at least 10 minutes after catch, as calls are made for reforms
https://gcc02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fl.smartnews.com%2Fp-7Cng4V3O%2FSIgNV4&data=05%7C02%7Cfgc%40fgc.ca.gov%7Cd373364829a14faf4a5f08dea4ca51c2%7C4b633c25efbf40069f1507442ba7aa0b%7C0%7C0%7C639129386024112664%7CUnknown%7CTWFpbGZsb3d8eyJFbXB0eU1hcGkiOnRydWUsIlYiOiIwLjAuMDAwMCIsIlAiOiJXaW4zMiIsIkFOIjoiTWFpbCIsIldUIjoyfQ%3D%3D%7C0%7C%7C%7C&sdata=yr4oFO68yl48xgiYUHfkU27R3jJhjvAsKTO8cdAcIBE%3D&reserved=0

Sent from my iPhone

Outlook

Request for Update on Permanent Sea Lion Protection Signage and Additional Protective Measures

From Kimberly Kelly

Date Wed 06/03/2026 11:41 AM

To district5@ventura.org <district5@ventura.org>; vianey.lopez@ventura.org <vianey.lopez@ventura.org>; info@cimwi.org <info@cimwi.org>; CIHarborVisitors@ventura.org <CIHarborVisitors@ventura.org>; nmfs.wcr@noaa.gov <nmfs.wcr@noaa.gov>; FGC <FGC@fgc.ca.gov>; nbvcpao@us.navy.mil <nbvcpao@us.navy.mil>

Dear Supervisor,

I am writing to request an update regarding the installation of permanent signage and other protective measures for the sea lion haul-out area. I am also copying the agencies and organizations involved in the protection, management, and welfare of these marine mammals so that all parties are aware of the ongoing concerns being observed at this location.

This morning, at approximately 9:56 a.m., before temporary warning signs were installed, I observed a member of the public approach very closely to the sea lion colony while taking photographs. The attached photographs document this incident. Temporary signs were not installed until approximately 10:04 a.m., highlighting the need for permanent, clearly visible signage that is in place at all times rather than only periodically.

Unfortunately, this is not an isolated incident. Over the past several weeks and months, I have personally documented and witnessed repeated instances of visitors approaching the sea lions for selfies and photographs, walking through or near the colony, and fishing immediately adjacent to the haul-out area. These interactions occur regularly despite the presence of numerous mothers, pups, and juvenile sea lions.

The situation becomes especially concerning on weekends when hundreds of visitors gather in the area. A beachside bar and a public volleyball court located less than 50 feet from where the sea lions rest attract significant activity throughout the day. The combination of heavy foot traffic, recreational activity, photography, and fishing creates frequent disturbances for the animals, particularly the many mothers, pups, and juvenile sea lions using the haul-out area. As the colony continues to grow, permanent signage and clearly defined viewing boundaries are becoming increasingly important to help educate the public and reduce unnecessary disturbances.

I am particularly concerned because this colony is currently supporting nursing mothers and young pups. In recent weeks, one pup was lost, while another was born and continues to nurse within the same area that is experiencing regular human disturbance. The presence of mothers and dependent pups makes this haul-out site especially sensitive and underscores the importance of minimizing

unnecessary disruptions. Members of the public have also been observed near the area where the pup was nursing, further increasing the risk of disturbance to both the mother and pup.

As someone who regularly monitors this haul-out area, I have become increasingly concerned by the frequency of these incidents and the growing number of sea lions and pups using this location. While I appreciate the efforts made today to install temporary signs, I respectfully request an update regarding:

• The timeline for installation of permanent sea lion protection signage.

• Whether additional educational signage regarding marine mammal harassment laws and recommended viewing distances is planned.

• Whether protective buffer zones or fishing restrictions near the haul-out area are being considered, particularly during pupping season.

• What measures are being taken to educate visitors and reduce ongoing disturbances.

• Whether there is a long-term management plan in place to protect this growing colony and its pups.

Given the close proximity of public recreational activities to the haul-out site, I believe proactive measures now will help prevent future conflicts between visitors and wildlife while ensuring this important resting and nursery area remains protected.

Thank you for your time and attention to this matter. I would appreciate any updates you can provide and would welcome a response that can be shared with the agencies copied on this correspondence so that the public understands what protections are being planned for this growing colony.

Respectfully,

Kimberly Kelly

Channel Islands Resident

March 6, 2026

The Honorable Gavin Newsom
Governor, State of California
1021 O Street, Suite 9000
Sacramento, CA 95814

The Honorable Monique Limón
President Pro Tempore, California State Senate
1021 O Street, Suite 8518
Sacramento, CA 95814

The Honorable John Laird
Chair, Senate Budget and Fiscal Review Committee
1021 O Street, Suite 8720
Sacramento, CA 95814

The Honorable Eloise Gómez Reyes
Chair, Subcommittee 2, Senate Budget and Fiscal Review Committee
1021 O Street, Suite 7210
Sacramento, CA 95814

The Honorable Robert Rivas
Speaker, California State Assembly
1021 O Street, Suite 8330
Sacramento, CA 95814

The Honorable Jesse Gabriel
Chair, Assembly Committee on Budget
1021 O Street, Suite 8230
Sacramento, CA 95814

The Honorable Steve Bennett
Chair, Subcommittee 4, Assembly Committee on Budget
1021 O Street, Suite 4710
Sacramento, CA 95814

RE: Retain agency environmental staff in the 2026-2027 state budget to facilitate clean energy permitting

Dear Governor Newsom, President Pro Tempore Limón, Chair Laird, Chair Gómez Reyes, Speaker Rivas, Chair Gabriel, and Chair Bennett,

Our collective organizations strongly urge you to maintain the environmental agency staff positions that the Legislature is considering for elimination in the 2026-2027 Budget. Many of these positions are essential to the processing of clean energy infrastructure permits, which are key to speeding up project approvals and enabling wide-scale deployment of renewable energy to meet our climate goals.

The Governor's budget for 2026-2027 includes the elimination of approximately 378 open positions at state environmental agencies. As part of the budget agreement last year, the Joint Legislative Budget Committee (JLBC) reviewed whether these positions should be eliminated. They recommended reinstating 120 of the 255 positions identified to be eliminated at the California Department of Fish and Wildlife (CDFW) and State Water Resources Control Board (SWRCB). While we appreciate and support the JLBC's recommendations to reject the elimination of some of the open positions at these two agencies, we urge the Legislature to reject the elimination of all 164 open positions at the CDFW and all 91 open positions at the SWRCB. These positions are critical to these agencies' ability to perform crucial permitting, law enforcement, and land management duties.

Without these positions, CDFW and the SWRCB will not be able to achieve their respective missions to conserve and protect California's diverse species and to preserve, enhance, and restore the quality of the state's water resources. Furthermore, these state agencies are also essential for processing related clean energy infrastructure permits when projects intersect with their authority. Eliminating these positions would therefore also undermine the state's goal of scaling renewable energy to meet our climate goals in a manner that protects communities and the environment.

Specifically, at least 40 of the open positions at CDFW are permitting positions, which, if filled instead of eliminated, would provide more capacity at the department to issue permits associated with endangered species, streambed alteration and California Environmental Quality Act compliance. At the SWRCB, the majority of open the positions slated to be eliminated are positions related to permitting, including compliance with the state and federal clean water acts. The lack of staffing capacity at state permitting agencies has been identified in multiple venues as one of the largest barriers to building projects faster. At a time when energy developers, utilities, and state agencies are tasked with facilitating faster on ramping of clean energy projects and infrastructure, it is counter-intuitive to eliminate permitting positions at CDFW and SWRCB since they would directly help address this issue.

While we recognize the challenges of balancing this year's state budget, we highlight that most of these positions are funded by fee-based policies intended to ensure sufficient staffing to efficiently and effectively comply with state laws. Specifically, two-thirds of the open positions identified to be eliminated at CDFW and three-quarters of the positions at the SWRCB are funded with fees. For the remaining positions funded by the General Fund, the state would save less than $35 million in General Fund, which is 0.015% of the total amount of General Fund in the state budget. Therefore, eliminating these positions will not help balance the state's budget and would instead contribute to further delays in processing key projects in line with the state's goals.

Further, with respect to the fee-funded positions, as noted in the Legislative Analyst's Office's (LAO) recent analysis[1] of the proposed eliminations, "often special funds… are structured specifically to ensure fee-payers help support regulatory activities and the mitigation of their industry's environmental impacts." By removing these positions, those fees that have been paid *specifically* for actions that state agencies need to undertake for the fee-payers' projects, would instead sit unused in account balances and tasks will go undone. The LAO analysis of the budget proposal's elimination of state environmental positions also states that doing so could have undesirable programmatic impacts because they serve important purposes. For example, numerous positions were authorized to serve important state functions, including related to preserving health and safety and enforcing state laws. We further agree with the LAO analysis as well as the JLBC's assessment that these environmental positions should not be eliminated as they likely would have negative impacts on a department's ability to implement key priorities and further undermine their long-term capacity and ability to fulfill the goals and tasks laid out for them in state law.

We therefore respectfully request that the Legislature and Administration reinstate these open positions in the final 2026-2027 state budget so the agencies can fulfill their mandates and the state can stay on track towards meeting our climate, biodiversity, and equity goals.

Sincerely,

Victoria Rome
CA Government Affairs Director
Natural Resources Defense Council

Jakob Evans
Senior Policy Strategist
Sierra Club California

Katelyn Roedner Sutter
Senior Director, California
Environmental Defense Fund

Mary Creasman
Chief Executive Officer
California Environmental Voters

Michele Canales
Western States Policy Advocate
Union of Concerned Scientists

Ada Waelder
Senior State Legislative Representative
Earthjustice

Pamela Flick
California Program Director
Defenders of Wildlife

Michael Lynes
Director of Public Policy
Audubon California

[1] Legislative Analyst's Office (LAO), "Proposed Elimination of State Environmental Positions," February 17, 2026 https://lao.ca.gov/Publications/Report/5124 accessed 2/26/26.

CAPITOL OFFICE
1021 O STREET, SUITE 8620
SACRAMENTO, CA 95814
TEL (916) 651-4011
FAX (916) 651-4911

DISTRICT OFFICE
455 GOLDEN GATE AVENUE
SUITE 14800
SAN FRANCISCO, CA 94102
TEL (415) 557-1300
FAX (415) 557-1252

SENATOR.WIENER@SENATE.CA.GOV

California State Senate

SENATOR
SCOTT WIENER
威善高
ELEVENTH SENATE DISTRICT

STANDING COMMITTEES
ELECTIONS AND CONSTITUTIONAL AMENDMENTS
CHAIR
JUDICIARY
LEGISLATIVE ETHICS
PRIVACY, DIGITAL TECHNOLOGIES AND CONSUMER PROTECTION
PUBLIC SAFETY
TRANSPORTATION

JOINT COMMITTEES
CLIMATE CHANGE POLICIES
RULES

SELECT COMMITTEE
BAY AREA PUBLIC TRANSIT
CHAIR

MENTAL HEALTH CAUCUS
CHAIR

March 6, 2026

The Honorable Senator Laird
Chair, Senate Budget Committee
1021 O Street, Suite 8720
Sacramento, CA 95814

The Honorable Eloise Gómez Reyes
Chair, Senate Budget Subcommittee #2
1021 O St, Suite 7210
Sacramento, CA 95814

RE: Retain agency environmental staff in the 2026-2027 state budget to facilitate clean energy Permitting

Dear Senators Laird and Reyes,

We strongly urge you to maintain the environmental agency staff positions that the Legislature is considering for elimination in the 2026-2027 Budget. Many of these positions are essential to the processing of clean energy infrastructure permits, which are key to speeding up project approvals and enabling wide-scale deployment of renewable energy to meet our climate goals.

The Governor's budget for 2026-2027 includes the elimination of approximately 378 open positions at state environmental agencies. As part of the budget agreement last year, the Joint Legislative Budget Committee (JLBC) reviewed whether these positions should be eliminated. They recommended reinstating 120 of the 255 positions identified to be eliminated at the California Department of Fish and Wildlife (CDFW) and State Water Resources Control Board (SWRCB). While we appreciate and support the JLBC's recommendations to reject the elimination of some of the open positions at these two agencies, we urge the Legislature to reject the elimination of all 164 open positions at the CDFW and all 91 open positions at the SWRCB. These positions are critical to these agencies' ability to perform crucial permitting, law enforcement, and land management duties.

Without these positions, CDFW and the SWRCB will not be able to achieve their respective missions to conserve and protect California's diverse species and to preserve, enhance, and restore the quality of the state's water resources. Furthermore, these state agencies are also essential for processing related clean energy infrastructure permits when projects intersect with their authority.

Eliminating these positions would therefore also undermine the state's goal of scaling renewable energy to meet our climate goals in a manner that protects communities and the environment. Specifically, at least 40 of the open positions at CDFW are permitting positions, which, if filled instead of eliminated, would provide more capacity at the department to issue permits associated with endangered species, streambed alteration and California Environmental Quality Act compliance. At the SWRCB, the majority of open the positions slated to be eliminated are positions related to permitting, including compliance with the state and federal clean water acts.

The lack of staffing capacity at state permitting agencies has been identified in multiple venues as one of the largest barriers to building projects faster. At a time when energy developers, utilities, and state agencies are tasked with facilitating faster on ramping of clean energy projects and infrastructure, it is counter-intuitive to eliminate permitting positions at CDFW and SWRCB since they would directly help address this issue.

While we recognize the challenges of balancing this year's state budget, we highlight that most of these positions are funded by fee-based policies intended to ensure sufficient staffing to efficiently and effectively comply with state laws. Specifically, two-thirds of the open positions identified to be eliminated at CDFW and three-quarters of the positions at the SWRCB are funded with fees. For the remaining positions funded by the General Fund, the state would save less than $35 million in the General Fund, which is 0.015% of the total amount of General Fund in the state budget. Therefore, eliminating these positions will not help balance the state's budget and would instead contribute to further delays in processing key projects in line with the state's goals.

Further, with respect to the fee-funded positions, as noted in the Legislative Analyst's Office's (LAO) recent analysis[1] of the proposed eliminations, "often special funds… are structured specifically to ensure fee-payers help support regulatory activities and the mitigation of their industry's environmental impacts." By removing these positions, those fees that have been paid specifically for actions that state agencies need to undertake for the fee-payers' projects, would instead sit unused in account balances and tasks will go undone. The LAO analysis of the budget proposal's elimination of state environmental positions also states that doing so could have undesirable programmatic impacts because they serve important purposes. For example, numerous positions were authorized to preserve important state functions, including related to preserving health and safety and enforcing state laws. We further agree with the LAO analysis as well as the JLBC's assessment that these environmental positions should not be eliminated as they likely would have negative impacts on a department's ability to implement key priorities and further undermine their long-term capacity and ability to fulfill the goals and tasks laid out for them in state law.

We therefore respectfully request that these open positions be reinstated in the Legislature's final 2026-2027 state budget so the agencies can fulfill their mandates and the state can stay on track towards meeting our climate and energy goals. Thank you for your consideration of this request. If you have any questions, please reach out to my Chief of Staff, Krista Pfefferkorn, at krista.pfefferkorn@sen.ca.gov.

Sincerely,

Scott Wiener
Senator, District 11

Catherine Blakespear
Senator, 38th District

[1] Legislative Analyst's Office (LAO), "Proposed Elimination of State Environmental Positions," February 17, 2026 https://lao.ca.gov/Publications/Report/5124 accessed 2/26/26.

March 17, 2026 (updated March 19, 2026)

The Honorable Gavin Newsom
Governor, State of California
State Capitol
Sacramento, CA 95814

The Honorable Monique Limón
President pro Tempore
California State Senate
State Capitol
Sacramento, CA 95814

The Honorable Robert Rivas
Speaker
California State Assembly
State Capitol
Sacramento, CA 95814

The Honorable John Laird
Chair, Senate Budget Committee
State Capitol
Sacramento, CA 95814

The Honorable Jesse Gabriel
Chair, Assembly Budget Committee
State Capitol
Sacramento, CA 95814

The Honorable Eloise Gomez Reyes
Chair, Senate Budget Sub #2
State Capitol
Sacramento, CA 95814

The Honorable Steve Bennett
Chair, Assembly Budget Sub #4
State Capitol
Sacramento, CA 95814

Re: FY 2026-27 Budget Request - Opposition to the Elimination of Critical Department of Fish and Wildlife Positions

Dear Governor Newsom, Pro Tem Limón, Speaker Rivas, Chairs Laird, Gabriel, Reyes, and Bennett,

The undersigned marine conservation organizations representing public interest and recreational fishing communities, write to urge swift funding and clear reinstatement of

164 positions at the California Department of Fish and Wildlife (CDFW) associated with Section 4.12 of the FY 2024-25 Budget Act, particularly those supporting the Department's marine, coastal, and law enforcement programs.

As the Legislative Analyst's Office noted in its February 17, 2026 analysis, the environmental positions proposed for elimination serve important state functions, including enforcing environmental laws, protecting public trust resources, and ensuring that projects proceed with appropriate safeguards for wildlife and habitats. Eliminating these positions will come with serious trade-offs for California's coastal and ocean resources and environmental protection efforts.

CDFW plays a central role in implementing California's ocean and coastal conservation policies. CDFW manages the state's fisheries, oversees marine habitat protection, enforces fishing and wildlife laws, implements California's landmark network of marine protected areas, and leads key efforts to prevent and respond to environmental disasters such as oil spills. Yet CDFW continues to operate with staffing levels far below what is necessary to meet its statutory responsibilities.

The Legislature's Service Based Budget analysis has repeatedly demonstrated CDFW lacks sufficient staffing to fully carry out its mission. Across core functions, including permitting, wildlife law enforcement, fishery management, and species and habitat conservation, CDFW consistently operates with roughly one-third of the personnel needed to meet mandated obligations (see chart below). Despite this clear and documented need, the Administration proposed eliminating 164 CDFW positions through a vacancy sweep. Many of these positions support programs essential to marine and coastal conservation and to sustainable management of California's ocean resources. More than half of all Californians visit the coast at least once a year, supporting a $28 billion ocean tourism and recreation economy. California's coastal communities and visitors alike rely on healthy, thriving coasts, which are dependent on CDFW's capacity to carry out their mission.

Below, we share some of the critical programs at risk from staff cuts to CDFW.

Office of Spill Prevention and Response (OSPR)

CDFW's Office of Spill Prevention and Response is responsible for protecting California's coast and ocean from oil spills and other marine pollution events. OSPR staff support prevention programs, vessel inspections, contingency planning, and rapid emergency response to spills that threaten marine wildlife, fisheries, and coastal communities and economies. Additionally, OSPR plays a critical role as part of the Unified Command in spill scenarios, which also includes disseminating information to the public to maintain public safety and awareness. OSPR's mission not only encompasses prevention and response but also includes restoration and enhancement of natural resources impacted by spills. California has experienced several devastating oil spills in recent decades, and the risk remains significant given the volume of vessel traffic along the West Coast in addition to offshore and coastal onshore oil drilling and transport infrastructure in California. Reducing staffing within OSPR would weaken California's ability to prevent and respond to these incidents.

Marine Life Protection Act (MLPA) and California's Marine Protected Area (MPA) Network

CDFW is responsible for implementing and managing California's statewide network of marine protected areas under the MLPA, one of the largest and internationally recognized science-based ocean conservation programs in the world. Department staff coordinate long-term ecological monitoring, enforce regulations, evaluate ecological outcomes, and work with local communities, scientists, and partners to ensure MPAs are functioning as intended. These efforts play a vital role in rebuilding fish populations, protecting marine biodiversity, supporting resilient ocean ecosystems, and improving understanding of how protected areas contribute to equitable coastal access for all Californians. Continued implementation requires adequate staff capacity for monitoring, scientific analysis, enforcement coordination, and adaptive management to ensure California's MPA network remains effective over time.

Sustainable Fisheries and the Marine Life Management Act (MLMA)

CDFW staff are also essential to implementing the Marine Life Management Act (MLMA), the state's primary framework for science-based management of marine fisheries. The MLMA directs CDFW to conduct stock assessments, develop Fishery Management Plans, monitor fisheries, and ensure sustainable harvest while protecting ecosystem health.

CDFW manages numerous fisheries under this Act, including Dungeness crab, market squid, California halibut, Pacific herring, nearshore finfish, white seabass, spiny lobster, abalone, and highly valuable recreational fisheries. As of the most recent data, the commercial fishing industry contributes over $200 million in annual ex-vessel value, while recreational fishing generates a massive $2 billion+ in annual economic activity through travel, gear, and local tourism. Effective management of these fisheries requires scientific monitoring, dockside sampling, data analysis, enforcement, and stakeholder engagement. Staff reductions would limit the Department's ability to update fishery management plans, respond to emerging stock concerns, and implement adaptive management as ocean conditions rapidly change.

Maintaining adequate staffing is critical to ensure California's fisheries remain both ecologically sustainable and economically viable for both the public trust and commercial, recreational and subsistence fishing communities.

Marine Habitat Protection and Permitting

CDFW staff play a key role in reviewing and permitting projects that affect coastal and marine habitats, ensuring that development, infrastructure, and restoration projects proceed with appropriate protections for wildlife and ecosystems. CDFW marine scientists and environmental specialists review coastal development proposals and infrastructure projects to ensure they comply with California's fish and wildlife protection laws. This work includes evaluating potential impacts from dredging, coastal construction, energy projects, aquaculture, and habitat modification on marine species and ecosystems. Department expertise helps guide project design, mitigation

measures, and permitting decisions that protect critical marine habitats while allowing responsible coastal development to proceed.

CDFW also administers the Scientific Collecting Permit Program, which authorizes researchers, universities, agencies, and conservation organizations to collect or handle wildlife for scientific and educational purposes. These permits ensure that important scientific research—such as fisheries stock assessments, ecological monitoring, habitat restoration studies, and climate change research—can proceed while maintaining appropriate safeguards for species and ecosystems. Through this program, CDFW staff review research proposals, establish conditions to minimize impacts to wildlife, and track scientific activities that contribute to understanding and managing California's natural resources. Eliminating the dozens of open permitting positions at CDFW would significantly undermine the state's ability to review applications and issue permits efficiently.

Health Emergencies and Marine Wildlife Response

CDFW staff play a critical role in responding to harmful algal blooms (HABs) and other marine wildlife health emergencies that affect fisheries, marine mammals, seabirds, and coastal communities. CDFW scientists monitor marine toxins such as domoic acid, coordinate with public health agencies, and respond to large-scale wildlife mortality events linked to ocean conditions. These events have become more frequent and severe as ocean temperatures warm. Recent events highlight the importance of maintaining this capacity. Elevated domoic acid levels recently delayed the opening of the northern commercial Dungeness crab fishery to protect public health and fishing communities. At the same time, wildlife managers have been responding to outbreaks of Highly Pathogenic Avian Influenza affecting marine mammals at Año Nuevo State Park, which has caused dozens of elephant seal pup deaths and is being closely monitored due to the potential for larger mortality events observed in other regions. Maintaining the Department's scientific and response capacity is essential for protecting both marine ecosystems and public health.

Wildlife Law Enforcement

The proposed elimination of nearly 48 positions within CDFW's Law Enforcement Division – including 45 sworn wildlife officers – is deeply troubling. Wildlife officers educate and enforce fishing regulations, investigate environmental crimes, and patrol vast stretches of California's coastline and inland waters. Their work is essential to preventing illegal fishing, protecting marine wildlife, combatting wildlife trafficking and poaching, and ensuring compliance with fishery regulations. These officers also frequently serve as first responders in remote coastal areas during emergencies and environmental incidents.

Fish and Game Commission

The Fish and Game Commission (FGC) is California's primary regulatory body for state-managed fish, wildlife, and marine resource management, entrusted with safeguarding public trust resources and ensuring transparent, science-based decision-making. The proposed elimination of the FGC staff position would directly undermine the FGC's

ability to fulfill its essential state functions and uphold the public trust. An already very small number of FGC staff provide critical administrative support, policy development, regulatory implementation, and coordination with CDFW programs and appointed Commissioners. They also play a key role in ensuring the FGC's decision-making process is transparent, accessible, and informed by public input. These functions are essential for setting sustainable fisheries regulations, managing marine and terrestrial resources, and ensuring compliance with California's environmental laws.

Conclusion

Many of the positions proposed for elimination are funded in part or in full through special funds and fee-supported programs rather than the General Fund. Positions supported by permitting fees, environmental mitigation funds, or spill prevention fees provide services that stakeholders have already paid for. Eliminating these positions would therefore produce little meaningful General Fund savings while significantly degrading the state's ability to carry out essential environmental protection functions. That said, we think that CDFW's chronic underfunding and the broad public trust and public safety nature of their work justifies preservation of all General Funds needed for these positions.

California has long been a national leader in ocean conservation. The state's network of marine protected areas, commitment to a sustainable fishery management system, and robust spill prevention programs have helped protect the health of the Pacific Ocean while supporting recreation, coastal economies, and commercial and recreational fisheries. Maintaining this leadership requires adequate staffing and institutional capacity at CDFW.

California is confronting accelerating ocean and climate challenges, including warming waters, marine heatwaves, toxic algal blooms, declining kelp forests, shifting fish populations, and increasing pressure on coastal habitats. Reducing staffing at the very agency responsible for managing these resources would be both shortsighted and counterproductive. Eliminating these positions would significantly weaken California's ability to protect ocean ecosystems, sustainably manage fisheries, and safeguard coastal communities that depend on healthy marine resources.

For these reasons, we respectfully urge the Legislature to reject the elimination of CDFW positions and ensure that the Department retains the funds and positions needed to protect California's ocean ecosystems, sustainably manage fisheries, and support resilient coastal communities.

Thank you for your leadership and for your continued commitment to protecting California's coast and ocean.

Sincerely,

Caitlynn Birch
Marine Scientist
Oceana

Anupa Asokan
Founder and Executive Director
Fish On

Katie O'Donnell
Senior Ocean Conservation Manager
WILDCOAST

Kerry J. Nickols, Ph.D.
Science and Policy Director
Heal the Bay

Scott Webb
Director of Advocacy
Resource Renewal Institute

Tomas Valadez
California Policy Manager
Azul

Dan Silver
Executive Director
Endangered Habitats League

Amy Wolfrum
Director CA Policy and Government Affairs
Monterey Bay Aquarium

Sandy Aylesworth
Director, Pacific Initiative
Natural Resources Defense Council

Laura Deehan
State Director
Environment California

Rikki Eriksen, PhD
Director Marine Spatial Ecology Program
California Marine Sanctuary Foundation

Michael Quill, PhD
Marine Programs Director
Los Angeles Waterkeeper

Jennifer Savage
California Policy Associate Director
Surfrider Foundation

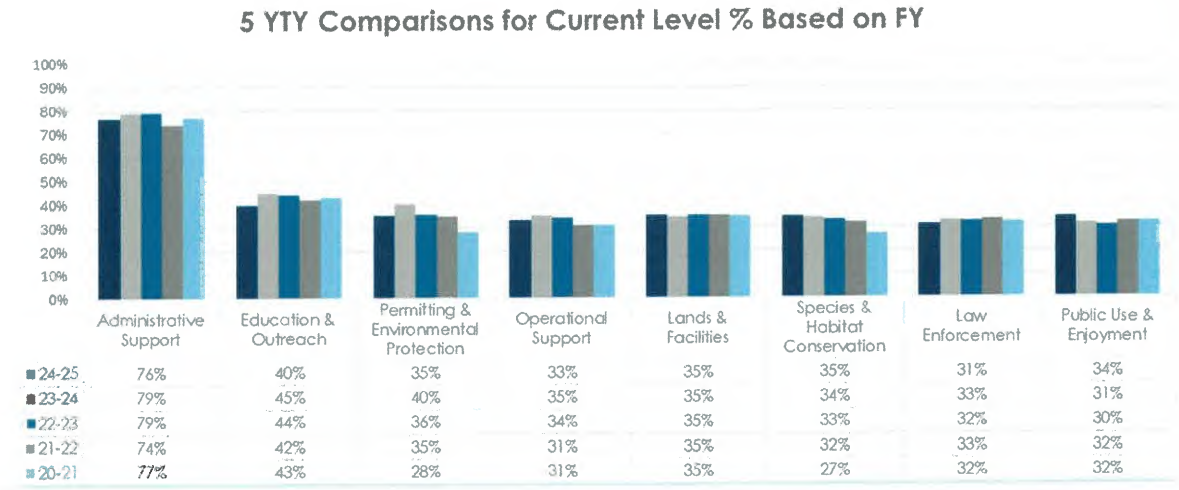
Kurt Lieber
President
Ocean Defenders Alliance

Ben Grundy
Oceans Campaigner
Center for Biological Diversity

Isabel Dawson
Policy Associate
Environmental Action Committee of
West Marin

Gap Analysis by Service Area

Chart and Graph below show 5-year YTY comparison for each year of data collection



	Administrative Support	Education & Outreach	Permitting & Environmental Protection	Operational Support	Lands & Facilities	Species & Habitat Conservation	Law Enforcement	Public Use & Enjoyment
24-25	76%	40%	35%	33%	35%	35%	31%	34%
23-24	79%	45%	40%	35%	35%	34%	33%	31%
22-23	79%	44%	36%	34%	35%	33%	32%	30%
21-22	74%	42%	35%	31%	35%	32%	33%	32%
20-21	77%	43%	28%	31%	35%	27%	32%	32%

SCI CA Coalition

April 26, 2026

The Honorable John Laird, Chair
Senate Budget and Fiscal Review Committee
1020 N. Street, Room 502
Sacramento, CA 95814

The Honorable Jesse Gabriel, Chair
Assembly Budget Committee
1021 O Street, Ste. 8230
Sacramento, CA 95814

Dear Chair Laird and Chair Gabriel,

We are writing on behalf of Safari Club International and the SCI California Coalition of ten chapters to express strong opposition to the Governor's proposal to eliminate critical staff positions at the California Department of Fish and Wildlife (CDFW), specifically the proposed cut of game warden positions. We testified in opposition to a similar proposal last year that was appropriately postponed and this proposal should be fully rejected.

While we understand the state's fiscal constraints, these cuts are dangerously short-sighted. Game wardens are California's first responders for environmental emergencies and the primary line of defense for our natural resources. Eliminating these roles will result in:

- **Weakened Environmental Enforcement:** CDFW is already funded at only approximately 33% of the level needed to meet its legal mandates. Further reductions will leave vast regions of the state without adequate protection against poaching, habitat destruction, and pollution.
- **Threats to Public Safety:** Wardens play a vital role in wildfire evacuations, mutual aid, and managing increasing human-wildlife conflicts. Thinning their ranks directly compromises the safety of Californians in rural and wildland-urban interface areas.
- **Failure of Conservation Goals:** These cuts jeopardize California's efforts to sustainably manage our wildlife populations according to the North American Model of conservation. The low staffing levels and lack of effective penalties to prosecute poachers and other violators are resulting in significant harm to our wildlife and marine environments. This is completely undermining California's conservation efforts and is resulting in long-term damage to our species numbers and diversity.

We respectfully urge the Committees to reject these eliminations and protect the law enforcement capacity essential to California's biodiversity and public safety.

Sincerely,

Keely Hopkins, J.D.
Western State and Local Liaison
Safari Club International

Lisa McNamee
Director
SCI California Coalition

SCI CA Coalition

June 3, 2026

The Honorable Robert Rivas, Speaker of the Assembly

The Honorable Jessie Gabriel, Chair, Assembly Budget Committee

The Honorable Brian Jones
The Honorable Dave Cortese
The Honorable Lori Wilson
The Honorable Alexandra Macedo
Co-Chairs, Legislative Outdoor Sporting Caucus

California State Legislature
State Capitol
Sacramento, CA 95814

Subject: Strong Support for Senate Budget Proposal to Retain Essential CDFW and Fish and Game Commission Positions

Dear Legislators,

We are writing to urge the Legislative Leadership and the Legislative Outdoor Sporting Caucus to strongly support the Senate budget proposal that protects and retains critical positions within the California Department of Fish and Wildlife (CDFW) and the California Fish and Game Commission, including our essential Fish and Game Wardens.

As leaders dedicated to preserving California's outdoor traditions, you understand that our state's multi-billion-dollar outdoor sporting economy relies entirely on healthy ecosystems and stable wildlife populations. The professional staff at CDFW and the Commission are the backbone of these resources. Cutting these positions would severely dismantle the state's capacity to manage habitats, process sporting licenses, and execute science-based wildlife regulations.

Most critically, we cannot afford to lose our Fish and Game Wardens. These law enforcement officers are already stretched thin, patrolling vast terrains to combat poaching, protect endangered species, and ensure public safety in our backcountry. Reducing wildlife officer positions directly threatens public safety and diminishes the integrity of fair-chase hunting and fishing traditions.

The Senate's proposal offers a responsible path forward that safeguards public access, maintains conservation enforcement, and supports the outdoor recreationists who fund a massive portion of California's conservation efforts through license fees and excise taxes.

On behalf of California's outdoor sporting community, I respectfully ask that the Caucus champion the Senate budget proposal during final negotiations to ensure these vital positions remain fully funded. Thank you for your continued leadership and dedication to our natural resources.

Sincerely,

Keely Hopkins, J.D.
Western State and Local Liaison
Safari Club International

Lisa McNamee
Director
SCI California Coalition

cc: Wade Crowfoot, Secretary, Natural Resources Agency
Meghan Hertel, Director, CDFW
Melissa Miller-Henson, Executive Director, FGC

SCI CA Coalition

April 23, 2026

The Honorable Gavin Newsom, Governor
1021 O Street, Suite 9000
Sacramento, CA 95814

RE: Formal Opposition to the Soda Mountain Solar Project – Ecological Impacts on Wildlife Connectivity and Avian Mortality

Dear Governor Newsom,

I am writing to formally express opposition to the Soda Mountain Solar Project and requesting that you direct your appointees to reject the project. While solar projects may have less impact in certain areas, the specific siting of this project poses significant, scientifically documented risks to regional biodiversity and essential wildlife corridors.

Our primary concerns are supported by the following ecological data and research:

1. Disruption of Bighorn Sheep Connectivity

The project site is a vital movement corridor for the Desert Bighorn Sheep (Ovis canadensis nelsoni). Research by Epps et al. (2007, 2013) and Creech et al. (2014) highlights this area as a high conservation priority for maintaining metapopulation connectivity in the southeastern Mojave. The installation of 8-foot-tall security fencing will effectively block movement between the Soda and Cady Mountains, isolating a herd estimated at up to 100 individuals and undermining the planned wildlife crossings for the Brightline West high-speed rail project. I fought to include these wildlife crossings to increase connectivity and provide for more genetic diversity for the wildlife populations that are already impacted by freeways and would be more impacted by Brightline West. These are the same reasons your administration designated nearly $80 million in taxpayer funding, likely to grow to over $100 million, for the Wallis Annenberg Wildlife Crossing in Southern California.

You touted the Wallis Annenberg Wildlife Crossing as a landmark victory for biodiversity, yet you appear willing to undermine this conservation narrative with the approval of the Soda Mountain Solar Project. While the Annenberg Crossing aims to save mountain lions from genetic isolation in Agoura Hills, the Soda Mountain Solar facility would occupy nearly 2,000 acres of critical desert habitat directly adjacent to Mojave National Preserve. Biologists warn that the solar farm's massive array of panels and security fencing could discourage bighorn sheep from using the three planned wildlife crossings over Interstate

15, potentially rendering those multimillion-dollar structures ineffective. This creates a serious policy contradiction: spending record taxpayer funds to bridge habitats in one region while simultaneously greenlighting industrial infrastructure that could permanently block movement corridors for critically endangered Mojave desert tortoises and bighorn sheep in another.

2. The "Lake Effect" and Avian Mortality

The "lake effect" hypothesis suggests that migrating birds mistake reflective photovoltaic (PV) arrays for bodies of water. Studies synthesized by the U.S. Geological Survey (2023) and CEC (2024) confirm that water-obligate birds are frequently attracted to these facilities, leading to collision-related trauma or "stranding". Reports from similar California projects recorded over 3,500 avian mortalities across 183 species in a four-year period. Siting this project just 8 km from the Zzyzx wetlands creates a high-risk ecological trap for the Pacific Flyway.

3. Failure of Standard Mitigation Strategies

History shows that common mitigation efforts in the Mojave Desert often fail to protect sensitive species:

Translocation Failures: The translocation of Mojave Desert Tortoises (Gopherus agassizii) has a "checkered history of success," particularly for reptiles. At the nearby Ivanpah project, initial estimates of dozens of tortoises were vastly exceeded, resulting in the capture of hundreds and significantly higher mortality than predicted.
Ineffective Buffer Zones: Experts from the National Parks Conservation Association argue that proposed bighorn sheep buffer zones are often less than half the size required by biological standards to maintain functional movement.

Habitat Restoration Lags: Research into "halos" and site preparation at Ivanpah shows that industrial bulldozing creates nearly uninhabitable soil conditions, making successful on-site restoration virtually impossible.

4. Desert Tortoise and Burrowing Owl Habitat Fragmentation

The project would eliminate approximately 4 square miles of habitat for species recently elevated to candidate status, such as the Burrowing Owl, and federally threatened species like the Desert Tortoise. This fragmentation, combined with groundwater extraction that threatens the springs at Zzyzx, poses an "irreparable" risk to the Mojave National Preserve's ecosystem.

In conclusion, the Soda Mountain Solar Project prioritizes short-term energy gains over the long-term biological integrity of the Mojave ecosystem. I urge you to direct your appointees at the California Energy Commission to reject the project.

SCI CA Coalition, c/o Greg Hurner, 1121 L Street, Suite 700, Sacramento, CA 95814

Sincerely,

Lisa McNamee
Director
SCI California Coalition

cc: California Energy Commission
California Fish and Game Commission
California Department of Fish and Wildlife

Outlook

Thank you for your hard work

From Bill Varney <fishthesurf@mail.com>
Date Mon 05/18/2026 08:33 AM
To FGC <FGC@fgc.ca.gov>

Hi Commissioners,
I'm Bill Varney and want to first thank you for your hard work. Although I may not agree with every decision made by the Commission, I do greatly appreciate how difficult it is to do your job and how much public pressure you withstand without quitting. Quite an inspiration for me to always forge ahead.

I've added you to my mailing list for monthly surf fishing newsletters and reports...hoping that some of the information may help with your research, when it comes to decision making (and catching fish!). Please know that I am always available if you have any questions or need to know more about surf fishing.

Although you may know me by my books or articles, here's a little bit of background about me: My family settled in Los Angles in 1866. We lived where the USC campus is now and owned a grocery store (Wilson's), livery stable and farmed pumpkins where the Coliseum now stands. In 1922 we moved to Hermosa Beach. My great grandfather was a Los Angeles County Supervisor in the late 1890's and was one of Los Angeles' first Fire Commissioners. My dad, an investment counselor and my uncle a boat builder in Newport Beach.

Growing up along the beach in the 1960's gave me a passionate desire to be involved in the ocean. I spent most of my time surfing and fishing. In 2005 I published a book: Surf Fishing, The Light-line Revolution, that became a best seller. Not much after that I was asked by the head of California's Park System to teach surf fishing classes at the beach. Over the last 15 years I have taught over 4,000 anglers how to surf fish at clinics held during each summer at Carpinteria, Bolsa Chica State Beach, Crystal Cove State Beach and South Carlsbad State beach.

Fishing is a lifelong passion for me and at 67 I can look back at all the amazing memories. But fishing is much more than just that...and I think this is often overlooked: Fishing is the most inclusive sport on our planet. After six decades enjoying the sport I have fished with and met anglers from every race, religion, sexual orientation, political affiliation and economic status. It attacts and includes folks from every walk of life who all have the same interest. If the richest man in the world were standing next to the poorest man...and if the poorest man caught a fish..the richest man would be envious. That's what fishing does, it provides a place of inclusivity for all.

Bill

Bill Varney
(714) 377-9001
www.fishthesurf.com
Surf Fishing's Light-Line Revolution...

www.fishthesurf.com

"The Light-Line Surf Fishing Revolution"

Southern California Surf Fishing Report

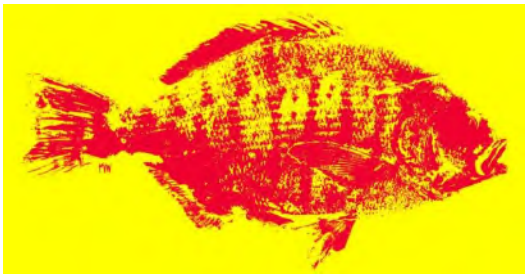
May 2026

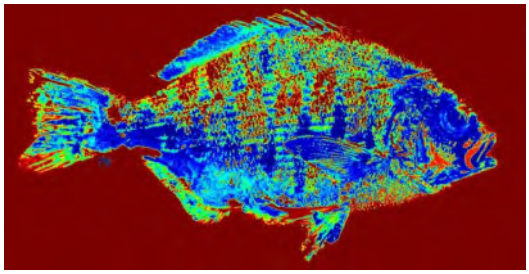
May is the month of the sand crab. It's the time when sand crabs, hiding in the sand for the winter, come to the surface and spawn. As these crabs grow they will shed their shell, just like a snake, until their new and larger shell grows in. This month begins the favorite feeding time of year for surf fish. The irresistible odor and color of sand crab

eggs leads them to their forage and their soft tasty shell brings them back.

Billions upon trillions of sand crabs invade the beach this time of year and along with grunion runs, bring surf fish close to shore. Over the last few weeks, the water has cooled as the wind has turned it over, slowing down the sand crab's progress. But look for this to change in the next weeks as South swells and warm water pushes up the coast and into California.

CHECK OUT GRUNION RUN DATES HERE





Have a great month at the beach and please send your fish reports to: fishthesurf@mail.com

Santa Barbara/Ventura: Wind and dirty water slowed fishing in Santa Barbara this week and along the entire coast. Although barred surfperch fishing remains consistent, both halibut and white seabass were a no show for legal fish this week. Look for conditions to degrade over the next five days and then improve considerably toward the middle of next week.

Ventura: Fishing slowed here too, but the corbina bite remained excellent along the Silver Stand and Ventura jetties. A legal halibut was

reported caught on a Lucky Craft Flash Minnow between the jetties closet to the Ventura Harbor. Barred surfperch fishing remains good along this stretch from County Line to Ventura for anglers using a variety of baits including grubs, mussel, lug worms and sand crabs.

Malibu: Good reports out of Malibu this week. With one angler north of County Line reporting in with 2 legal calicos and a big yellowfin croaker while using fresh mussel. Along Carbon Beach (a.k.a. Billionaire Beach), good fishing for 13”+ barred surfperch for anglers using dried Lug Worms.

Tackle/Bait Santa Barbara: Hook, Line and Sinker. Ask for Ben and tell him Bill sent you--I promise he'll take good care of you!

South Bay: Very slow this week in the South Bay with lots of kelp/grass in the surf. Anglers did report continued good, barred surfperch fishing for smaller fish. The red-hot mackerel bite continues on the Redondo Pier. If you're looking for bait for sharks or strips for striper fishing, Redondo is the place to be.

T-Shirt SALE!

(Get'em While They Last)

Hand-made using the age-old **Japanese Gyotaku process** to capture the image of fish. This form of nature printing, where ink is applied to a fish, is then transferred to paper and then on to shirts.

Check out these cool Gyotaku shirts with a perch image pressed on to cloth from a real SoCal barred surfperch. So original, you won't find another shirt like this anywhere in the world!

$25.99 CLICK HERE

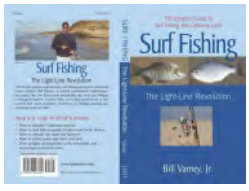
(Includes FREE Shipping)





Purchase Surf Fish Tackle HERE

Need advice or have questions: Email Bill at: fishthesurf.com

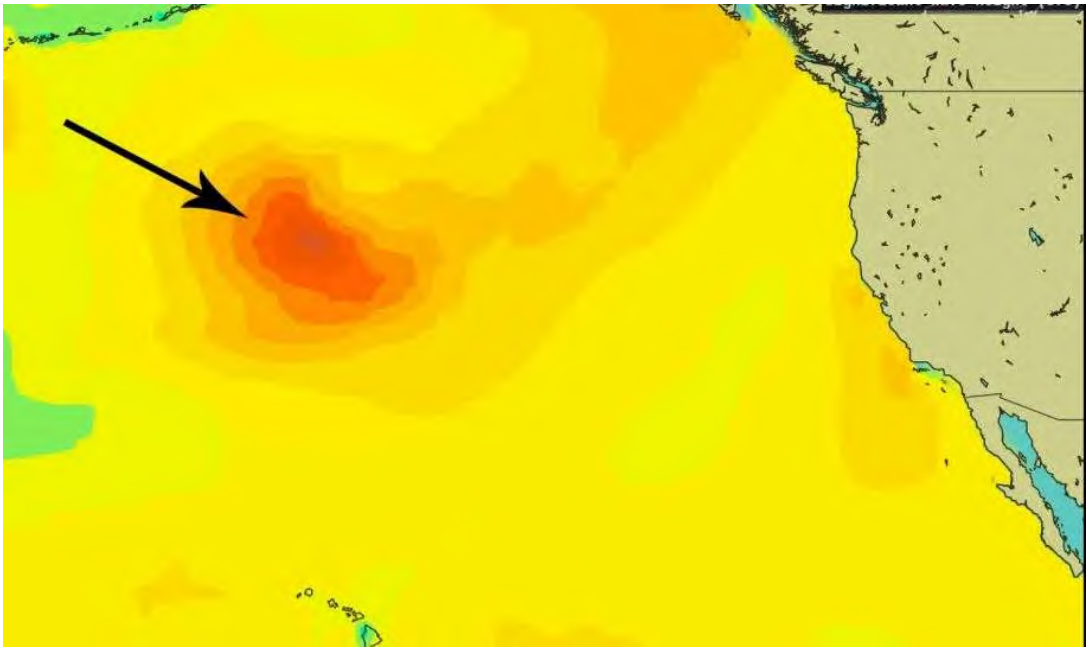



Orange County: Slower this week along the Orange County coast with tons of small, barred surfperch in Huntington Beach, a few yellowfin croaker on the iron and a legal halibut reported today caught on a lucky craft hardbait. Newport Beach was the hot spot this week kicking out two 22 & 24" Spotfin croaker caught on live ghost shrimp and one striper, caught near the Newport Pier, on a strip of mackerel. Crystal Cove reported in with one angler landing a 20" monster calico bass while using a dried Lug Worm.

Tackle/bait: Big Fish Bait and Tackle, Seal Beach

San Diego: All beaches along the San Diego stretch reporting in with slower fishing from Oceanside to Coronado, most with tons of grass and kelp clogging up fishing. Torrey Pines kicked out a legal sand bass and a 20" spotfin, both caught on sand crabs. Along Black's Beach one angler reported landing two big sargo and a big yellowfin croaker, all caught on live ghost shrimp. Many reports of anglers seeing tons of sand crabs and some really big beds below the high tide line along the entire San Diego stretch.

Tackle/bait: Pacific Coast Bait and Tackle/ Seaforth Landing



Wind and swell, whipped up by a low-pressure zone originating in northern Alaska, will produce strong winds and big swells this weekend on West facing beaches

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Conditions To Watch This Month

Synopsis: Strong winds and big swells will take center stage for the next week as a strong storm, out of the Northwest, pounds the coast. After that look for much improved weather and a series of South Pacific swells, which will bring more warm clear water north. Water temps will rise by month's end as northwest swells seasonably diminish.

Great tides will continue for the remainder of the month with the full moon and our next (no take) grunion run coming up on May 31st. May is often the last transition month before summer. Expect early morning-until noon marine layer and warming days as we move closer to June. This is also the transitional month for the tropical Pacific where we begin to see the forming of tropical storms and eventually hurricanes that make their way up the coast pushing warm, clear water into the California bight.

Water Temp: 60-67 from SB to SD. Water temps vary widely from south to north. Look for water temps to drop this weekend and into

next week with a very strong wind surge offshore. Upwelling will occur and often slows fishing.

Tides: There will be large tidal swings due to the New Moon (today) on Saturday the 16th. The next will will include great tidal movement and an upcoming grunion run. What more could you ask for! Some major tidal changes of over 7' in the next week. There will be good morning and evening high tides, minus tides for halibut and collecting bait near midday, and very strong currents along the coast.

Swell: This weekend, winds to 50 knots will blow off the coast and create a large, late season, Northwest swell. Look for surf on west facing beaches to increase today and become well overhead in size by Monday. The wind and wind swell will diminish late Tuesday. Behind this another Northwest swell will fill in. Surf will be a bit smaller but the long shore current by then should be very strong along the beach. CAUTION: Please be aware of big surf and strong current while fishing the beach, and especially along the rocks. The following week, expect small swells from the northwest and several large swells systems coming from the South Pacific...pushing warm water back this way.

Wind: Strong winds begin today with outer water winds over 40mph and winds along the shore to be 15-25mph out of the northwest in the afternoon. Stronger winds north of Los Angeles Beaches.

EL NINO Update: NOAA confirmed today that there is a coming El Nino and that it may be historically strong, but not as strong as expected. They have also predicted that there will be a substantial increase in tropical storms and hurricanes to our south.

GRUNION: Next run, May 16th 10pm, NO Take.

GRUNION RUNS ARE NOW!

You'll find a Full Schedule HERE

This week's Video Surf Fishing Report

CLICK ON PICTURE BELOW TO WATCH

Thank you to Ulysses, Demetrio, Brian, Jake, David, Dyno Dan, Johnny, Steve and Andy for your surf fishing reports!

Send your pictures and reports to: fishthesurf@mail.com

[Okuma SST and Rockaway Rods at surffishtackle.com]

FISH THE SURF.COM

Fishthesurf.com

Surffishtackle.com

464 Wilderness Dr,

Breckenridge CO

(714) 377-9001

United States of America

Outlook

Western Joshua Tree Conservation Act Adjustments

From Ed Donnelly
Date Fri 04/17/2026 08:18 AM
To FGC <FGC@fgc.ca.gov>

Commissioners,

As a resident of Pioneertown with several Joshua Trees on my property, I applaud the spirit of the Western Joshua Tree Conservation Act. That said the practicalities of working within the confines of the Act are untenable

My concerns include that the Act has created confusing and inconsitent regulations that will make it difficult to provide defensible space around buildings for wildfire protection and make it burdensome and/or expensive for hoimeowners to repair, maintain or improve their own homes.

Using the term "take", typically used to describe culling animal populations, is confusing and in appropriate for a plant. This leaves the menaing in this context vague and undefined.

As climate change threatens our landscape measures must be taken to protect both flora and fauna. Those protections need to be pragmatic.

I ask that you consider the consequences both intended and unintended of this poorly written legislation. In addition, substantive input from the Californians who live in and among the Joshua Tree forest should be included in drafting the conservation plan and reforming the Act.

Thank you.

Ed Donnelly

Outlook

Formal Demand: Inclusion of Coyote Canyon Heritage Herd as a Native Cultural Resource

From Kathleen Hayden
Date Fri 05/22/2026 05:16 PM
To FGC <FGC@fgc.ca.gov>
Cc Miner, Karen [redacted]; Kat27735 [redacted]
chelsea.oakes@sdcounty.ca.gov <chelsea.oakes@sdcounty.ca.gov>

To: Melissa Miller-Henson, Executive Director, CA Fish and Game Commission
CC: Karen Miner (CDFW) [redacted] chelsea.oakes@sdcounty.ca.gov
Subject: Formal Demand: Inclusion of Coyote Canyon Heritage Herd as a Native Cultural Resource

I. Evidence of Native Status & Evolutionary Origin
The Department's classification of the Coyote Canyon horses as "non-native" is scientifically obsolete. We submit the following as evidence of their native status:

- Genetic Antiquity (The Don Coyote Evidence): DNA analysis of the stallion Don Coyote confirms Turkoman basic DNA markers that are as ancient as the Przewalski (Equus ferus).
- North American Origin: Scientific consensus, supported by fossil and genomic data, confirms that both species originated in North America before spreading to Eurasia. The return of these lineages via Spanish expeditions was a reintroduction of a native species to its evolutionary homeland, not the arrival of an exotic one.
- ICZN Compliance: Per the International Commission on Zoological Nomenclature (ICZN) 2003 ruling, wild horses are a distinct native species (Equus ferus) and must be managed as such under California law.

II. Legal Mandates & Administrative Failure
- NHPA Section 106 & The Dugong Precedent: Under Section 106, the CDFW is legally required to inventory and protect "Cultural and Historic Resources." The Coyote Canyon Caballos d'Anza represent a 240-year cultural lineage central to California's ranching history. Failure to include them in the Multiple Species Conservation Program (MSCP) constitutes a fatal flaw in current Resource Management Plans (RMPs).
- Fatal Flaw Doctrine: Any management plan that ignores the best available science (DNA/Evolutionary data) and federal historic

preservation mandates is legally obstructed. We demand that all RMPs be stayed until they are amended to include the Coyote Canyon Heritage Herd as a protected native resource.

III. Ecological Utility: The Wild Horse Fire Brigade

The exclusion of these horses actively harms other protected species. As a biological zoning tool, the herd provides essential fuel load reduction. In the era of catastrophic wildfires, removing these natural grazers increases the "harm to all species" by allowing invasive brush to create unmanageable fire loads.

Conclusion

We demand a formal review of the Coyote Canyon Heritage Herd's status. We are prepared to submit the full Turkoman DNA reports and fossil evidence to the Commission to rectify the current administrative errors.

Outlook

Wolf

From Ginger's Home
Date Sun 04/19/2026 06:35 PM
To FGC <FGC@fgc.ca.gov>

Please Delist the Wolf. The chronic depredation is above and beyond what any other state would allow. Californians have to be able to protect their own property and livelihoods. The push from the activists groups is unrealistic and should NOT be allowed anymore! Facts are facts! The people who are living with the issues are the ones who should have the FIRST seat at the table and the only ones that matter. No one is asking to kill all the wolves- they are asking for appropriate measure of protection. With 6 years of depredations now- NON LETHAL- has already proven ineffective. Whats next. Delist the wolf it's not endangered- there are plenty- they are just not in every area- there is a difference.
Ginger Moyles.

Sent from my iPhone