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Via email: ecosystemamendment@deltacouncil.ca.gov

November 30, 2021

Harriet Ross, Assistant Planning Director
Delta Stewardship Council
715 P Street, 15-300
Sacramento, CA 95814

Subject: Delta Plan Ecosystem Amendment Program Environmental Impact Report (PEIR)

Dear Ms. Ross:

This letter originates from lands of the Lisjan Ohlones in the East Bay, of Yokut lands in the Stockton area, and Miwok lands of the Delta further north. These lands represent the great connections of the San Francisco Bay and Delta estuary, the kinds of connections that Draft Chapter 4 Ecosystem Amendments to the Delta Plan strive to represent. We at Restore the Delta strive to be mindful of these connections in our advocacy work. We respectfully remind the Delta Stewardship Council (DSC) of this California tribal history because we have had to raise yet again the need for the DSC to complete a full analysis of California tribal history, culture, and current needs in relation to the Delta Plan Ecosystem Amendment PEIR, and to avoid erasure of the history and continuing contributions of California tribes to the Delta as the unique place it is.

Restore the Delta (RTD) is a grassroots campaign of residents and organizations committed to restoring the Sacramento-San Joaquin Delta so that fisheries, communities, and family farming can thrive there together again; so that water quality is protected for all communities, particularly environmental justice communities; and so that Delta environmental justice communities are protected from flood and drought impacts resulting from climate change while gaining improved public access to clean waterways. Ultimately our goal is to connect communities to our area rivers and to empower communities to become the guardians of the estuary through participation in government planning and waterway monitoring. RTD advocates for local Delta stakeholders to ensure that they have a direct impact on water management decisions

Re: Delta Plan Ecosystem Amendment Program Environmental Impact Report (PEIR)

affecting the well-being of their communities, and water sustainability policies for all Californians.

This letter contains an overview of our comments on the Delta Plan Ecosystem Amendment Program Environmental Impact Report (PEIR) as well as an attachment providing additional specific comments on impact analyses of the PEIR as we had time for. We appreciate the opportunity to comment, and wish the Delta Stewardship Council well as it eventually implements the Delta Plan Ecosystem Amendment.

General Comments

RTD commented twice already about the Delta Plan Ecosystem Amendment—in January and July 2020, providing comments directly on an early draft Amendment, and later on the Notice of Preparation of the PEIR. We have attached these letters to this one.¹

As mentioned in the opening paragraph, the DSC continues to erase Indigenous peoples' presence from the Delta, principally by omission of their known presence in the Delta in the early 19th century. We submitted evidence of their presence in our earlier letters, but this evidence has not been incorporated into Figure 4-1 in either the 2013 Delta Plan, the synthesis papers of 2018, the draft Ecosystem Amendment of early 2020, nor this most recent version contained in Appendix C, Section 2, of the Delta Plan Ecosystem Amendment PEIR. Humans have been in the Delta since time immemorial, so the pairing of these two maps erases Indigenous peoples' presence as it tries to make a fallacious comparison.

Elsewhere in the PEIR, we appreciate that the Delta Stewardship has begun to incorporate the mandate of the Delta Reform Act of 2009 (Act) to reduce reliance on the Delta for California's future water needs into the purpose of the Ecosystem Amendment. It's a little convoluted the way it is presented, but DSC recognizes that the co-equal goals are to be achieved with this Ecosystem Amendment "in a manner that...[f]urther the statewide policy to reduce reliance in the Delta in meeting the state's future water supply needs through regional self reliance." As the DSC is aware, RTD and others interpret the reduced Delta reliance mandate as either co-equal with or even prior to the co-equal goals of the Act. The co-equal goals are in tension. They are zero-sum with respect to each other; ***you cannot increase water supply reliability and recover ecosystems in the Delta without reducing reliance on the Delta for water supply and letting more water flow through the system*** if ecosystem policies and recommendations of the Delta Plan are to be achievable. We observe, however, that the DSC's placement of the reduced-Delta-reliance policy mandate occurs only in Chapters 1 and 3 of the PEIR in relation to the purpose of the amendment. It does not occur in the Amendment language itself. We continue to encourage the DSC to further integrate the reduced Delta reliance policy mandate into its communications, policies, and programs under the Act because that is where the mandate belongs.

¹ The July 2020 letter attached the January letter, so they are included as one attachment.

It is now almost December 2021, and the State Water Resources Control Board continues to delay updating important parts of its own Bay-Delta Plan, namely flow objectives. This is significant because the DSC hitched its Chapter 4 Ecosystems ER P1 policy to the Board's own flow objectives for review of covered actions and continues to do so in this Ecosystems Amendment. It means that the DSC has acceded to a policy of delay in the face of continued deterioration of Delta ecological, hydrological, and water quality conditions—many of which are driven by flows into and through the Delta. Over a year ago, we wrote to the DSC:

If the DSC truly cares about doubling the populations of all salmon runs and Central Valley steelhead, its appointed members and executive director should be lobbying Governor Newsom to abandon the voluntary agreements—which are a delaying tactic, not a real, honest thing—and direct the SWRCB to complete its Sacramento River Basin Bay-Delta Plan flow objectives and environmental review process post haste.²

More than year has passed since we wrote these words. Since the Voluntary Agreements process began in December 2018, it has been three years of delay on the Water Board's part. We continue to doubt this Amendment will achieve a doubling of salmonid populations, but we also continue to appreciate that the DSC continues the policy and the performance measure (PM 4.6) toward this end. This is an important matter for California Indian Tribes that revere salmonids in their culture and spiritual lives, and for the state's commercial fishing industry. We applaud the goal and the performance measure and continue to wish you Godspeed achieving it.

In our last letter, we commented that it is contrary to the Act that the Delta Plan amendment has no policy to reduce the problems caused by existing nonnative invasive species as threats and stressors to existing ecosystem management and future ecosystem restoration investments without adequate flows. The Delta Science Program has been remiss about prioritizing research into flow and non-flow means of controlling *Potamocorbula amurensis* (*P. amurensis*), a voracious nonnative invasive clam that not only can consume vast quantities of phytoplankton and other forms of primary biomass production, but also bioaccumulate toxic concentrations of biologically available selenium in the water column of open waters in the Delta. An entire Delta Regional Ecosystem Restoration (DRERIP) conceptual model was devoted to its ecosystem relationships and yet no control program has been initiated by the DSP. This is something the DSC could actually do something about. We continue holding to the position that Policy ER P5 is inadequate to the task of addressing existing nonnative invasive species. It should be strengthened by adding existing nonnative invasive

² Letter of Barbara Barrigan-Parrilla and Tim Strohane, Restore the Delta, to Harriet Ross, Assistant Planning Director, Delta Stewardship Council, "Delta Plan Ecosystem Amendment NOP," July 10, 2020, p. 11. Emphasis in original. See Attachment 2 to this letter.

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species to its purview, and ecosystem restoration projects appearing before the DSC as “covered actions” should demonstrate how they will mitigate or eliminate existing

voracious invasive species like *P. amurensis* as part of their scopes, or be found inconsistent with the Delta Plan.

We provide more specific comments on the draft PEIR in Attachment 1 to this letter. Thank you for the opportunity to comment, and for your consideration of our comments on the Delta Plan Ecosystem Amendments and its Program Environmental Impact Report. If you have questions about this letter, contact Barbara Barrigan-Parrilla (209479-2053, or barbara@restorethedelta.org) or Tim Stroshane (510-847-7556, or tim@restorethedelta.org). We look forward to working with you on Adaptation Strategy development in Phase 2.

Sincerely,



Barbara Barrigan-Parrilla Executive
Director



Tim Stroshane
Policy Analyst

Attachments:

1. Specific Comments from Restore the Delta
2. Restore the Delta Letter of July 10, 2020

cc: Susan Tatayon, Chair, Delta Stewardship Council

Mike Gatto, Member

Maria Mehranian, Member

Virginia Madueño, Member

Daniel Zingale, Member

Christy Smith, Member

Frank Damrell, Member

Malissa Tayaba, TEK Director, Shingle Springs Band of Miwok Indians

Caleen Sisk, Spiritual Leader and Tribal Chief, Winnemem Wintu Tribe

Gary Mulcahy, Government Liaison, Winnemem Wintu Tribe

Kelley Taber, Somach & Simmons

Thomas H. Keeling, The Freeman Firm

S. Dean Ruiz, South Delta Water Agency

John Herrick, South Delta Water Agency

Dante Nomellini, Central Delta Water Agency

Osha Meserve, Soluri Meserve LLC

Roger Moore, Law Office of Roger B. Moore

John McManus, Golden State Salmon Association

Kimberly Warmsley, District 6, Stockton City Council

Davis Harper, The Climate Center
Ann Rogan, The Edge Collaborative
Darryl Rutherford, Reinvent South Stockton Coalition
Michelle Ghafar, Earthjustice
Nina Robertson, Earthjustice
Dillon Delvo, Little Manila Rising
Matt Holmes, Little Manila Rising
Irene Calimlim, Greenlining the Hood
Jasmine Leek, Third City Coalition
Tama Brisbane, With Our Words
Jonas Minton, Planning & Conservation League
Bob Wright, Sierra Club California
Bill Jennings, California Sportfishing Protection Alliance
Chris Shutes, California Sportfishing Protection Alliance
Carolee Krieger, California Water Impact Network
Michael B. Jackson, California Water Impact Network
Barbara Vlamis, AquAlliance
Regina Chichizola, Save California Salmon
Tom Stokely, Save California Salmon
Patricia Schifferle, Pacific Advocates
Brandon Dawson, Sierra Club California
Adam Keats, Law Office of Adam Keats, PC
Doug Obegi, NRDC
Kate Poole, NRDC
Jon Rosenfield, San Francisco Baykeeper
Gary Bobker, The Bay Institute
Mike Conroy, PCFFA

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Attachment 1 Specific Comments from Restore the Delta

1. Harmful Algal Blooms (HABs)

The season during which HABs occur has lengthened since the initial Delta Plan in 2013, their number has increased, and their geographic range in the Delta has spread. The Draft PEIR recognizes that HABs exist and that they are a problem, but in the absence of specific projects to evaluate with reference to HABs-friendly conditions, we have little comment on. However, Policy ER P1 (“Create More Natural Functional Flows”) must be stalwart when it comes to evaluating not just ecosystem restoration projects, but any covered action whose consistency with the Delta Plan must be determined with reference to Plan policies.

HABs need light, nutrients (principally phosphorus and nitrogen), warm water, and long residence times of water (i.e., slow or stagnant flow conditions) to bloom and spread. The Ecosystem Amendment’s retention of ER P1 will keep attention focused on whether

any covered action will decrease flows or otherwise worsen water quality in ecosystem restoration opportunity sites. One such covered action to come before the DSC in the near future is the Delta Conveyance Facility proposal, about which we will have more to say in our discussion of Cumulative Impacts below.

2. Mobilizing Methylmercury from Project Construction Activities and Subsistence Fishing

Because of legacy impacts of hydraulic mining in the Sierra Nevada catchments of the Delta Watershed, toxic contaminants like mercury were deposited in Delta and Yolo Bypass sediments for decades, and remain there. Construction activities will disturb channel and wetland sediments that likely contain mercury. These sediments contain bacteria which readily convert mercury to an organically consumable form through the chemical process of methylation (in the absence of oxygen) into “methylmercury.”

The PEIR does recognize ongoing presence of legacy methylmercury toxicity and ecological pathways by which it could be mobilized by restoration activities, and that mitigation strategies are available for removal or sequestration of methylmercury.

3. Carbon Sequestration and Carbon Capture Storage

The Draft PEIR recognizes the importance of carbon sequestration as an important climate-change-fighting tactic. Net carbon sequestration will be very important for the Delta Plan to contribute to our state and society’s efforts to reduce emissions of greenhouse gases and slow heating of Earth in both the near and long terms.

One non-ecosystem restoration strategy for reducing the abundant greenhouse gas carbon dioxide (CO₂) in the atmosphere is to inject it underground under pressure into relatively stable, porous geologic rock strata, where CO₂ would be entombed, hopefully permanently. The techno-geologic concept for this process is known as “carbon capture storage” (CCS). CCS, it appears, is coming to the Delta, and RTD is still studying and evaluating this geo-engineering tactic for reducing CO₂ in the atmosphere. Industrial developers of CCS would be paid by industrial dischargers of CO₂ to receive, inject, and store the gas.

There are important benefits from CCS. The primary one is that it could mimic geologic processes that have stored carbon in rock for literal eons, and with enough time, CCS supporters and researchers believe that CO₂ could be incorporated into the rock on a more or less permanent basis, sequestered away from Earth’s atmosphere. Scientists from Lawrence Livermore National Laboratory recently told a Restore the Delta webinar audience that “the Delta has world class geology” for CCS, and for that reason is the subject of considerable interest from industry.³

³ For a presentation and discussion of the benefits and risks of carbon capture and storage technology and experience, see RTD’s webinar recording from October 21, 2021 at <https://www.youtube.com/watch?v=eCxsfYJMW3s>, also accessible via <https://www.restorethedelta.org/2021/10/25/icymi-watch-our-dine-learn-webinar-on-carbon-sequestrationin-the-delta/>. It runs about 90 minutes.

The PEIR is silent on the potential environmental impacts of such technology. We recognize that interest in the Delta as a CCS zone is quite recent and that this PEIR's scope is shy of this issue. In particular, Section 5.9 on Geology and Seismicity contains no reference to either carbon sequestration or CCS potential. But we raise it to indicate that the DSC should activate the Delta Independent Science Board on CCS in the Delta in the very near future, so that our region's best scientific minds engage with the topic and with the public about this looming issue. Wherever CCS technology has been poorly regulated, there have been industrial mishaps with impacts ranging from animal suffocation to acidification of local rivers and streams.

CCS wells require at least 100 years of monitoring and emergency response plans should leakage occur. Government agencies responsible for Delta management must create a framework to protect the estuary and its communities from any negative water and air quality impacts from mechanical carbon sequestration projects.

4. Small Community Water Systems

Section 5.11 of the PEIR addresses hydrology and water quality impacts of the proposed Ecosystem Amendment to the Delta Plan. We found no mention of small community water systems in the setting discussion of this section, even though there are over 70 such systems in the Delta alone (and thousands statewide). The California Department of Water Resources studied small community water systems in 2020, and the DSC included discussion of them in its recent Delta vulnerability assessment of its "Delta Adapts" process for addressing climate change. To the extent that ecosystem restoration projects affect local hydrology, groundwater percolation, and water quality changes to local drinking water supplies, the Final PEIR should include discussion of

potential impacts and reach an impact conclusion with respect to small community water systems in the Delta.

5. Cumulative Impacts

The cumulative impacts discussion in Chapter 7 was inadequate, in our opinion. Little effort was made to sort the cumulative projects list by what type of general impact(s) each cumulative program, project, or policy has or will have on the Delta. Because the list is treated like an olio basket, it gives readers the impression that each item in the list is generally equivalent to every other. The Delta Conveyance Facility (DCF) project, however, is not like any other project. Like its recent predecessor, California WaterFix, the DCF would radically change the hydrologic regime in the Delta, lowering flows in spring and summer downstream of its North Delta intakes, and stagnating water quality downstream.

RTD became convinced of the DSC's role and of Delta Plan policies in protecting the Delta from wholesale destruction of its hydrologic and water quality regimes (beyond what deterioration has already occurred under the failed existing water quality and flow

objectives of the State Water Board's D-1641 and 2006 Bay-Delta Plan) when both Delta Plan policies WR P1 and ER P1 were key to the DSC's determination that California WaterFix as proposed was inconsistent with Delta Plan policies. We appreciate that, despite the lax treatment of the DCF in this PEIR's cumulative impacts analysis, that important Delta Plan policies like these remain in place when the DCF reaches the DSC as a covered action.

6. Alternatives

We agree that the Ecosystem Amendment as the Proposed Project represents the preferred alternative. While Alternative 3 was chosen by the DSC as the environmentally superior alternative, it halves the total amount of acreage that could be restored under the Proposed Project. This makes the Proposed Project in our view superior and more socially and ecologically desirable than Alternative 3.



via: ecosystemamendment@deltacouncil.ca.gov

July 10, 2020

Harriet Ross, Assistant Planning Director
Delta Stewardship Council
980 9th Street, Suite 1500
Sacramento, CA 95814

Subject: Delta Plan Ecosystem Amendment NOP

Dear Ms. Ross:

This letter originates from lands of the Ohlones in the East Bay and of Yokut lands in the Stockton area, and Miwok lands of the Delta further north. These lands represent the great connections of the San Francisco Bay and Delta estuary, the kinds of connections that Draft Chapter 4 Ecosystem Restoration Amendments to the Delta Plan strive to represent. We at Restore the Delta strive to be mindful of these connections on our advocacy work. We respectfully remind the Delta Stewardship Council of this California tribal history because we have had to raise once again in this comment letter the need for the DSC to complete a full analysis of California tribal history, culture, and current needs in relation to the Delta Plan Ecosystem Amendment NOP—and to avoid erasure of the history and continuing contributions of California tribes to the Delta as the unique place it is.

Our mission is to ensure the health of the San Francisco Bay-Delta estuary and Delta communities. Restore the Delta works in the areas of public education and outreach so that all Californians recognize the Sacramento-San Joaquin Bay Delta as part of California's natural heritage, deserving of restoration. Restore the Delta is a grassroots campaign of residents and organizations committed to restoring the Sacramento-San Joaquin Delta so that fisheries and farming can thrive there together again. We fight for a Delta with waters that are fishable, swimmable, drinkable, and farmable, able to support the health of the estuary, San Francisco Bay, and the ocean beyond. A coalition of California residents, business leaders, civic organizations, community groups, faithbased communities, union locals, farmers, fishermen, and environmentalists, Restore the Delta envisions the Sacramento-San Joaquin Delta as a place where a vibrant local economy, tourism, recreation, farming, wildlife, and fisheries thrive as a

result of resident efforts to protect our waterway commons. Based in the Delta, California, Restore the Delta has worked since 2006 in the areas of public education and outreach and has grown to 60,000 members from throughout California. Restore the Delta advocates for local Delta stakeholders to ensure that they have a direct impact on water management decisions affecting the well-being of their communities, and water sustainability policies for all Californians.

This letter provides the Delta Stewardship Council (DSC) with our comments on the above referenced Notice of Preparation concerning Delta Plan ecosystem amendments. The content of the NOP is deceptively large beyond the 16 pages of the official notice to the public. Its full and complete project description consists of the proposed draft Chapter 4 amendments, as well as three regulatory appendices, four technical appendices, and an appendix containing new and revised ecosystem-related performance measures pertaining to the co-equal goals (NOP, pp. 8-9). Our comments here will reflect review not just of the public notice document but of many if not all project description documents in hopes that our comments will assist DSC with making revisions during the preparation of the draft environmental impact report on the amendments. Specific comments are provided in Attachment 1 to this letter.

General Comments

- We urge the DSC to incorporate into its narrative, policies, performance measures, and appendix-based checklists that facilitate the Council's consistency certification process the needs of California Indian tribes and other environmental justice communities to obtain and receive social benefits from ecosystem restoration projects that are consistent with the Delta Plan. Much the way the DSC wishes to avoid losing opportunity sites for ecosystem restoration, California Indian tribes with cultural and material ties to the Delta wish to avoid missing opportunities to expand ethnobotanical and faunal supplies important to their cultures in the Delta portions of their homelands. As they were here first, this is an essential step toward reparations the DSC and other state agencies must extend to the tribes, easily justified as consistent with Governor Newsom's 2019 apology to California Indian tribes for past genocidal treatment.
- Our comments address what we see as a "fatal flaw" or Achilles heel in on one hand relying on State Water Resources Control Board D-1641 flow objectives as the underlying flow assumptions for a performance measure calling for the laudable goal of doubling salmonid populations—a policy goal in place already for 32 years.
- It is contrary to the 2009 Delta Reform Act that Draft Delta Plan Chapter 4 Ecosystem Restoration Amendments have no policy that addresses existing (not strictly new, as does current Policy ER P5) nonnative invasive species as a threat and stressor to existing ecosystem management but also to ecosystem restoration investments in the future, especially if flows are not adequate. Delta scientific

research into the life histories, biogeographic strategies, and metabolism of nonnative invasive invertebrate clams, for example, indicate that they consume vast quantities of food resources exported to open water habitats and often outcompete Delta pelagic resident fish species, contributing to the difficulty of recovering and enhancing these fish populations.

Thank you for the opportunity to comment on this Notice of Preparation. If you have questions or concerns, please contact us at the email addresses below.

Sincerely,



Barbara Barrigan-Parrilla
Executive Director
barbara@restorethedelta.org



Tim Stroshane Policy
Analyst
tim@restorethedelta.org

Attachments:

1. Specific Comments from Restore the Delta
2. Restore the Delta Letter of January 21, 2020

cc: Susan Tatayon, Chair, Delta Stewardship Council
Randy Fiorini, Vice-Chair, Delta Stewardship Council
Mike Gatto, Member
Maria Mehranian, Member
Oscar Villegas, Member
Daniel Zingale, Member
Frank Damrell, Member
Malissa Tayaba, TEK Director, Shingle Springs Band of Miwok Indians
Caleen Sisk, Spiritual Leader and Tribal Chief, Winnemem Wintu Tribe
Kelley Taber, Somach & Simmons
Thomas H. Keeling, The Freeman Firm
S. Dean Ruiz, South Delta Water Agency
John Herrick, South Delta Water Agency
Dante Nomellini, Central Delta Water Agency
Osha Meserve, Soluri Meserve LLC
Roger Moore, Law Office of Roger B. Moore
Jonas Minton, Planning & Conservation League
Bob Wright, Sierra Club California
Bill Jennings, California Sportfishing Protection Alliance
Chris Shutes, California Sportfishing Protection Alliance
Carolee Krieger, California Water Impact Network
Michael B. Jackson, California Water Impact Network

Barbara Vlamis, AquAlliance
Regina Chichizola, Save California Salmon
Tom Stokely, Save California Salmon
Patricia Schifferle, Pacific Advocates
Kathryn Phillips, Sierra Club California
Brandon Dawson, Sierra Club California
Adam Keats, Center for Food Safety
Doug Obegi, NRDC
Kate Poole, NRDC
Jon Rosenfield, San Francisco Baykeeper
Gary Bobker, The Bay Institute
Mike Conroy, PCFFA
John McManus, Golden State Salmon
Michelle Ghafar, Earthjustice
Nina Robertson, Earthjustice
Dillon Delvo, Little Manila Rising
Elaine Barut, Little Manila Rising
Jasmine Leek, Third City Coalition
Nathan Werth, Substratum Systems
Tama Brisbane, With Our Words
Nicholas Hatten, LGBT Social Justice Initiative

Attachment 1

Specific Comments from Restore the Delta

Restore the Delta’s specific comments on this Notice of Preparation (NOP) are organized around two main sections—the substance and scope of the project description, and the scope of the environmental analysis (to be derived from the substance and scope of the project description). We have also focused our comments on Delta Plan policies since they are the primary enforcement tools the DSC possesses to seek and achieve compliance of covered actions with the Delta Plan and intent of the Delta Reform Act. In between these two sections we provide brief specific comments about Draft Chapter 4 narrative passages.

Comments on Substance and Scope of NOP Project Description:

Unchanged Chapter 4 Policies:

- **ER P1**—This policy essentially states that whatever flow objectives for the Sacramento and San Joaquin River contained in State Water Resources Control Board (SWRCB) flow objectives are those of the DSC as well. This policy is reasonable given the DSC’s jurisdictional limitations (i.e., the Legal Delta), but because this policy relies entirely on SWRCB Delta flow criteria (since DSC lacks authority to set such water quality objectives), the Draft EIR should fully disclose an up-to-date status of the SWRCB’s Bay-Delta Plan process, including any and all “voluntary agreements.” This Delta Plan policy is protective of Delta ecosystems and resources only so long as flow objectives approved by the SWRCB for the updated Bay-Delta Plan (especially on the Sacramento River side) strengthen Delta inflow, outflow, and the long-term seasonally regulated position of X2, the estuarine habitat water quality objective in the Bay-Delta Plan. We have further comments about this policy in relation to Performance Measure 4.6, the salmon doubling goal, below.

- **ER P5**—This policy is addressed to stemming the introduction and spread of new nonnative invasive species. This is a policy for grasping low-hanging fruit, we hope. We recommend strengthening this policy to help the state of California address the need to manage better the Bay-Delta Estuary’s nonnative invasive clams (especially *Potamocorbula amurensis*, which inhabits brackish waters of the estuary from Suisun Bay often to the western Delta, and *Corbicula fluminea*, which inhabits fresher waters in the central and southern Delta). By having no policy to address these invasive clams, the DSC fails to recognize that for these clams, flow is key to limiting their habitat ranges, and that these two clam species pose grave threats to habitat restoration contributions (also known as “exports”) to open water food supplies for the very resident native fish species (e.g., Delta smelt, longfin smelt) the DSC aspires to help with its habitat restoration policies in the Chapter 4 amendments. This omission represents a likely fatal flaw in the overall strategy of these amendments to the Delta Plan. These were the same problems identified

by an independent panel of scientists sponsored by American Rivers and the Nature Conservancy in 2013.⁴ They concluded:

BDCP documents acknowledge (but then mostly ignore) that grazing by clams that settle in or near restored subtidal areas may remove all or most of the phytoplankton production and some of the zooplankton. Grazing by clams and zooplankton (including microzooplankton) removed all of the phytoplankton production in the LSZ nearly all the time from late spring through fall during 1988 – 2008 (Kimmerer and Thompson submitted.). Whether clams settle in the newly restored areas is critical in determining whether the area can export any phytoplankton (Lucas and Thompson 2012). At present clams are not abundant in Suisun Marsh except for the larger Suisun and Montezuma Sloughs, where they probably remove a substantial fraction of the phytoplankton and small zooplankton that would otherwise enter Grizzly Bay.⁵

The DSC acknowledges that these clams exist, but also ignores the policy relevance of the problems they pose to tidal and subtidal ecosystem restoration projects' production and export of food supplies to open water habitat. The fact that managing these clams would require investment of flow goes unacknowledged. The DSC states:

Widespread and Unmanaged Species: These nonnative species are widespread and known to cause problems (e.g., invasive Asian clams that rapidly deplete plankton from the water column), but they are not currently being actively managed—typically because of lack of feasible control options.⁶

Ecologists studying San Francisco Bay and Delta ecosystems may refer to invasive species like *P. amurensis* as “stressors”; that is, such species “stress” native or long-established Bay and Delta species by creating stiff competition for niches, consumption of food resources, and energy—the bases for reproductive advantage in ecology.⁷ *P. amurensis* has had two important “stressor” roles:

- First, its voracious consumption of plankton outcompetes native open water larval fish like Delta smelt.

⁴ American Rivers and The Nature Conservancy, *Independent Panel Review of the Bay Delta Conservation Plan*, September 19, 2013, pp. 73-79. See also footnote 6 of Attachment 2 to this letter, Restore the Delta's letter of January 21, 2020 to the DSC concerning a prior draft of Chapter 4.

⁵ *Ibid.*, p. 78.

⁶ Draft Chapter 4, *Protect, Enhance, and Restore the Delta Ecosystem*, p. 4-52, item 2.

⁷ For example, the *BDCP 2013*, Appendix 5.F, included among biotic stressors on covered fish invasive vegetation, invasive mollusks (*P. amurensis* and *C. fluminea*), and *Microcystis*, a key cyanobacterium causing harmful algal blooms.

- Second, its physiology takes up bioavailable selenium and eliminates it only very slowly. The clam's shallow burial in sediments makes it easy prey, and its predators bioaccumulate the selenium it contains into their tissues.

Both of these stressor impacts are directly related to flow and water quality changes that result from water project operations.

The overbite clam poses a sustained threat to the food web of the Delta estuary, contributes to the risk of extinction of Delta smelt, and its further spread—made potentially easier by removing fresh Sacramento River flows from the estuary by north Delta diversions to a tunnel project—could pose a public health threat because of its affinity for bioaccumulating selenium. A reasonable policy toward these nonnative overbite clams should be to contain it, keep its range as narrow as possible by applying fresh water to its range from the east and north. ***First do no more harm to the Delta Estuary***, should be the underlying premise of such a policy. That means keeping the Sacramento River flowing through its mainstem from I Street in Sacramento through to Chipps Island the way we now do. And mimicking the patterns (though not the historical volumes) of inflow from both the Sacramento and San Joaquin should also help contain spread of the overbite clam.

Testimony Restore the Delta supplied to the SWRCB during the change petition hearing on water rights of the California WaterFix project provided detailed compilation of scientific papers and summary analysis. **The DSC is not using best available science in reviewing and updating its ecosystem restoration policies.**

Water Code section 85302(c)(4) states that the Delta Plan shall include measures that promote (among other characteristics) reduced threats and stresses on the Delta ecosystem. We point out that this the construction of this passage is inclusive about all stressors. It does not distinguish between whether, for example, nonnative invasive species are new or existing. The Delta Reform Act (from which the above summarized section is obtained, and p. 2 of “Relevant Legislation”) requires the Delta Plan to include measures to reduce the threats and stresses of nonnative invasive species whether they are new or not. In this respect Policy ER P5 is contrary to plain language in the Delta Reform Act that requires you to develop a policy for existing nonnative invasive species. This part of the DRA does not provide the DSC with a “where feasible” exemption for dealing with the overbite clam. **The DRA compels DSC to put establish and implement a policy for existing nonnative invasive species, including the overbite clam.**

Revised Chapter 4 Policies

- **ER P4**—This policy seeks to expand floodplains and riparian habitats in levee projects. We think this is a good policy since it seeks to create balance in the need to invest in Delta levees (since they are crucial to protecting ongoing public health

and safety⁸, agricultural productivity, and “through-Delta” conveyance whether a tunnel project is built or not) while creating space and opportunities for new habitat restoration.

- **ER P2**—This policy seeks to restore habitats at appropriate elevations. This strikes us as a good idea as well, and that it will function as a reasonable climate adaptation strategy. It reflects the DSC’s change in Core Strategy 3 to safeguarding against land loss. No explanation is given for why the old Core Strategy 3 was deleted for “improving water quality to protect the ecosystem.” While a climate adaptation strategy, it is likely not sufficient, since Delta habitat and ecosystem restoration projects are to address “process” restoration—that is, projects should create pathways by which water, sediment, nutrients, and other essential restoration components connect sources of these components with sites that need them. There is no associated policy that seeks to connect needed supplies of sediment to the Delta, even though the narrative earlier in Draft Chapter 4 acknowledges sediment issues. Sediment supply will be vital for establishing and buttressing ecosystem restoration projects from the ravages of sea level rise in the Delta. Sediments are accumulating behind upstream dams in the Delta’s Central Valley watershed (part of the extended planning area). The DSC should address this issue squarely. It appears to represent another fatal flaw in the overall ecosystem restoration strategy of Draft Chapter 4.
- **ER P3**—This policy seeks to protect opportunities to restore habitat. As we see it, it applies logic of the California Environmental Quality act to opportunity restoration sites. This is a good idea. The revisions as proposed appear to clarify and simplify the language used to express the policy. Potential covered actions are to avoid or mitigate to a less than significant level the pre-emption or elimination of restoration opportunity sites, which the DSC identifies in Draft Chapter 4 at Figure 4-7 on page 4-48.

New Draft Chapter 4 Policies

There is only one new policy proposed for Draft Chapter 4.

- **ER Policy “A”**—This new policy appears to us to combine a habitat checklist with an implicit scoring system to force project designs to be mindful of all Delta Plan policies, and thereby improve the quality of project designs, it is hoped. We think this is a good policy. However, we note that the problem statement appearing just before New Policy A seem misaligned to us. On one hand, state agencies need “new funding sources” to implement large-scale restoration project and to “support multi-benefit projects that go above and beyond mitigation of impacts.” The same agencies, says the problem statement, “have limited ability to change

⁸ On this see Restore the Delta, *Climate Equity and Seismic Resilience in the San Francisco Bay-Delta Estuary*, 2019, pp. 41-42. Accessible at <https://www.restorethedelta.org/climate-equity-and-seismicresilience-for-the%E2%80%A8-san-francisco-bay-delta-estuary/>.

[singlespecies conservation and recovery projects] due to permitting requirements and restrictions on the amount and use of public funds.” These two statements reflect a lack of clarity, we think, on the DSC’s part. Is the problem a lack of new funding, or is it that the existing funding sources for restoration projects are considered by DSC to be hamstrung by problems it associates with policies in existing endangered species laws and regulations? And what does this problem, however much merit it may have, have to do with requiring restoration project covered actions to complete its checklists in Appendix 3A, Section 1?

To the extent that Restoring Ecosystem Function must also be elevation-conscious and therefore climate-adaptive, we suggest the DSC take a leadership role in publicizing the problem to educate the public about these two problems—funding and endangered species act policies. In the meantime, it strikes us that New Policy A does not address its problem statement at all.

We were glad to see that in Appendix 3A, Section 1, that the DSC incorporates sediment “delivery” as an important process for tidal wetland, nontidal wetland, willow thicket, willow riparian/shrub, and valley foothill riparian ecosystems in Table 1-1. We would expect that the degree to which proponents of covered actions include sediment delivery—while also noting the source—could be useful information to inform DSC policy making, perhaps for devising a new performance measure regarding sediment supply to the Delta for restoration purposes.

We also gladly note that the DSC has incorporated a number of environmental justice-friendly elements into Section 2 of Appendix 3A as concerns cultural, recreational, natural, and agricultural benefits of restoration-related covered actions. We recommend that the DSC work with Indigenous experts in “Tribal Ecological Knowledge” (TEK) with the Miwok, Ohlone, Yokut, and Nisenan and other interested tribal communities to identify botanical and faunal species as well as spiritual sites using land use and other mechanisms for increasing tribal members’ access to gathering and spiritual sites within restoration projects as part of implementing social benefits that project proponents could achieve.

We further recommend that as part of the Section 2 social benefits checklist that the DSC seek out opportunities with covered action proponents to create greater connections linking Delta ecosystem restoration projects with disadvantaged communities and environmental justice communities in the cities that ring and the legacy communities of the legal Delta, including recreational, cultural, and natural benefits. Such a strategy will invest in creating and expanding a future constituency for protecting the Delta. The DSC cannot do alone, that much is clear.

Comments on Draft Chapter 4 Narratives

Role of Indigenous Peoples in Delta Ecological History

We appreciate that the DSC has incorporated several new passages that describe the life ways and deep knowledge that Indigenous people have about the Delta region. We thank you that some of your narrative additions reflect contributions we submitted in our letter of January 21, 2020. We remain disappointed that you continue to present Figure 4-1, and that the caption for this map contains no acknowledgement of the geography of Indigenous villages in the Delta region, even after we supplied you in this above mentioned letter with two maps indicating where Indigenous villages were known based on ethnographic research. You have even cited to the very research we supplied to you for the narrative descriptions. It should also be employed to update the Figure and its caption. Otherwise the DSC is still contributing to the erasure of Indigenous peoples who did in fact live and actively manage Delta wetlands for their life ways and livelihoods. See Attachment 2 to this letter.

Other Passages

- **Basic Delta Reform Act Policies**—The DSC continues, we think errantly, to elevate the coequal goals in framing its mission at the expense of the state’s clearly mandated policy that water users reduce their reliance on the Delta when determining California’s future water needs. The point of reducing reliance on the Delta as a source of water is to free up flows into and through the Delta with less exportation occurring. In so doing, it also reduces reverse flows in Old and Middle River because export pumping there would be decreased. This in turn would increase hydrologic connection between the San Joaquin River and the rest of the central and western Delta. This policy, not the shifting of export diversions to the north Delta, does much to shift the general flows in the Delta from north-south to east-west, contrary to former California WaterFix orthodoxy. The reduced Delta reliance policy then is key to the types of process restoration concepts and actions Draft Chapter 4 seeks to implement. Its omission from the “Relevant Legislation” portion of the narrative should be rectified by including it.
- **“A Call for Action”**—This passage (pp. 4-19 to 4-22) states, “Within the restoration science community there is an emerging emphasis on the importance of implementing process-based restoration because such actions address the fundamental causes of degradation of the ecosystem, rather than the symptoms.” (p. 4-21, top) Flow is a fundamental driver of ecosystem processes, since water flows transport nutrients, suspended contaminants, sediment, organisms of various kinds migrating downstream, and so on. Here we reiterate our view that the reduced Delta reliance policy be recognized as an ecosystem restoration-friendly policy and included in the “Relevant Legislation” portion of the narrative.

Performance Measure Comments

- **PM 4.6, Salmon Doubling Goal**—Water Rights Decision 1641 (D-1641) has been in effect for 20 years now, and during that 20 years, salmonid populations have generally continued to decline. We appreciate that the DSC wants to not only state as a goal but quantify as a performance measure the doubling of California’s Central Valley salmonid populations. This is an important matter for California Indian tribes that revere salmonids in their culture and spiritual lives, and for the state’s commercial fishing industry. We applaud the goal and the performance measure and wish you Godspeed in achieving it.

We are doubtful you can achieve it, however, in the absence of clear flow objectives, water project operational changes, and ecosystem restoration actions that create a net increase in food resources for the fish. The DSC, as we pointed out regarding Policy ER P1, relies on the SWRCB’s flow objectives which at present provide flows in the Sacramento and San Joaquin Rivers that have been insufficient to even maintain salmonid abundances in since the objectives took effect. There is little reason, given climate change, to believe that salmonids will benefit from status quo flow objectives, and so we feel that this Performance Measure 4.6 will document a record of failure, rather than of success. **If the DSC truly cares about doubling the populations of all salmon runs and Central Valley steelhead, its appointed members and executive director should be lobbying Governor Newsom to abandon the voluntary agreements—which are a delaying tactic, not a real, honest thing—and direct the SWRCB to complete its Sacramento River Basin Bay-Delta Plan flow objectives and environmental review process post haste.**

Comments on NOP CEQA Required Analysis:

Restore the Delta requests that the Draft EIR on Draft Chapter 4 Ecosystem Restoration Amendments address several matters:

- **Human Right to Water (AB 685)**—This law requires that all relevant state agencies must take account of the fundamental human right to water, and to do so when undertaking state planning efforts, such as this set of ecosystem restoration amendments to the Delta Plan. We think this required policy analysis should be undertaken in the water quality section if the Draft EIR. Within the framework of AB 685, the Draft EIR should examine effects of the ecosystem restoration amendments on:
- Small community water systems throughout the Delta. By our count of data from DWR’s recent report on small community water systems in California, we count at

least such systems many of which provide domestic water to rural communities within and around the Delta.⁹

- Municipal drinking water treatment plants and water quality as well as drinking water treatment costs that may be associated with implementation of ecosystem restoration amendment projects.
- We appreciate the separation and distinction—although we also find it somewhat confusing—between “Tribal Cultural Resources” and “Cultural and Paleontological Resources.” “Cultural Resources” is nowhere defined in the NOP, nor is it defined in the glossary appearing after Appendix 4A in other NOP materials. On the face of it, one might think they should be combined. We don’t recommend this. But we do suggest the DSC provide clear definitions of Tribal cultural resources and “cultural resources” in the Draft EIR. In fact, we recommend that the DSC change the “Cultural and Paleontological Resources” section of the Draft EIR to “Archaeological and Paleontological Resources” so that this section focuses archaeological assessment on Euro-American colonial-era resources (starting with mission influences, Spanish military expeditions, fur trappers, and early American period structures, cemeteries and other such sites.

• **Suggested Cumulative Impacts’ Project List**

Delta Conveyance Project and SWP Contract Amendment	Various water projects contained in the Water Resilience Portfolio
Sites Reservoir	Shasta Lake expansion and Dam raise
San Joaquin Valley Water Blueprint projects	California Aqueduct repairs due to land subsidence from excessive groundwater pumping.
Del Puerto Reservoir	Permanent Water Contracts of Westlands Water District and other CVP contractors.
Long-term Operations of the CVP and SWP (not necessarily coordinated).	Eco-Restore Projects completed, under construction, and in planning stages.

• **Alternatives**

We request that the DSC analyze an alternative in the Draft EIR that examines impacts of a “Reduced Delta Reliance Alternative” that reduces exports by 20 percent and examines the ecosystem, social, and water quality benefits of doing so.

⁹ See “DWR Releases Drought Planning Report,” for data on Delta small community water systems, accessible at <https://water.ca.gov/News/Blog/2020/April/DWR-Releases-Drought-Planning-Report>.



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21 January 2020

Susan Tatayon, Chair
Delta Stewardship Council
980 Ninth Street, Suite 1500
Sacramento, CA 95814

Subject: Preliminary public review draft of amendments to Chapter 4, Ecosystems, of Delta Plan

Dear Chair Tatayon:

Restore the Delta advocates for local Delta stakeholders to ensure that they have a direct impact on water management decisions affecting the water quality and well-being of their communities, and water sustainability policies for all Californians. We work through public education and outreach so that all Californians recognize the Sacramento-San Joaquin Delta as part of California's natural heritage, deserving of restoration. We fight for a Delta whose waters are fishable, swimmable, drinkable, and farmable, supporting the health of the San Francisco Bay-Delta Estuary, and the ocean beyond. Our coalition envisions the Sacramento-San Joaquin Delta as a place where a vibrant local economy, tourism, recreation, farming, wildlife, and fisheries thrive as a result of resident efforts to protect our waterway commons.

We appreciate the opportunity to comment on the amended preliminary public review draft of Chapter 4 of the Delta Plan. We also thank the Delta Stewardship Council's (DSC) for deciding to push back the comment deadline from January 6 to today. The extra two weeks to review documents and prepare comments we have appreciated, and hopefully will provide the DSC with better comments from the public as a result.

Restore the Delta recognizes that the Delta Stewardship Council (DSC), while a relatively small agency within the state of California, is charged with addressing the needs of a relatively complex region of the state, the Delta. Not only is the Delta conceptually complicated, the reality and implications of climate change mean that the Delta becomes something of a moving target for purposes of planning and regulation. We recognize too that the DSC a year ago bravely declined to issue a certification of consistency for the California WaterFix dual-tunnels project because as a covered action it failed to comply with key features of the Delta Plan as it was then. This decision

was a critical step in the eventual decision of the Newsom Administration to shelve California WaterFix in favor of other potential actions, and it has given the Delta community a badly needed opportunity to not only recover from the campaign against the project, but to formulate alternative futures for the Delta region in an era of climate change, economic uncertainty, and opportunities for youth to envision alternatives for the Delta's future.

The DSC has also articulated in its Delta Plan Five-Year Review a number of key planning topics and emerging issues in which the Delta Plan could serve as a policy and programmatic vehicle for improving conditions in and throughout the Delta. These include the DSC's recognition of environmental justice and disadvantaged communities, as well as the legacy Delta communities as key long-term stakeholders in the Delta's future; climate change, and coordination and participation with federal agencies, not just other state and local agencies.

It is in these diverse contexts that the DSC proposes changes to Chapter 4 of the Delta Plan, to protect, restore, and enhance the Delta ecosystem.

General Comments

- The preliminary public review draft of Chapter 4 retains important ecosystem protection, restoration, and enhancement policies from the previous version. However, the preliminary draft is clearly different from the previous chapter 4, with numerous changes to narrative and to policies and recommendations have been made. We request that the DSC staff prepare a summary of exactly what those changes are and where they are located when it comes before the Council for review.
- We appreciate that the DSC retains Policy ER P1, Delta Flow Objectives, without change. This is vital because Delta inflow is the driving mechanism for the health and sustainability of all other ecosystem elements in the Delta, including Delta water quality, and the unique character of Delta communities and cities.
- We appreciate also that the DSC proposes ER Policy A to extend environmental justice and other social issues and concerns to DSC evaluations of consistency certifications for covered actions. There are important things the DSC should do to ensure meaningful public outreach to these communities and applicant compliance (not just to the letter but to the spirit of the policy), we are grateful to see this proposed policy come into consideration. We look forward to working with DSC to implement ER Policy A.
- We sense from this preliminary draft of Chapter 4 that there is much uncertainty as to the rate at which sea level rise and other effects of climate change will challenge the efficacy and sustainability of ecosystem restoration projects that come before the DSC as covered actions. We have concerns about this too, many of which we stated in our

2019 report on *Climate Equity and Seismic Resilience in the San Francisco Bay-Delta Estuary*. We attach and incorporate by reference this report and refer the DSC to our concerns and findings about seismic risk and climate change contained especially in Chapters 2 and 3, and Appendix E to the report.

- In its Five-Year Delta Plan Review, the DSC states, “The Delta will experience climate change effects both from gradual changes and from extreme events that are likely to become more frequent.” Preliminary Draft Chapter 4 appears to follow this line of thinking from the Five-Year Delta Plan Review. Extreme events and gradual change are not the only climate change realities we and the DSC face. More frequent extreme events (atmospheric rivers, droughts, wildfires) are distinct from “gradual climate change,” but we also think these two manifestations of climate change are distinct from “abrupt climate change.” These are instances where a climate-based tipping point is passed.¹⁰ Abrupt climate changes may occur in the very near future, if it has not already commenced. Our attached report states some key reasons for it, including ice sheet melting and massive releases of carbon to the atmosphere from arctic permafrost regions. We urge the DSC and its Delta Science Program to acknowledge and incorporate abrupt climate change into planning efforts, including Chapter 4.
- To help increase the DSC’s understanding and application of principles of climate justice in the reality of climate change, we also request that you add definitions for both “environmental justice communities” and “disadvantaged communities” to 23 CCR 5001 (Definitions, p. 4A-3 of Appendix 4A). Please be aware that environmental justice communities were originally defined in Presidential Executive Order 12898 as including communities of color, including non-white race and ethnic groups, as well as people who are impoverished, which can include persons from any race or ethnic group. This is the definition on which Restore the Delta relies for our understanding of communities facing disproportionate burdens from environmental hazards and injustices. It is also important to include in these suggested definitions reference to state and federal civil rights provisions in law that outlaw discrimination on a variety of grounds. Such policies of necessity govern within the scope of DSC’s jurisdiction and deserve explicit recognition through regulatory definition.
- DSC should redouble its efforts to ensure that the historical role of Indigenous California communities in the Delta and in its broader watershed are accurately portrayed in scientific representations in Chapter 4 and elsewhere in the Delta Plan. In our specific comments in Attachment 1, we note an ongoing problem with Figure 4-1,

¹⁰ Two examples of abrupt climate change include: first, massive releases of methane and carbon dioxide from the permafrost in the Arctic region that could rapidly and irreversibly increase greenhouse gas emissions and accelerate global temperature increases; and second, abrupt and accelerated melting of arctic sea ice, the Greenland ice sheet, and the West Antarctic and/or East Antarctic ice sheets melting and calving into the Southern Ocean.

where “early 1800s” Indigenous tribal communities are omitted from a comparison with “early 2000s” ecosystems and human communities.

- The existing nonnative invasive invertebrate species, *Potamocorbula amurensis*, is not merely one of many stressors. It threatens eventual toxic pollution of benthic food webs in the Estuary as well as the ongoing overconsumption of primary ecological production by phytoplankton that threatens starvation for other species reliant on primary production species. The DSC needs to assert policy guidance that addresses existing nonnative invasive that threaten to undermine future ecosystem and habitat restoration projects, as well as existing food webs.
- Accordingly, Restore the Delta-proposes the following policy, since flow is the master ecological variable in the Delta: “Covered actions involving flow and diversion alterations shall only be certified as consistent with the Delta Plan when they demonstrate that they will contribute to permanent reductions in existing populations and/or geographic ranges of nonnative invasive species and cyanobacteria, sufficient for (not just protection) but restoration and enhancement of Delta ecosystems.”

We have more specific comments below in Attachment 1 to this letter that are intended to increase the scientific and evidentiary basis of the narrative sections supporting Chapter 4 policies. Strengthening and clarifying narrative findings is vital to the success of Chapter policies, since they are the legal and policy structures that support DSC consistency determinations for covered actions.

In sum, Restore the Delta remains concerned that the DSC continues to cherry-pick, consciously or not, what it view as “best available science.” Authentic science goes where the evidence leads. We do agree that DSC is charged with using best available science—and in the best sense of that phrase we think it means that the best and most current data, the most insightful concepts, and the most revealing methodologies contribute greatly to achieving the application of best available science to the policy problems the DSC faces.

Thank you again for the opportunity to comment. Please contact us via email below if you have questions for us.

Sincerely,
Attachments:

1. Specific comments by Restore

Barbara Barrigan-Parrilla
Executive Director
barbara@restorethedelta.org



Tim Strohane Policy the Delta
Analyst

tim@restorethedelta.org



2. Restore the
Delta, *Climate
Equity and*

Seismic Resilience for the San Francisco Bay-Delta Estuary, August 2019.

Accessible at

https://www.restorethedelta.org/wpcontent/uploads/RTD_Climate_Equity_Report_2019_Final.pdf

cc: Randy Fiorini, Vice-Chair
Frank C. Damrell, Member
Mike Gatto, Member
Maria Mehranian, Member
Oscar Villegas, Member
Ken Weinberg, Member
Thomas H. Keeling, The Freeman Firm
Kelley Taber, Somach & Simmons
S. Dean Ruiz, South Delta Water Agency
John Herrick, South Delta Water Agency
Dante Nomellini, Central Delta Water Agency
Osha Meserve, Soluri Meserve LLC
Roger Moore, Law Office of Roger B. Moore
Jonas Minton, Planning & Conservation League
Bob Wright, Sierra Club California
Bill Jennings, California Sportfishing Protection Alliance
Chris Shutes, California Sportfishing Protection Alliance
Carolee Krieger, California Water Impact Network
Michael B. Jackson, California Water Impact Network
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Tom Stokely, Save California Salmon
Patricia Schifferle, Pacific Advocates
Kathryn Phillips, Sierra Club California
Brandon Dawson, Sierra Club California
Adam Keats, Center for Food Safety
Doug Obegi, NRDC
Kate Poole, NRDC
Jon Rosenfield, San Francisco Baykeeper
Gary Bobker, The Bay Institute
Noah Oppenheim, PCFFA
John McManus, Golden State Salmon
Michelle Ghafar, Earthjustice
Nina Robertson, Earthjustice
Dillon Delvo, Little Manila Rising
Elaine Barut, Little Manila Rising
Jasmine Leek, Third City Coalition
Sammy Nunez, Fathers and Families San Joaquin

Irene Calimlim, Fathers and Families San Joaquin
Nathan Werth, Substratum Systems
Tama Brisbane, With Our Words
Nicholas Hatten, LGBT Social Justice Initiative

Attachment 1
Restore the Delta's Specific Comments on 
Preliminary Draft Chapter 4 of the Delta Plan

NARRATIVE SECTION

- ***Climate Change:*** In addition to our comments about abrupt climate change in the cover letter, we note that the preliminary draft Chapter 4 fails to incorporate findings about climate change impacts to water supply and environmental quality from the Fourth California Climate Assessment (4CA). It is nowhere cited to in the references of the preliminary draft, nor are any supporting studies associated with 4CA employed and referred to that we could identify. We think this is a grave oversight, and strongly suggests that the preliminary draft Chapter 4 is not based on best available science. While not typically specifically focused on the Delta, the 4CA reports contain numerous analyses and supporting reports and special reports that DSC staff could have availed itself of, particularly as concerns sea level rise impacts in the Delta and indigenous tribal impacts of climate change that may impact ongoing indigenous tribal usage of the Delta. We respectfully suggest references we employed in our attached Restore the Delta report that would help fill these and other gaps between preliminary draft Chapter 4 and 4CA. If the Delta Science Program or Delta Independent Science Board has issues or concerns with the quality and scope of the 4CA, this should be addressed in preparation of the final draft of Chapter 4.
- ***Indigenous Tribal Presence and Use of Delta:*** We appreciated seeing reliance on research on pages 4-6 to 4-7. However, given that, as the DSC writes, “Research over the past several decades has revealed extensive indigenous knowledge of the use of burning to manage the Delta landscape,” it would be entirely appropriate to elaborate on what their land management practices, especially as they may relate to management of channel margins, riparian corridors, upland ecosystems, and other prey species for which they managed. This is especially concerning since these are lands that will either be directly affected by sea level rise in the Delta, will provide adaptation space, or will become new areas of littoral or shoreline environments.
- ***Indigenous Tribal Presence in Delta Historical Ecology:*** Figure 4-1, p. 4-8, of preliminary draft Chapter 4, presents a mapped comparison of “early 1800s” versus “early 2000s” historical and modern Delta waterways. The early 1800s map indicates no Indigenous California tribal settlements, while several Delta cities are located on

the early 2000s map. The comparison, unfortunately, is not of apples and apples, but of apples and oranges. While the maps do provide a comparison of water way dendritic flow and channel patterns, inclusion of cities in one and of no settlements in the other suggests inaccurately that there were no Indigenous tribal settlements or communities present in the early 1800s. In 1926 UC Berkeley archaeologist W. Egbert Schenk, published a literature search for potential archaeological sites in the Delta and northern San Joaquin Valley region identified within the Delta.¹¹ He studied sixteen historical journal accounts of Spanish military personnel and priests. From that information he developed an estimate of population for the area that ranged from 3,000 to 15,000 indigenous persons, which at that time would have greatly outnumbered European Americans in the region.¹²

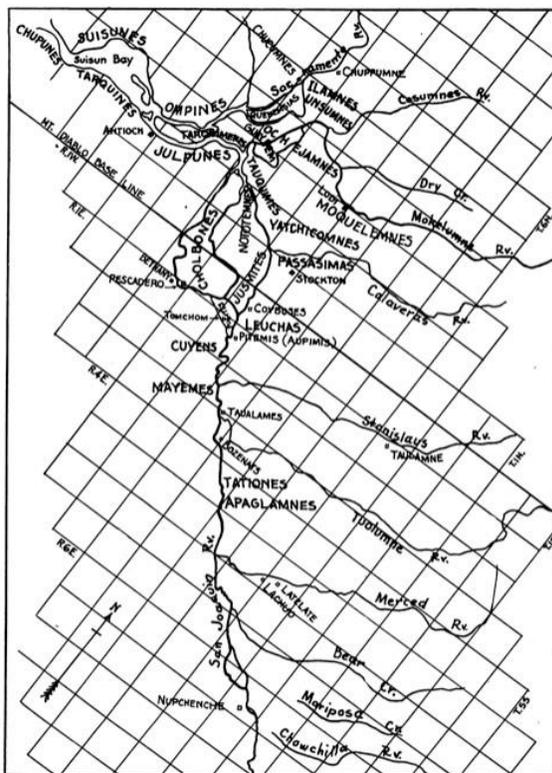


Fig. 1. Map showing location, according to streams, of groups mentioned in Spanish reports.



Fig. 2. Map showing probable areas occupied by the major groups of the aboriginal population in the Sacramento-San Joaquin delta region.

From Schenk 1926, see footnote 2 of this letter.

¹¹ W. Egbert Schenk. 1926. "Historical Aboriginal Groups of the California Delta Region." *University of California Publications in American Archaeology and Ethnology* 23(2): 123-146, issued November 13. Accessible at <http://dpg.lib.berkeley.edu/webdb/anthpubs/search?all=&volume=23&journal=1&item=3>.

¹² *Ibid.*, p. 132.

Schenk also included two maps that should be of interest to the DSC, reproduced below. These two maps indicate general territories where Indigenous communities laid claim to resources and at least seasonal residences in the region. There may be more recent such research, including by Indigenous researchers, that we are unaware of. But we present this information to insist that a balanced comparison be provided in Figure 4-1, so that the DSC does not continue to perpetuate erasure of the record of Indigenous peoples' Delta residency at a time of more sinuous and tidal marshdominated habitat. Both maps need to convey the human-nature presence, and the comparison is how that human-nature presence has changed, not one of an imaginary pristine Delta 200 years ago to one that is now urbanized and channelized. Without changes to Figure 4-1, the DSC is not employing best available scientific methods in publishing such a comparison.

- ***Stressors and Nonnative Invasive Species:*** The DSC has omitted toxic contaminants from its treatment of stressors in preliminary draft Chapter 4. On p. 4-9, Chapter 4 states, "The current state of the Delta ecosystem has been severely affected by loss of natural communities, loss of land-water connections, and alteration of hydrology. These stressors have caused a loss of ecosystem function, imperiling many native species and decreasing their resilience to other stressors such as nonnative invasive species, predation, and climate change." This paragraph goes on to list "major causes of ecosystem decline" which will be discussed in this section of Chapter 4. We wish to remind the DSC that as part of its Delta Ecosystem Stressors synthesis report (dated April 5, 2018 the primary stressors of the Delta system (of which DSC lists eight) included "water quality impairment" which covered "flow alterations, and nutrient and contaminant inputs from agriculture and wastewater treatment facilities affect food web function, facilitate non-native aquatic plant growth, and create toxic conditions for native species." The Stressors synthesis also noted that "Aquatic species are directly impacted and water quality is implicated as a major driver of the Pelagic Organism Decline."¹³ This omission from Chapter 4 truncates the significance of nonnative invasive invertebrate species, especially *Potamocorbula amurensis*, the overbite claim. In our comments on the Stressors synthesis to DSC on April 23, 2018, we suggested that the DSC rely upon the conceptual models available to the public by the California Department of Fish and Wildlife (the "DRERIP models").¹⁴ While employing DFW's Delta Conservation Framework and Ecosystem Restoration Program Conservation Strategy for the Delta, DSC has ignored use and certainly reference to any of DFW's conceptual models, which represent a scientific community consensus on the conceptual and causal mechanisms and factored associated with Delta ecosystems and their biophysical and biochemical interrelationships. **By ignoring application and acknowledgement of these**

¹³ Delta Stewardship Council. 2018. *Delta Ecosystem Stressors: A Synthesis*. Public Review Draft. April 5, p. 23, Table 2. Accessible at

¹⁴ See pages 4-5 of our comment letter, footnote 2.

models, DSC is failing to base its Chapter 4 narrative and policies on best available science.

- ***The existing nonnative invasive invertebrate species, Potamocorbula amurensis, is not merely one of many Delta stressors.*** The preliminary draft Chapter 4 fails to foreground the seriousness of this bivalve's continuing occupation of the Bay-Delta Estuary. It threatens eventual toxic pollution of benthic food webs in the Estuary as well as the ongoing overconsumption of primary ecological production by phytoplankton that threatens starvation for other species reliant on primary production species. The DSC needs to assert policy guidance that addresses existing nonnative invasive that threaten to undermine future ecosystem and habitat restoration projects, as well as existing food webs. This policy guidance should encourage use of freshwater flows to better control this nonnative invasive bivalve and ensure that covered actions do not worsen existing nonnative invasive species presence and damage to Delta ecosystems. This is a fundamental part of protecting the Delta, before even restoration and enhancement can become meaningful outcomes. **To ignore this problem means that the DSC is not relying on best available science to protect, restore, and enhance Delta ecosystems.**
- ***Selenium and Potamocorbula amurensis, the nonnative invasive bivalve:*** Restore the Delta and the California Water Impact Network have prepared summary syntheses in testimony provided to the State Water Resources Control Board concerning interactions between selenium, a recognized toxic contaminant-stressor in the Delta, and *P. amurensis*.¹⁵ The essential points are that selenium arrives in the Delta water from two directions—from the west where point sources are petroleum refineries, and from the southeast where nonpoint sources are irrigated selenium-containing lands of the western San Joaquin Valley. *P. amurensis* arrived about 1986 and has significantly colonized the benthic (bottom sediment) communities of Suisun Bay and the western Delta. Unfortunately, *P. amurensis* is a dramatic bio-accumulator of water-borne chemical species of selenium that become bioavailable in slow flows. *P. amurensis* prefers brackish to salty water, and the Delta's western waters often have that water quality profile. US Geological Survey studies indicate that this bivalve is dramatically reduced, if not eliminated during high, sustained fresh water flows. Unfortunately, the dominant water export regime in the Delta tends to sustain conditions that are more brackish. *P. amurensis* also is a voracious filter feeder in open waters, which has resulted in dramatic alteration of the phytoplankton

¹⁵ Testimony of Tim Stroshane, policy analyst with Restore the Delta, Before California State Water Resources Control Board Hearing in the Matter of California Department of Water Resources and United States Bureau of Reclamation Request for a Change in Point of Diversion for California WaterFix, November 29, 2017, pages 13-25. Accessible at https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/exhibits/docs/RestoretheDelta/part2/RTD_12.pdf; and California Water Impact Network, Recent Salinity and Selenium Science, prepared by Tim Stroshane, for Workshop 1, August 12, 2012. Accessible at https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/docs/cmnt081712/tim_stroshane.pdf

foundation of the Delta's estuarine food webs. It is the combination of these three factors— export-oriented flow regimes in the Delta leaving the western Delta brackish, with *P. amurensis*'s proclivities toward selenium bioaccumulation and voracious filter feeding that have caused resident fish to become listed species and threaten ecosystem

restoration projects that seek to promote tidal marsh food exports to open waters in the estuary. This latter problem comes about because such food supplies will largely be inhaled by *P. amurensis*, rather than the intended, desired species such projects seek to feed. A fourth factor in *P. amurensis*'s reign as a vexing nonnative invasive species is state and federal agencies' unwillingness to manage the system to eliminate this species from the Bay-Delta Estuary. That would take greater fresh water flow, the one thing that no regulator, fisheries agency, nor water agency has yet had the courage to act on. DSC leadership through a new policy and related recommendations addressing *P. amurensis*'s threat to both existing food webs and future restoration efforts is badly needed. **Without addressing existing nonnative invasive species like *P. amurensis*, the DSC is not proceeding in the preliminary draft Chapter 4 on the basis of best available science.**

- **More analysis of harmful algal blooms is needed and policy attention directed to it by the DSC in preliminary draft Chapter 4.** Warmer water temperatures are expected to lead to more, and more frequent HAB occurrence under climate change. HABs threaten to undermine benefits of ecosystem restoration projects in the future, which as covered actions that are found consistent with the Delta Plan, the DSC must be concerned about. The implications of this threat to restoration works is glossed over in preliminary draft Chapter 4. Warmer water is not the only condition for HAB formation, for there must be absence of flow—lengthened residence time of water which often occurs during drought periods (intra-annual as well as inter-annual)—as well as abundant sunlight, ample nutrient concentrations, such as phosphates and ammonium. Unfortunately, a team of scientists (led by Dr. Peggy Lehman of the California Department of Water Resources) found that “once established” cyanobacteria that cause harmful algal blooms are “likely to be resistant to extreme wet conditions, as long as water temperature and other key water quality conditions are favorable.”¹⁶ This strongly suggests that the preliminary draft Chapter 4 of the Delta Plan should ensure that such ecological factors are given priority in covered actions certifiable as consistent with the Delta Plan going forward. Desirable levee and ecosystem restoration projects must include features and elements that counteract the conditions—either passively or actively—that contribute to HAB formation.

Recently, we learned that DWR scientists gathered data on 2019 HABs in the Delta and found a total of eleven (11) different species of cyanobacteria that bloom, many of which have cyanotoxins. We understand some species of cyanotoxins can become airborne, meaning that HABs are not just toxic when ingested by humans or dogs, but may be inhaled by human beings next to or not far from water bodies where HABs are present. This raises a serious public health concern for Delta residents in warm seasons. Stockton environmental justice tracts near the Port of Stockton and South

¹⁶ P.W. Lehman, T. Kurobe, and S.J. Teh. 2020. Impact of extreme wet and dry years on the persistence of *Microcystis* harmful algal blooms in San Francisco Estuary. *Quaternary International*, accessible at <https://doi.org/10.1016/j.quaint.2019.12.003>. This article is designated open access.

Stockton waterways were recently awarded AB617 status to foster improved air quality conditions. The proliferation of airborne cyanobacteria could undercut other efforts to improve air quality for these impacted Delta environmental justice communities. Policies that support public and environmental health should be considered an element in the DSC's mandate for protecting the Delta as place. **In the absence of such a policy based on a fuller interpretation of HAB formation factors, the DSC is not proceeding in the preliminary draft Chapter 4 on the basis of best available science.**

- **Controlling and reducing HAB formation from now on should be an important policy goal in Chapter 4** not just because of benefits that can be expected for ecosystem and habitat restoration projects, but because they will also benefit Delta legacy communities and Delta environmental justice and disadvantaged communities (about which the DSC wrote eloquently in its recent 5-year Delta Plan review). HABs are also a public health concern, and it goes to the heart of how communities can enjoy summer water-based recreation or subsistence fishing when its waters may be polluted with unsightly and toxic HABs. Over time, a community's perception that its summertime water access is choked off because of such toxicity will languish into a disconnection of that community to its local water environment. This is an incalculable tragedy that for many in the Delta's environmental justice and disadvantaged communities has already occurred: young people feel disconnected from their neighboring sloughs and rivers, and to the environmental values that they might otherwise enjoy in the presence of healthy water bodies.

POLICY SECTION

- **New ER Policy A:** Section (a)1 is awkwardly worded, sprawling, and repetitive. May we suggest this friendly rewrite for section (a):
 - (a) Certifications of consistency for covered actions described in Subsection (b) shall:
 1. Identify priority attributes for each covered action and disclose the action's contribution to restoration of a resilient, functioning Delta ecosystem using Appendix 3A (Section 1, including documentation required), and associated ecosystem restoration tier for the action based on its priority attributes.
 2. Identify and disclose the action's cultural, recreational, agriculture, and/or natural resource attributes anticipated from project implementation using Appendix 3A, Section 2.
- **Revised ER P4:** We respectfully suggest a clarification to state in section (a):
"Consistency certifications for levee projects must evaluate, and, where feasible,

incorporate alternatives [or take advantage of all opportunities] to increase floodplain and riparian habitats.”

- **New ER Recommendation A:** There is a typographical error in Appendix 3A, Table 1.62.2, p. 3A-18. Field 1, we believe, should refer to Table 1.6.2, not 2.6.1?
- **New ER Recommendation B:** We respectfully suggest that this recommendation be revised to include application of the Good Neighbor Checklist not only to restoration projects but to levee projects as well. It could be rewritten to state: *“Project managers should use the Department of Water Resources’ Good Neighbor Checklist when planning and designing restoration and levee projects, in order to demonstrate that their project avoids or reduces conflicts with existing uses.”*
- There is a typographical error in Policy ER P2 section (b), p. 4-63. “The certification of consistency for a covered action that takes place, in whole or in part, in the Intertidal Elevation Band and Sea Level Rise Accommodation Band shall **be** based on best available science.”
- Restore the Delta-proposes the following policy, since flow is the master ecological variable in the Delta: “Covered actions involving flow and diversion alterations shall only be certified as consistent with the Delta Plan when they demonstrate that they will contribute to permanent reductions in existing populations and/or geographic ranges of nonnative invasive species and cyanobacteria, sufficient for (not just protection) but restoration and enhancement of Delta ecosystems.”