

Development of Tribal Beneficial Uses and Strategies for Healthier Water

Uses of Water: Nexus between Water Quality and Quantity



A Concurrent Session at the 43rd Annual Salmonid Restoration Conference
Santa Cruz, California, April 29 - May 2, 2025

Workshop Coordinator: Sherri Norris, California Indian Environmental Alliance and Tribal Partners



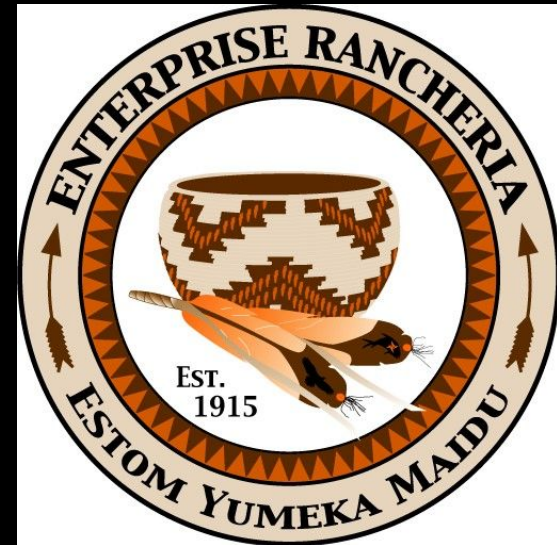
This workshop focuses on the history of establishing beneficial uses to support beneficial uses of water, water quality and fish tissue testing for toxins of concern, database entry and reporting, interpretation of results, the process to develop Total Maximum Daily Loads to reduce toxins and emerging regulatory efforts and development of health advisories. We will discuss the new Tribal Beneficial Use designations, challenges to designations with these uses, recommendations being developed by Tribes, communities and state agencies, and the steps to prepare for the negotiations among agencies stakeholders to set Water Quality Objectives. The intersection between flows and water quality will be discussed and finally we will share and discuss an overview of how to develop healthful instream flow criterion.

Presentations



- **Water Quality Standard Use: Application and Challenges, Sarah Ryan, Big Valley Rancheria Environmental Director; Debie Rasmussen, EPA Director Enterprise Rancheria; and Sherri Norris, Executive Director, California Indian Environmental Alliance.....Slide 4**
- **Watershed Flows, Jon Rosenfield, Science Director, SF Bay Keeper; and Max Gomberg, Water Policy Advisor Shingle Springs Band of Miwok Indians.....Slide 14**
- **History of Tribal Beneficial Uses, Strategies for Healthier Water and Current Status of Designations, Sarah Ryan Big Valley Rancheria; Vice-Chair Malissa Tayaba, Shingle Springs Band of Miwok Indians; Krystal Moreno, TEK Program Manager, Shingle Springs Band of Miwok Indians; and Max Gomberg, Water Policy Advisor Shingle Springs Band of Miwok Indians.....Slide 33**
- **Data Collection and Reporting for Water Quality Objectives Workshop, Sarah Ryan, Big Valley Rancheria; and Sherri Norris, CIEA.....Slide 56**

ENTERPRISE RANCHERIA & FEATHER RIVER SALMON DISTRIBUTION PROGRAM





ABOUT US

•Enterprise Rancheria has been distributing salmon to tribal members from the Feather River Hatchery since 2003. The Tribe pays the workers, which are tribal members and tribal youth for this service during spawning season at the Feather River Hatchery and has an MOA with California Department of Fish & Wildlife, under the Authority of mutual goals, various penal codes and Executive Orders.

PURPOSES:

TO MAKE FEATHER RIVER
CHINOOK SALMON AVAILABLE
TO THE TRIBE FOR BENEFICIAL
NON-COMMERCIAL USE,
INCLUDING SUSTENANCE
NEEDS, ANIMAL FOOD
CONSUMPTION & PLANT
FERTILIZER.





OVERVIEW

Surplus Hatchery Salmon can be collected by the Tribe and be distributed as a “gift” to tribal members.

Each salmon distributed must be documented, each sub-recipient must have a load form on their person for transportation, and that must include, name/ID, date, count etc.; to provide to law enforcement upon request.

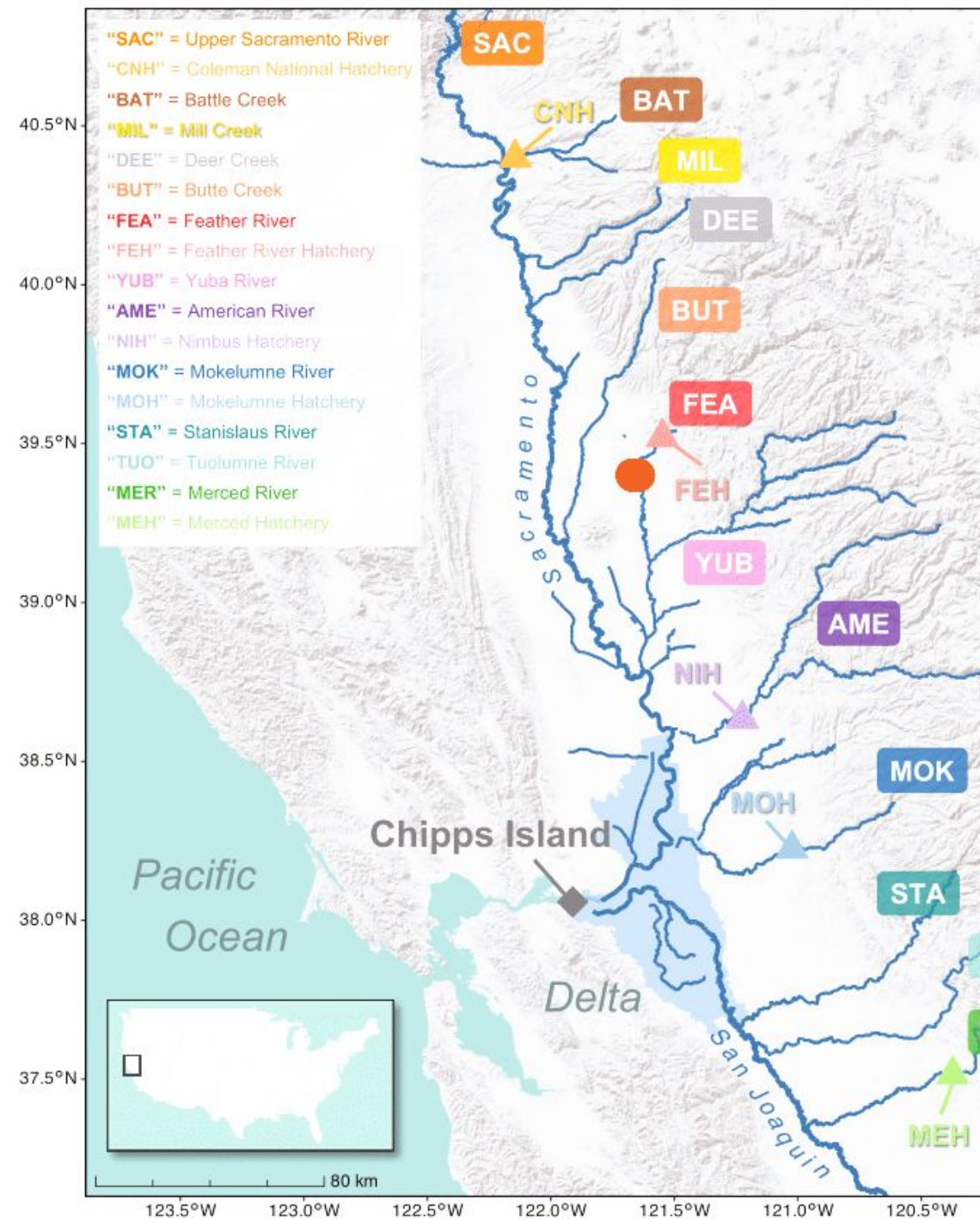
These logs must be turned into CDFW daily.

PROBLEM

- **2025:** American Canadian Fisheries (ACF) no longer collects carcasses from FRFH. Over the summer CDFW, then tribes were notified that ACF intended to withdraw from their agreement with California Emergency Foodlink to provide ice & cold storage, collect carcasses, process them, and return frozen fish filets from California salmon hatcheries due to significant increases in operational costs.
 - As a result, CDFW had to develop a payable contract for the removal of Chinook Salmon carcasses that are collected at FRFH and transferred to Sacramento Rendering Company.
 - This sets the tribe back because now we no longer have ice, refrigeration, bins for cold storage between distribution, no frozen filets returning and a race to distribute fresh salmon to tribal members, and tribes before they spoil in the heat.
 - All the efforts to restore salmon populations just to send what Tribes cannot giveaway to rendering?
-

SALMON DATA & TRIBAL BENEFITS

- In 2025 Enterprise Rancheria's hatchery employees distributed 1,560 salmon to more than 11 Federally Recognized Tribes and tribal members.
- Employees also were responsible for filleting approximately 800 of the salmon.
- To the right is a map of California's Central Valley showing the locations of Chinook Salmon production areas (hatcheries) of which I am unsure if programs such as ours exist.





ADDITIONAL BENEFIT FOR TRIBES

- Local Maidu Tribes share a benefit to access our living cultural resources and hold permits issued by the State of California and the Department of Fish & Game
- This allows Maidu Tribes to take fall run chinook salmon in the Feather River using the traditional fishing equipment of the Maidu Indian Tribes, such as spears or dip nets.

PROGRAM EXPANSION & SUSTAINABILITY STRATEGY

- Strengthen government to government relationship with the California Department of Fish & Wildlife and regional tribes
- Develop tribal-led cold storage and transportation capacity
- Train and employ more tribal youth in fisheries and living cultural resources work
- Establish long term agreements to ensure consistent salmon distribution and access





CALL TO ACTION: SUPPORTING TRIBAL FOOD SOVEREIGNTY

- Recognize salmon as a cultural and subsistence resource, not waste
- Support tribal access to hatchery surplus before rendering
- Invest in infrastructure for cold storage, processing, and distribution
- Promote policies that prioritize tribal food security and cultural practices.
- Partner with tribes to expand similar programs statewide.



THANK YOU

Debie Rasmussen

EPA Director for Enterprise Rancheria

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No amount of western science can be applied as a solution to the problems caused by western science.....

Protecting Beneficial Uses of Water from Unsustainable Diversions in the SF Bay Estuary Watershed

Jon Rosenfield, Science Director



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BAYKEEPER®



San Francisco Bay Estuary & Watershed

Home to Remarkable Aquatic Diversity

- Four unique Chinook Salmon populations
- Two unique populations of Steelhead
- Two species of sturgeon
- Numerous endemic fish species



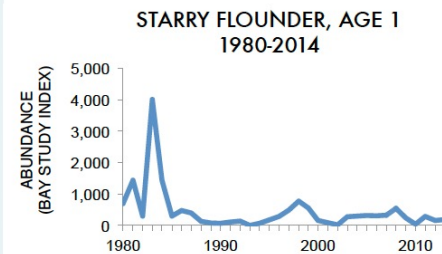
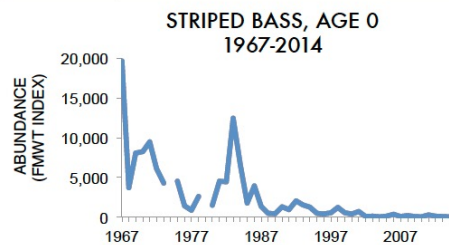
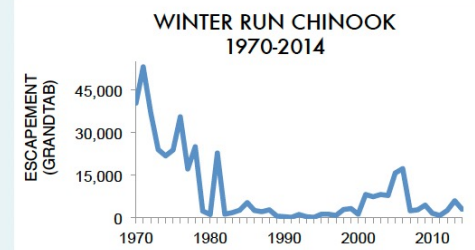
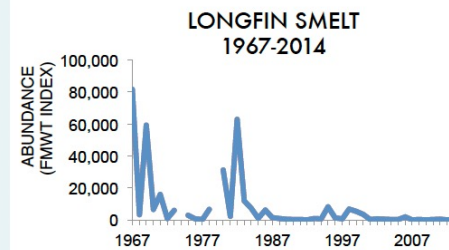
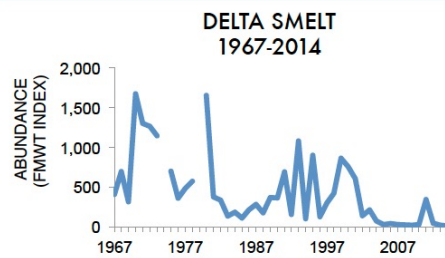
Courtesy California Dept. Fish & Game

San Francisco Bay Estuary in Decline

An Unacceptable Status Quo

- Seven declining endangered fish species
- Insufficient food for endangered Orca whales
- Crumbling fisheries

COLLAPSE OF SPECIES ACROSS MULTIPLE TROPHIC LEVELS



Figures from The Bay Institute

San Francisco Bay Estuary in Decline

An Unacceptable Status Quo

- Increasing frequency of toxic algal blooms in the Bay-Delta
- Increasing acreage of invasive aquatic vegetation
- Sediment starved wetland restoration projects

STOCKTON, CA 2021



DISCOVERY BAY, 2021



Images from San Francisco Baykeeper

Bay-Delta Water Quality Control Plan

A once-on-a-generation chance to do ecosystem management

Bay Delta Water Quality Control Plan (WQCP)

- Required under the state & federal Clean Water Acts to protect identified beneficial uses
- Developed by State Board, complimentary to Central Valley and SF Bay Basin plans
- Protections extend far beyond those for endangered species; required outcomes are more than simply “keep things from going extinct”
- Recognizes flow volume as a water *quality* parameter
- Review is required every 3 years
 - Current review process began in 2009 -- many safeguards date to 1995
 - 18 years into a 3-year review

"Water flow can be regulated as a water quality objective because ... 'the rate and quantity of flow ... are physical properties or characteristics of the water' which 'have an impact on the beneficial uses of' water in the Bay-Delta.

State Water Res. Control Bd. Cases, 136 Cal. App. 4th 674, 701 (2006)

Identified Beneficial Uses for the Bay-Delta WQCP

- Municipal and Domestic Supply (MUN)
- Industrial Service Supply (IND)
- Industrial Process Supply (PRO)
- Agricultural Supply (AGR)
- Ground Water Recharge (GWR)
- Navigation (NAV)
- Water Contact Recreation (REC-1)
- Non-Contact Water Recreation (REC-2)
- Shellfish Harvesting (SHELL)
- Commercial and Sport Fishing (COMM)
- Warm Freshwater Habitat (WARM)
- Cold Freshwater Habitat (COLD)
- Migration of Aquatic Organisms (MIGR)
- Spawning, Reproduction, and/or Early Development (SPWN)
- Estuarine Habitat (EST)
- Wildlife Habitat (WILD)
- Rare, Threatened, or Endangered Species (RARE)
- **Tribal Tradition and Culture (CUL) -- PROPOSED**

Table 2-1: Existing and Potential Beneficial Uses of Water Bodies in the San Francisco Bay Region

COUNTY	Human Consumptive Uses										Aquatic Life Uses					Wildlife Use			Recreational Uses	
	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHELL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV	
<i>MARIN COUNTY</i>																				
Pacific Ocean (Marin)					E		E	E		E	E	E	E		E	E	E	E		
Abbotts Lagoon										E					E	E	E			
Drakes Estero							E	E		E	E	E	E		E	E	E			
East Schooner Creek								E	E			E	E	E	E	E	E	E		
Home Ranch Creek									E			E	E	E	E	E	E	E		
Limantour Estero							E	E		E	E	E	E		E	E	E			
Glenbrook Creek									E			E	E		E	E	E	E		

Excerpt of Table 2-1 of San Francisco Bay Basin Plan

Tribal Subsistence Fishing (T-SUB) and General Subsistence Fishing (SUB) not identified as beneficial uses of the WQCP

Bay-Delta Water Quality Control Plan

Current Plan Requirements are Inadequate to Protect Fish & Wildlife

The existing Water Quality Control Plan is widely understood to be inadequate even after added protections under Endangered Species Act biological opinions

“Recent Delta flows are insufficient to support native Delta fishes for today’s habitats”

State Water Board 2010

“Recent Delta flows are insufficient to support native Delta fishes in habitats that now exist in the Delta”

CDFW 2010

“...current [Delta] outflow volumes are inadequate to protect the ecosystem, and current outflow requirements are even lower and less protective”

State Water Board 2018

River Flow: the Master Variable

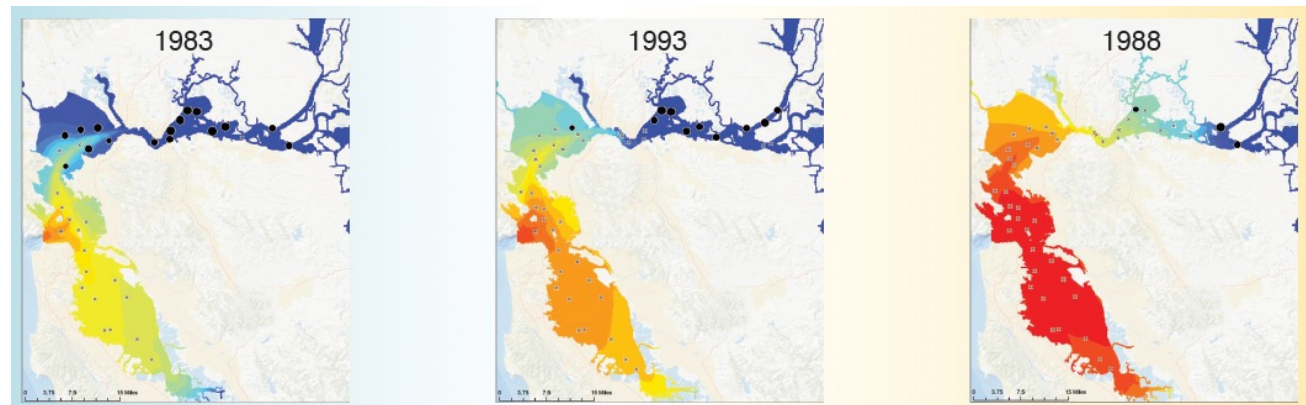
“Flow is commonly regarded as a key driver or “master variable” governing the environmental processes in riverine and estuarine systems such as the Bay-Delta and its watershed”

-- State Water Board 2017

Flow affects:

- Salinity distribution
- Temperature (upstream & downstream)
- Sediment transport & Water clarity
- Currents
- Residence time
- Abundance/distribution of fish & other organisms (incl. invasives, predators, & toxic algae)

Salinity



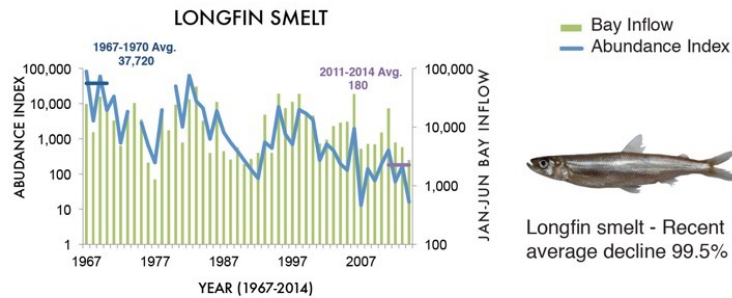
■ Fresh ■ Brackish ■ Marine

Figures from US EPA

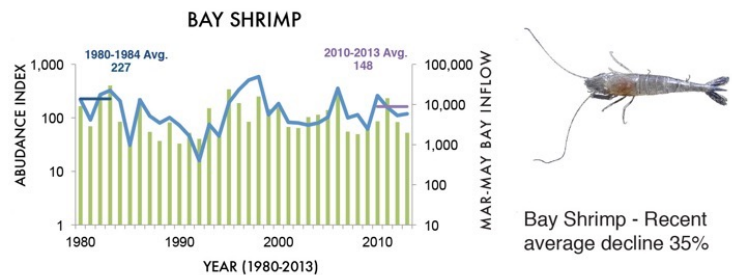
Fish and Wildlife Response to Changing Freshwater Flows

SPECIES	NATIVE?	LIFE SPAN (YEARS)	RESIDENT/ MIGRATORY/ NURSERY REARING	REPRODUCES WHERE?	ABUNDANCE CORRELATED WITH FLOW?
Chinook Salmon	Yes	3-5	Anadromous	River	YES
Striped Bass	No	4-10	Anadromous	River	YES
Green Sturgeon	Yes	Decades	Anadromous	River	YES
Delta Smelt	Yes	1	Resident	Delta	YES
Longfin Smelt	Yes	1-3	Resident/ Migratory	Delta/ Suisun	YES
Starry Flounder	Yes	7-8	Nursery Rearing	Ocean	YES
Sacramento Splittail	Yes	5-7	Resident	Shallow Freshwater	YES
American Shad	No	5-7	Migratory	River	YES
Staghorn Sculpin	Yes	1-3	Resident	Ocean/ Estuary	YES
Leopard Shark	Yes	Decades	Nursery Rearing	Ocean/ Bay/ Estuary	YES
Bay Shrimp	Yes	1.5-2.5	Nursery Rearing	Ocean	YES

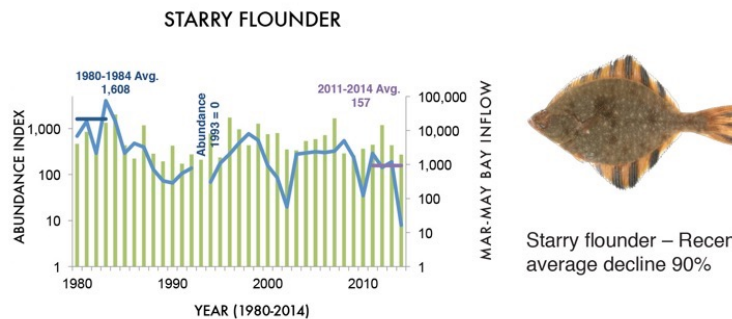
Fish Population Response to Changing Freshwater Flows



Longfin smelt - Recent average decline 99.5%

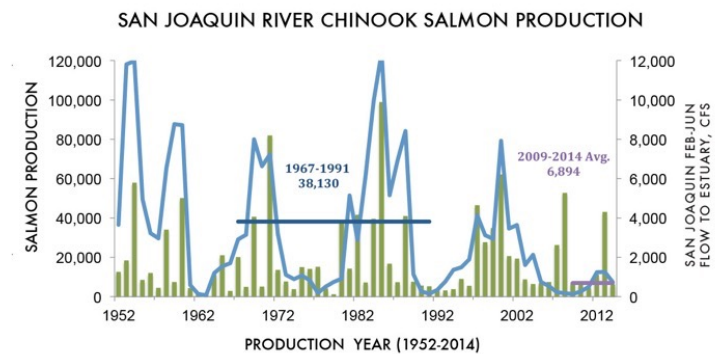


Bay Shrimp - Recent average decline 35%



Starry flounder - Recent average decline 90%

More flow \cong More Fish



Chinook salmon - Recent average decline 89%

Figures from *The Bay Institute*

<https://tinyurl.com/TBI-Freshwater-starved-estuary>

Fish Population Response to Changing Freshwater Flows



White Sturgeon by Fiorella Ikeue in collaboration with SF Baykeeper

Copied from CDFW 2023 (Sites Reservoir ITP) @ 292

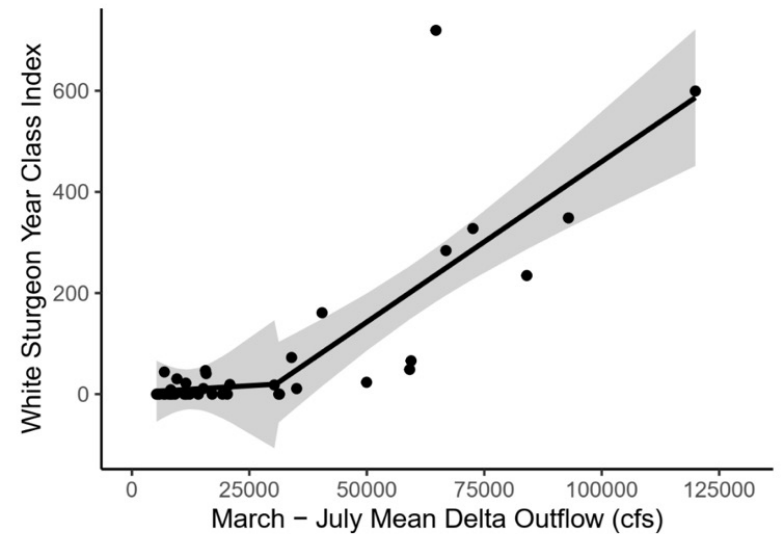


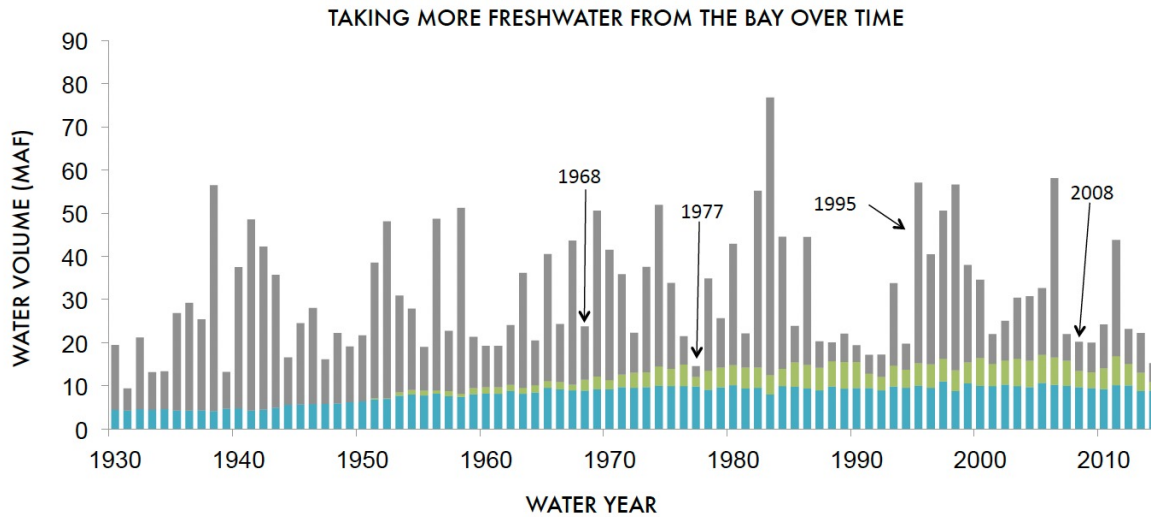
Figure 4-117. White Sturgeon year class strength plotted against mean March–July Delta Outflow (cfs). Black curve is a piecewise regression fit to the plotted data; shaded region shows the 95% confidence band around the model fit. Break point in the piecewise regression is at 30,639 cfs. Model coefficients and model fit information are in Table 4-39.

Table 3.6-1. Delta Outflow (cfs) Indicated to Be Protective of White and Green Sturgeon. Outflows are monthly averages.

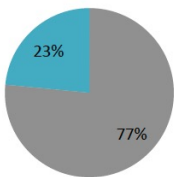
	Months												
	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec	
Delta Outflow			>37,000										

Copied from SWRCB 2017 @ 292

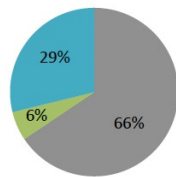
Where Does the Bay's Inflow Go?



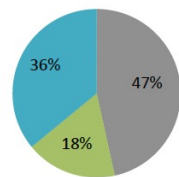
1930 - 1949



1950 - 1974



1975 - 2014



- Bay Inflow
- Delta Exports
- Upstream Diversion

Figure from The Bay Institute

Diversions in the Central Valley & the Delta remove >50% of San Francisco Bay's inflow, on average.

Percentage of flow diverted is higher in dry years



Bay-Delta Water Quality Control Plan

“Progress” through 2025

- **2018** Partial update:
 - San Joaquin River standards require ~40% of Feb-June unimpaired flow to reach the Delta
 - Update Not implemented; Blocked by Newsom administration
- **2018** Framework for Sacramento River + Delta flows proposed:
 - “Viability” objective for migratory fishes
 - New minimum river flow objectives
 - Limits on state and federal water export operations
 - Minimum storage requirements for upstream reservoirs to protect cold water habitat needed by spawning salmon
 - Governor Newsom blocks these updates in favor of negotiating “Voluntary Agreements”
- **2025** Water Board proposes to adopt Newsom’s “voluntary agreements,” over the Framework

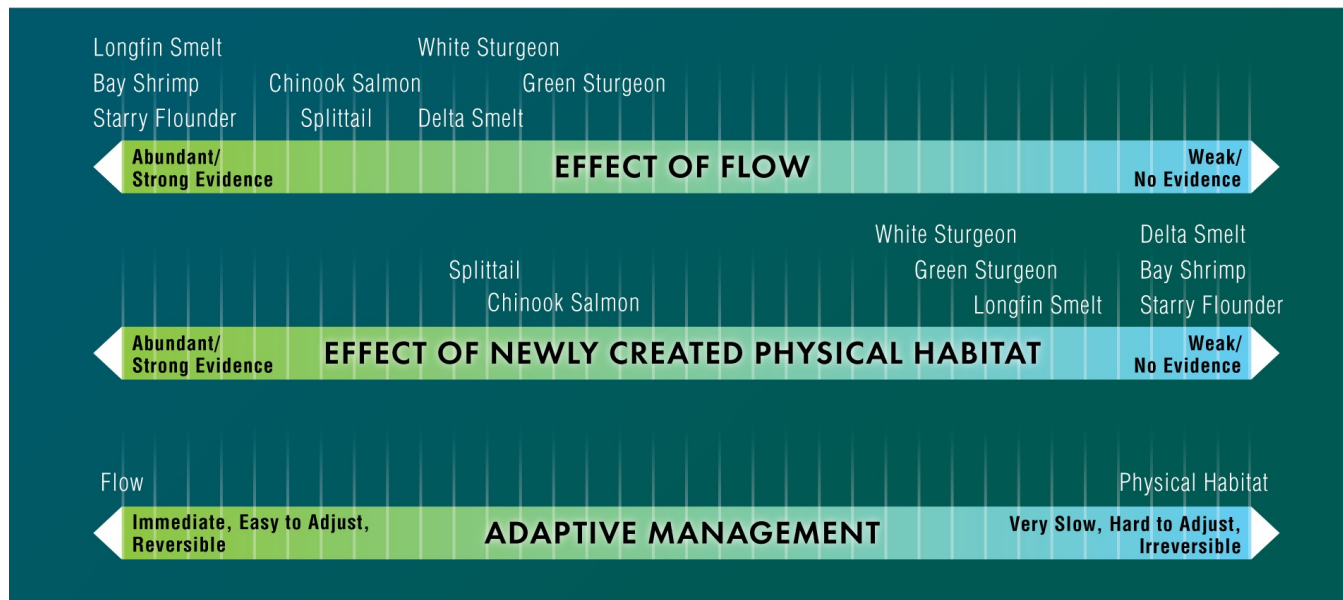
Voluntary Agreements

- Alternative approach to *implementing* an update to the WQCP
- Must meet all the legal requirements of a WQCP → “reasonably protect” beneficial uses
- Negotiations began in 2012/2013.

2025 proposal

- Based on a 2022 agreement negotiated without input from Tribes, Delta communities, fishing interests, or environmental NGOs
- Announced flow “improvements” are relative to requirements of the 2024 biological opinion, which reduced protection and increased water diversions compared to the 2019 biological opinion
- Rely on the bad assumption that restoring shallow water environments (floodplains, marshes, etc) reduces the need for increased river flow
 - Evidence does not support this substitution

No Scientific Evidence that Restoring Shallow Water Environments Can Reduce the Need for Adequate River Flows



Habitat Value

- Uncertain for most fishes
- Long delayed
- Expensive
- Irreversible

Also, >30,000 ac of habitat is already scheduled as mitigation + EcoRestore

“Flow modification is one of the immediate actions available ... Flow and physical habitat interact in many ways, but they are not interchangeable.” State Water Board 2010

“... without additional flow, other non-flow actions will not compensate for the inadequacy of the [State Water Board’s] Preferred Alternative.” CDFW 2013

Tribal Beneficial Uses

- 2025 proposal designates Tribal Tradition & Culture (CUL) beneficial use
 - “Uses of water that support the cultural, spiritual, ceremonial, or traditional rights or lifeways of California Native American Tribes, including but not limited to, navigation, ceremonies, or fishing, gathering, or consumption of natural aquatic resources, including fish, shellfish, vegetation, and materials.”
- Leaves Tribal Subsistence Fishing (T-SUB) and Subsistence Fishing (SUB) to the Regional Boards



Spring-run Chinook Salmon by Fiorella Ikeue in collaboration with SF Baykeeper

Tribal Tradition and Culture Beneficial Use

- For this update, Water Board constrains CUL to no more than protection than is provided by other beneficial uses

“The reasonable protection of CUL as it relates to the tribes’ cultural and spiritual connection to salmon overlaps with the reasonable protection of the aquatic life beneficial uses identified in the Bay-Delta Plan ..., including EST, COLD, WARM, MIGR, SPWN, WILD, and RARE (also referred to as fish and wildlife beneficial uses), forming the basis for implementation actions related to flow, water project operations, and physical habitat restoration” December 2025 draft at 13-231

- Water Board has already defined “reasonable protection” of fish and wildlife to be merely “viability” → this would not account for fishing
- Does not account for non-fishing cultural uses, including ceremony, plants, etc.
 - Those elements of CUL are left to future plans

Summary

San Francisco Bay Estuary

- Source of numerous public benefits
- Rapid, widespread decline, driven by unsustainable water diversions

Bay-Delta Water Quality Control Plan

- Required by law
- Updates represent a once-in-a-generation opportunity to protect the Bay estuary through ecosystem management
 - Should protect Tribal uses

Proposed Update

- Not enough water or habitat to reasonably protect beneficial uses
- Not science-based – Illegal baseline, no measurable goals for outcomes
- Not durable or “fast” – 14 years negotiating a plan with an 8-year term;
- Not inclusive or widely accepted – still subject to regulatory and litigation delays
- Identifies 1 Tribal Use (CUL), but puts its potential effect on flow requirements on hold
 - Leaves most of the real work to the Regional Boards

Thank you!

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History of Tribal Beneficial Uses: Strategies for Healthier Water and Current Status of Designations

Salmonid Restoration Conference: Bridging the Gaps in Restoration
April 29, 2026

Porter Cologne & Beneficial Uses

California Water Code, Division 74 (1969)

- Predates the federal Clean Water Act - amended several times to align with federal requirements and address emerging water quality issues
- Goal: Protect CA surface and groundwater resources and maintain beneficial uses that occurred any time **since 1968**.
- Applies to surface water, groundwater, wetlands and both point and nonpoint sources of pollution.
- Establishes a framework managing water quality:
 - State Water Resources Control Board and 9 Regional Water Quality Control Boards, the primary agencies responsible for administering and enforcing water quality regulations
 - Each region has a water quality control plan (basin plan): regulatory document to preserve and enhance water quality. Designates how water bodies are used and sets enforceable standards to protect them.
 - Basin Plans identify specific beneficial uses of water in their region for past, present and future, with numerical or narrative objectives with clear steps being taken or will be taken to keep surface and groundwater clean and safe to use.
 - Anti-degradation Policy applies even if water body is not listed for use protections.

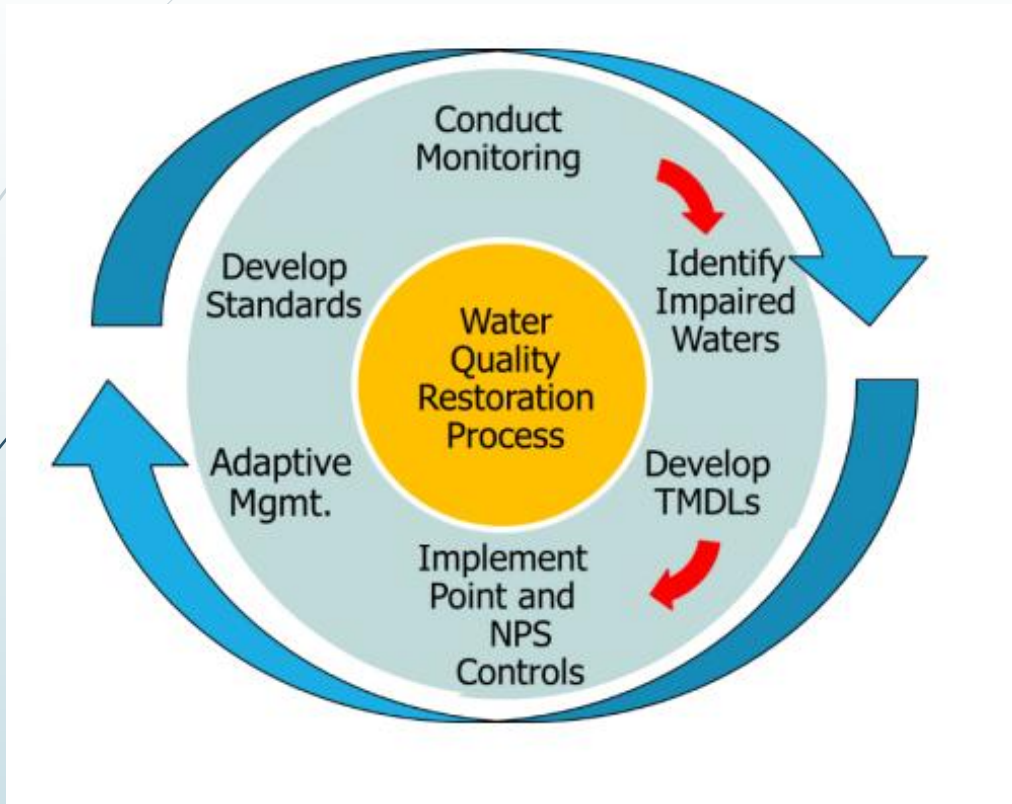
Water Boards Permitting and Regulation

- **Provides permits for the purpose of waste disposal or assimilation** – at the discretion of the Regional Boards to authorize when the discharge to take place, for how long, and how much waste can be put into the water

Waste disposal or assimilation at the discretion of the Regional Board to authorize when is the discharge to take place, for how long, and how much waste can be discharged

- **Regulating the discharge and accumulation of waste** (including pollutants, contaminants, and nuisance substances) into state waters through waste discharge requirements (permits) to regulate the discharge, waste discharge requirements (permits), total maximum daily loads (TMDLs), and enforcement actions to violators.
- Certain activities and substances are prohibited due to potential to harm water quality and the environment. Exs: Discharge of pollutants (point and nonpoint sources), Disposal of waste that causes or threatens pollution, unauthorized alteration of streambed Standards implemented through Waste discharge requirements (WDRs), National Pollutant Discharge Elimination System (NPDES) permits, and Basin plans.
- Regulated entities required to conduct self-monitoring and analysis of discharges and receiving water, reporting and compliance certifications, and record keeping

Clean Water Act



Develop water quality standards to protect the beneficial use. Once standards are developed, all permits to discharge pollutants must also meet those standards.

Monitor to confirm if use is being protected.

Conduct 303 b evaluation to show if water quality is meeting standards. If not, identify what is causing impairment and develop TMDL for clean up.

Beneficial Uses and Water Quality Standards

- **Beneficial Uses** - (known federally as Designated Uses) is use of the waters of California, to protect from water degradation and impairment using Water Quality Objectives.
- **Water Quality Objectives** defines numeric or narrative criteria (range of water quality), that is protective of the use. In California, up to 25 water-quality beneficial use categories for water identified for mostly human and instream uses. The Clean Water Act requires that all waters of the US be fishable and swimmable.
- **Impairments** - With data in multiple places over time showing that a certain measured parameter (like DO) for a specific use (like recreation or a cultural use) consistently not meets the Water Quality Objective, then the use considered impaired. Knowing uses for your water bodies, and knowing the standards associated with those uses (e.g., what pH value does this refer to?) will help use the CWA in your water monitoring program to benefit your tribe.
- **Data Submittal** Every few years Regional Water Boards (for example, Lake County lies in the Central Valley region) calls out for water quality data *from all monitoring entities* for all water bodies in the Region. That data used to check water quality measurements against existing standards (Water Quality Objectives).

Sackett v. EPA (2023)

- U.S. Supreme Court's decision significantly narrowed scope of regulatory authority under the federal Clean Water Act ("CWA").
- Redefined “waters of the United States” to include only relatively permanent, standing, or continuously flowing water bodies forming geological features ordinarily described as streams, oceans, rivers, and lakes. Curtailed federal protection for many of California's streams and wetlands.

CA State Response: Right of Clean Water Act, CA SB 601 - In CA State Legislature

- Adds Term “Nexus Waters” by amendment as new category to Porter Cologne Act (Chapter 5.5 of Title 7 of the Water Code) in “Compliance with Provisions of the Federal Water Pollution Control Act of 1972.” to preserve pre-Sackett water quality protections for streams and wetlands, including “adjacent” wetlands.

Proposed Provisions of Right of Clean Water Act, CA SB 601

- Applies federal discharge requirements under federal CWA, to “nexus waters” prevent entities from seeking less stringent state permits (such as Waste Discharge Requirement (WDR) and National Pollutant Discharge Elimination System (NPDES)).
- State and Regional Water Boards to include “nexus waters” in all processes pursuant to federal CWA (incl CA Integrated Report and establishment of TMDLs.)
- Continuity of Standards: Provides any water quality standard applicable to “nexus waters” submitted to, approved by, or awaiting approval of U.S. EPA or State Water Board prior 1/25/2025 remain in effect unless more stringent standard adopted.
- Enhanced Compliance and Enforcement: Regulated industries required to demonstrate enrollment with the NPDES or the WDR permit programs when applying to city or county for initial business license, equivalent instrument, or permit.
- Significantly expands the enforcement authority for the State Water Boards and Regional Water Boards and allows for citizen suit in superior court for unlawful discharges into "nexus waters." Violations would be subject to civil liability.

Legacy of Success: TBU in the North Coast

- Early 2000 Tribes in North Coast worked with Regional Board to define and adopt Beneficial Uses into NC Basin Plan that protects Native American culture and subsistence fishing. (Karuk Tribe, Yurok Tribe, Hoopa Valley Tribe, and Wiyot Tolowa Dee-ni' Nation).
- In 2003, State Water Board approved North Coast Regional Water Board's definitions - predate ISWBE TBU statewide definitions adopted by State Water Board in 2017, so statewide definitions would not apply unless North Coast adds new definitions into its basin plan.
- NC Water Board designated CUL use in 28 waterbodies. The 2010 Klamath River TMDL Action Plan relied on North Coast CUL definitions and designation for protection of water quality – staff cited the CUL and FISH as basis to establish water quality targets Tribal ceremonies, Tribal fisheries, aquatic plants and other ancestral practices.
- Designations for TBUs also made in broad categories outside named water bodies: minor coastal streams, bays, estuaries, freshwater and saline wetlands, and groundwater.

Central Valley TBU History

- In 2009, Tribes asked the CV Water Board to include the NC Region1 FISH and CUL definitions in the Mercury TMDL. In 2011 the CV WB rejected the request stating that the NC definitions had no numerical values attached and they would not be applying them.
- In 2013, Tribes and Tribal organization sent a letter to the State Water Board requesting the definitions be adopted. The SWRB Chair, Felicia Marcus, agreed that such definitions for the first uses in the state were needed and that Tribes had differing exposure scenarios than COMM and REC1.

North Coast Region 1 definition adopted by NCRWQCB in 2003:

- **Native American Culture (CUL)** - Uses of water that support the cultural and/or traditional rights of indigenous people such as subsistence fishing and shellfish gathering, basket weaving and jewelry material collection, navigation to traditional ceremonial locations and ceremonial uses.
- **Subsistence Fishing (FISH)** - Uses of water that support subsistence fishing.

ISWEBE statewide definitions adopted by State Water Board in 2017:

- **Tribal Culture Use (CUL)** - Uses of water that support the cultural uses and traditional rights of California Indian Tribes. This includes but is not limited to fishing, gathering and safe consumption of traditional foods and materials, in traditional quantities as defined by California Indian Tribes, for subsistence, cultural, ceremonial, and navigation activities associated with such uses.
- **Subsistence Fishing (FISH)** – Gathering and distribution of natural aquatic resources, including fish and shellfish, to meet the traditional foods needs of individuals, households, and communities for personal, family and community consumption and/or for traditional/ceremonial purposes.



The State Water Board has developed and adopted several statewide water quality control plans, including:

- Bay-Delta Plan: Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary
- California Ocean Plan
- California Thermal Plan: Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California
- Enclosed Bays and Estuaries Plan: Water Quality Control Plan for Enclosed Bays and Estuaries: Part 1 Sediment Quality Objectives
- Inland Surface Waters, Enclosed Bays, and Estuaries Plan (ISWEBE)
Note that the State Water Board has adopted several stand-alone components of the ISWEBE Plan that are currently in effect (including Part 2, which includes the Tribal Beneficial Uses), but has not yet adopted a final comprehensive ISWEBE Plan.

Exposure, Duration and Frequency

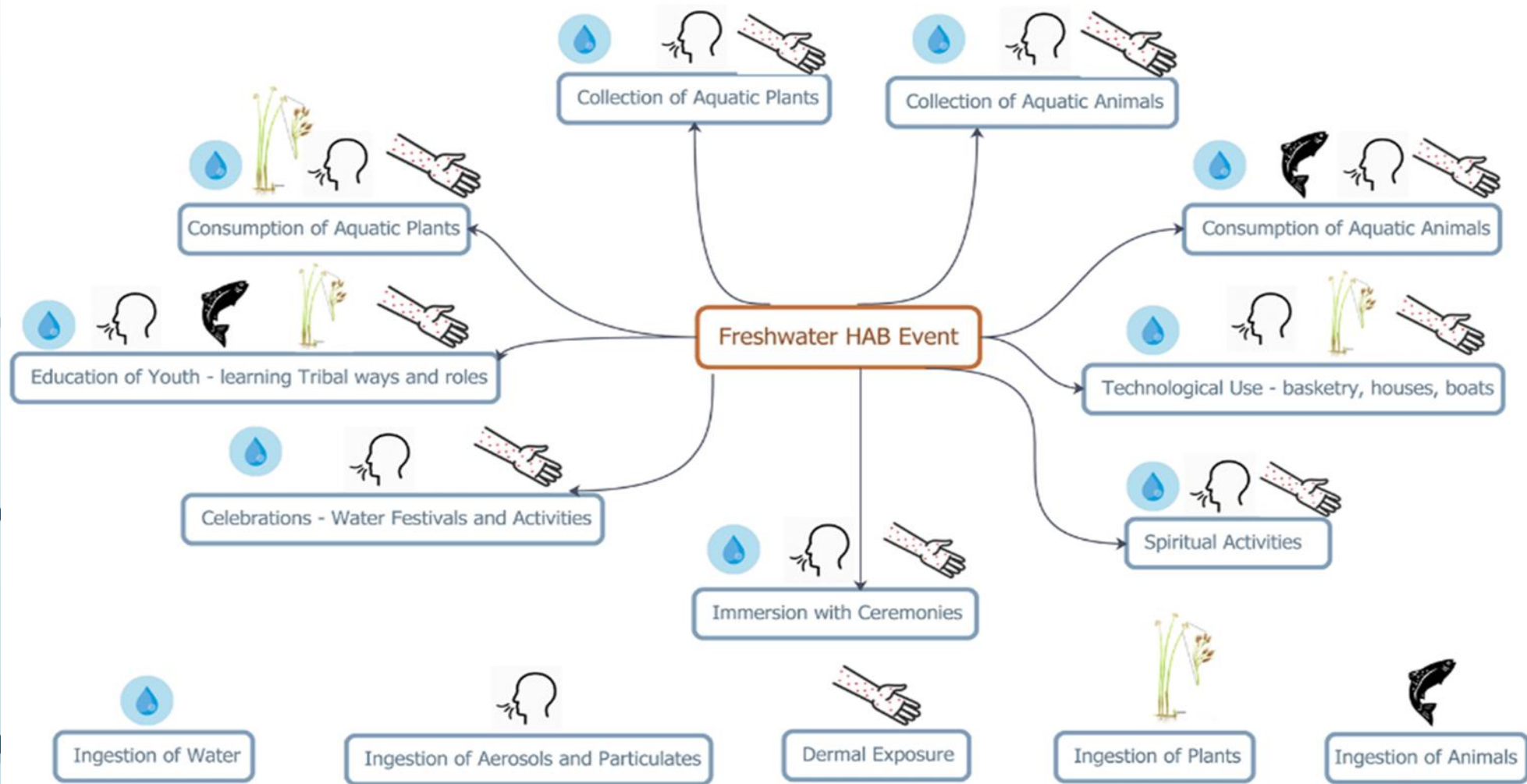
Commercial and Sportsfish(COMM) v. Tribal Subsistence (TSUB)

- Place-based: Specific waterbodies. TSUB do not supplement with store-bought or other nontraditional species.
- Frequent, or high-volume or differing frequency and timing of consumption of fish, shellfish, or other natural aquatic species or resources
- Preparation, cooking and distribution that differ from those consumed under the COMM use (e.g. consuming more parts of a fish than a skin-off fillet (e.g. skin, fat, organs, cooking juices), not cooking, or smoking, canning utilizing the fatty area between the skin and the fillet etc.),
- Wider variety of species than those covered under an existing designations for commercial or recreational fishing beneficial uses, including the consumption of species that are generally not consumed under the COMM use such as insects.
- Year-round or seasonal subsistence practices
- Higher cumulative exposure to contaminants externally through contact, or internally through ingestion or both.
- Greater health risks for all consumers and especially sensitive populations
- A need for stronger water quality protections to safeguard human health

Swimming and Wadable (REC 1) v. Tribal Cultural Uses (CUL)

Tribal Cultural Use Conceptual Freshwater Harmful Algal Bloom (FHAB) Impact Pathway

Native peoples were given their land by Creator and honor Creator and their Ancestors by maintaining traditions and cultural landscapes. This is the connection between the land and the people. Uses can be repetitive, gender assigned and long term. Exposures can occur second hand through the use and trade of plants and animals that have been in contact with HABs.



Source:

Big Valley
Rancheria
Environmental
Protection
Department

Tribal and Subsistence Fishing Beneficial Uses and Mercury Provisions: Final Part 2 of the WQCP for Inland Surface Waters, Enclosed Bays, and Estuaries of California – (Approved 2017)

“The State Water Board approved one new narrative [CUL] and four new numeric mercury objectives [including TSUB] to apply to those inland surface waters, enclosed bays, and estuaries of the state that have any of the following beneficial use definitions: COMM, CUL, T-SUB, WILD, MAR, RARE, WARM, COLD, EST, or SAL, with the exception of waterbodies or waterbody segments with site-specific mercury objectives.”

The Tribal Subsistence Fishing Water Quality Objective is: The average methylmercury concentrations shall not exceed 0.04 mg/kg fish tissue within a CALENDAR YEAR. The objective applies to the WET WEIGHT concentration in skinless fillet from a mixture of 70 percent TROPHIC LEVEL 3 fish and 30 percent TROPHIC LEVEL 4 fish*

Federal CWA Categories	Cal. Water C. Categories	CA Basin Plan Categories
Propagation of fish, shellfish & wildlife	Preservation and enhancement of fish, wildlife, and other aquatic resources or preserves	WARM, LWRM, COLD, SAL, EST, MAR, WILD, BIOL, ASBS, RARE, MIGR, SPWN
Recreation in & on the water	Recreation; aesthetic enjoyment	REC-1, Limited REC-1, REC-2, COMM, SHELL
Public water supplies	Domestic and municipal supply	MUN*
Agricultural use	Agricultural supply	AGR*
Industrial use	Industrial supply	IND*, PRO*
Navigation	Navigation	NAV
Other purposes	Power generation; other beneficial uses	GWR, FRSH, POW, AQUA, WET, FLD, WQE, CUL, FISH

The listed Beneficial Uses of Clear Lake are: Recreation (REC-1, REC-2), Municipal (MUN), Agriculture, Freshwater Habitat (WARM, COLD[potential]), Spawning (SPWN), WILD, Commercial (COMM), [[TRIBAL USES SUBMITTED FOR CULTURAL AND TRIBAL SUBSISTENCE CONSUMPTION: CUL, T-SUB]]

Parameter (Water Quality Objective)	Criteria In BVR Surface Water QAPP and/or Sac River Basin Plan	BENEFICIAL USE (yellow highlight is listed in the basin plan as being applicable to the parameter, blue highlight is our potential additional uses we can add)
Total Kjeldhal Nitrogen	0.198 ug/L (in QAPP) "water shall not contain <u>biostimulatory</u> substances which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses"	REC-1, CUL, MUN(?)
TP	21.88 ug/L(?) (in QAPP) "water shall not contain <u>biostimulatory</u> substances which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses"	REC-1, CUL, MUN(?)
E coli	No less than 5 samples for any 30-day sample period shall exceed a geometric mean of 200/100 ml, nor shall more than 10% of the total number samples taken in any 30-day period exceed 400/100 ml	REC-1, CUL
DO	Water designated WARM = >5 mg/l Water designated COLD = >7 mg/l; Waters designated SPWN = 7 mg/l	SPWN, COMM, WARM(?), T-SUB
DO %	Monthly median of the mean daily shall be > 85% saturation in the main water mass, and the 95 percentile concentration shall not fall below 75% saturation	SPWN, COMM, WARM(?), T-SUB
pH	6.5-8.5 range	REC-1, REC-2, COMM, WARM, MUN, CUL, T-SUB
Water temp	Waters designated COLD or WARM shall not be increased more than 5°F above natural receiving water temp	WARM, SPWN, COMM, REC-1, CUL, T-SUB
Turbidity	Where natural turbidity is between 5 and 50 NTU's, NTU's cannot exceed 20%	COMM, CUL(?), T-SUB(?)
Pesticides	-Waters designated MUN shall not contain concentrations of pesticides in excess of the Maximum Contaminant Levels (set forth in California Code of Regulations, Title 22, Division 4, Chapter 15.)	MUN, WARM, SPWN, COMM, REC-1, CUL, T-SUB

From Big Valley EPA, 2017

Regional Updates: North Coast Basin Plan

[2025 Basin Plan - pending OAL approval.](#)

- Amendments were non-regulatory (improved the organization of the Basin Plan)
- No due dates for the North Coast TBU project yet. Welcoming formal consultation on project and staff-level meetings to share information and gather initial input.
- Anticipate formally inviting designation requests in 2027.
- Another round of formal consultation invitations re scoping when we have deadlines for CEQA scoping and designation requests.
- Expecting to engage Tribes as early reviewers and advisors in a group to meet 3-4 times over the next year providing critical input to finalize the designation template and other project materials. Requests for Tribal Advisors is pending distribution.
- Part of the project related to timing the designation request window with grant funding. Will include direct stipend payments to support travel and funding for technical support by contractor to support Tribes with aspects of the TBU designation project.
- Intend to Designate CUL and TSUB at same time

Central Valley Basin Plan: [2019 Basin Plan](#).

- A 2022 Basin Plan Amendment was developed by CV Board staff to add the TBU definitions to the joint Sacramento River and San Joaquin River Basin Plan. It was approved by the Central Valley Water Board, the State Water Resources Control Board and the Office of Administrative Law in 2022.
- The US EPA acknowledged the TBU Definitions Basin Plan Amendment as it incorporates verbatim provisions previously adopted State Water Resources Control Boards and approved by the USEPA in 2017. Determined that the Amendment is not subject to USEPA action; however, USEPA acknowledges the changes to the Basin Plans.
 - [The Workplan following Triennial Review](#)
 - [List of specific water bodies in consideration](#)
- Comments needed by regional Tribes and are being developed collectively under development Strategic Planning Caucus
- Designation of CUL (without Tsub) is recommended by Regional Board Staff



What Regional Boards will Require for Designation?

Statewide Guidance Document to Protect Waters for TBUS – Est. Summer 2026

North Coast Regional Board Example:

- In meetings held with Tribes staff understanding of what is needed for a new designation request (subject to change with State Water Board guidance):
- Identify waterbody segment (See Table 2-1 of Basin Plan)
- Identify cultural activity or activities for that waterbody segment (Not sensitive cultural information, but enough to understand the exposure route(s) of the activity to determine water quality needed to support the activity)
- Affirmation by authorized Tribal representative that the cultural activities selected have occurred since 1968. (If the activity hasn't occurred since 1968 but is anticipated to occur in the future there will be some additional work to propose a "potential" designation for CUL, which is protected the same as an "existing" designation)

Designating Tribal Beneficial Uses

- SWRCB needs to know how and where will Beneficial Uses be applied
- Regional Water Boards will need to designate these beneficial uses to waters, before uses apply
- Water Quality Objectives (WQO) “based on sound science and empirical data,” may need to be developed to protect Beneficial Uses

Water Board Project Steps:

- **Ongoing Step:** Engage with California Tribes and the public
- **Ongoing Step:** Prioritize Tribal Beneficial Uses in triennial reviews
- **Step 1:** Add Tribal Beneficial Use definitions to basin plans *
- **Step 2:** Gather information for designations
- **Step 3:** Designate waterbodies or parts of a waterbody with Tribal Beneficial Use(s)*
- **Step 4:** Amend or establish water quality objectives and implementation programs
- **Step 5:** Follow the implementation program

**Steps 1 and 3 can be done at the same time*

Tribal Beneficial Uses Designation, WQO Development and Implementation

Task 1: Build project partners to effectively engage in the TBU Process, data gathering and development of strategies

- Develop regional Tribal Advisory Committee, share the load of research, compare for consistency and highest exposure risks (goal set standards that are most protective), discuss process alignment, technical assistance and monitoring
- Statewide Tribal Beneficial Uses Strategic Planning Caucus aligns efforts between regions and learn of pitfalls to avoid and best practices to apply

Task 2: Identify Tribe(s) water(s) of Use and Request Designation for TSUB AND CUL

- Review of Traditional Territories: List all rivers, tributaries, estuaries and ocean locations utilized by your people historically

Task 3: Data Gathering: Identify Uses and Related Exposures

- Develop interview questions, survey templates and consistency procedures.
- Include maps where community can identify specific use areas, areas of concern.
- Gather data: Regional Basin Plan what uses listed for your watersheds. Historical and contemporary uses. Gather WQ data, conduct Fish consumption & watershed use surveys evaluate assumptions. and hold focus groups with your community to interpret data with care not to lock in repressed rates.

Task 4: Data Review and Gap Analysis: Research TBU related pollutants of concerns and identify gaps in data

- Review water quality data sources and assumptions.
- Analyze results and provided summaries of identified waterways, use types, seasonality if applicable, and other non-confidential pertinent information such as known pollutants of concern identified in information gathering phase.
- Hold focus groups with your community to interpret data and plan for future uses. Consider a seasonality of use chart

Task 5: Process Guidance Participation -Interregional and InterTribal Consistency



DATA COLLECTION & REPORTING



Table H-1. Selected Fish Consumption Rates

Type/Source	Fish consumption rate in grams per day (g/day)	Equivalent 8 oz. meals/week of locally caught fish	Resulting Water Quality Objective (mg MeHg/kg fish)
General U.S. population (U.S. EPA 2000)	17.5	0.5**	0.3*
San Francisco Bay anglers (San Francisco Estuary Institute 2001),	32*	1**	0.2*
1991-92 Santa Monica Bay (Allen et al. 1996)	107	3**	0.05*
Subsistence, U.S. population (U.S. EPA 2000)	142*	4.4	0.05
California Tribes - contemporary (Shilling et al. 2014)	142*	4.4**	0.04*
California Tribes: two generation ago (Shilling et al. 2014)	223	7	0.03
Oregon, including Columbia River Tribes (Oregon Department of Environmental Quality 2011)	175	5-6	0.04
Proposed by U.S. EPA for Washington State (80 FR 55063, September 14, 2015)	175	5-6**	0.03*
Proposed by U.S. EPA for Maine (81 FR 23239, April 20, 2016)	286	9	0.02***

T-SUB

Tribe Name (n)	Salmon (95 th % g/day)	Caught fish (95 th % g/day)	Total fish (95 th % g/day)	% Caught = Salmon
Me-Wuk (32)	22.4	57.2	99.7	39
Maidu (26)	69.1	133.6	183	52
Pit River (17)	196.2	240.4	277.3	82
Paiute (52)	28.3	59.5	81.5	48
Northern Paiute (11)	37.6	63.1	99.9	60
Timbisha Shoshone (14)	39.8	104	257.8	38
Mono (6)	29.8	42.2	52.1	70
Chemehuevi (43)	0	110.3	178.6	0
Pomo (183)	28.3	59.2	101.8	48
Pomo-Wailaki (12)	28.9	34.8	59.2	83
Wailaki (16)	19.8	81.5	85.8	24
Round Valley Tribes (35)	57.8	70.3	81.6	74
Wiyot (30)	132.5	139.1	144.2	95
Yurok (15)	115.1	170.2	170.2	68
Chumash (12)	8.2	29.8	55.4	28
Total	72.6	141.8	181.9	51

From 2014
California
Tribe Fish
Consumption
Study
(Fraser Shilling,
UC Davis)

https://www.waterboards.ca.gov/water_issues/programs/mercury/docs/tribes_%20fish_use.pdf

Historical and Ancestral Consumption (Fishing, Gathering, and Eating)

2. Were fish or shellfish an important part of your family's diet? (Circle one) Yes No Not Sure

3. What major creeks, rivers, lakes, or other water-bodies were traditionally fished by your family and/or other Tribal members?

4. What kinds of fish or shellfish did your family or Tribal members traditionally eat? Circle all that apply.

Catfish	Lake Trout	Rainbow/Steelhead	Fall Salmon	Freshwater Mussels/Clams
Eel/Lamprey	Abalone	Crayfish	Sturgeon	Saltwater Mussels/Clams
Silverside	Black or Largemouth Bass	Threadfin Shad	Blackfish	Bullhead
Sucker	Brown Trout	Spring Salmon	Perch	Scallops
Carp	Crappie	Hitch	Mosquito Fish	Sunfish
Rockfish (Brown/Yellow Eye)	Lingcod	Cabezon (Sculpin)	Surfperch (Surf fish, including Walleye)	Crab
Shark	Halibut	Sea Bass	Surf Smelt	Jack Smelt
Oysters	Shrimp	Others (Please list):		

For reference, the following are serving sizes per state agencies:



The recommended serving of cooked fish is about the size and thickness of your hand

5. How much fish or shellfish did your family, ancestors or other Tribal members eat traditionally? Circle one.

Less than 1 serving per day	1 serving per day	2-3 servings per week	1 serving per week	1 serving per month	Less than 1 serving per month	Other frequency:
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[Tribe] USES OF [Name] RIVER & TRIBUTARIES

T-CUL

			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Rivers/Tributaries	Ceremony Name	Type	Description: Travel and river access needed for ceremonies throughout the year											Exposure Pathway	
River & Trail Access	Funerals	Walking													Wading or water contact
	[Proprietary]	Walking													Wading or water contact
	Personal Rituals	Walking													Wading or water contact
Rivers/Tributaries	Ceremony Name	Type	Description: Transportation to cross the river or up and down river for ceremonies or religious activities											Exposure Pathway	
Boating	Funerals	Transportation													Wading or water contact
	[Proprietary]	Dance Transportation													Wading or water contact
	Individual	Transportation													Wading or water contact
Rivers/Tributaries	Ceremony Name	Type	Description: Traditional foods used in all ceremonies, salmon used in all [Proprietary] ceremonies											Exposure Pathway	
Fish+A69:P90	Inam-Clear Creek	Resident													Wading or water contact
	Spring-1st Salmon	Anadromous													Wading or water contact
	Lamprey eels	Anadromous													Wading or water contact
	Other	Anadromous and resident													Wading or water contact
Rivers/Tributaries	Ceremony Name	Type	Description: Traditional foods of fish used in all ceremonies fresh or dried if available.											Exposure Pathway	
Fishing	Salmon used in all World Renewal-Pikiawish ceremonies	Funerals and personal rituals throughout the year													Wading or water contact
	Lamprey eels	Funerals and personal rituals throughout the year													Wading or water contact
	Sturgeon	Funerals and personal rituals throughout the year													Wading or water contact
	Steelhead-summer	Funerals and personal rituals throughout the year													Wading or water contact

Human Fish Consumption Rates – ISWBE

Revised Draft Final Part 2 of Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, & Estuaries of California—Tribal & Subsistence Fishing Beneficial Uses & Mercury Provisions

4.9 Human Fish Consumption Rates

The amount of fish that people consume is a critical variable in calculating a protective limit of methylmercury. This variable is shown in the equation that U.S. EPA used for calculating the fish tissue criterion (U.S. EPA 2001), which was also used to calculate the Mercury Water Quality Objectives to protect human health, below:

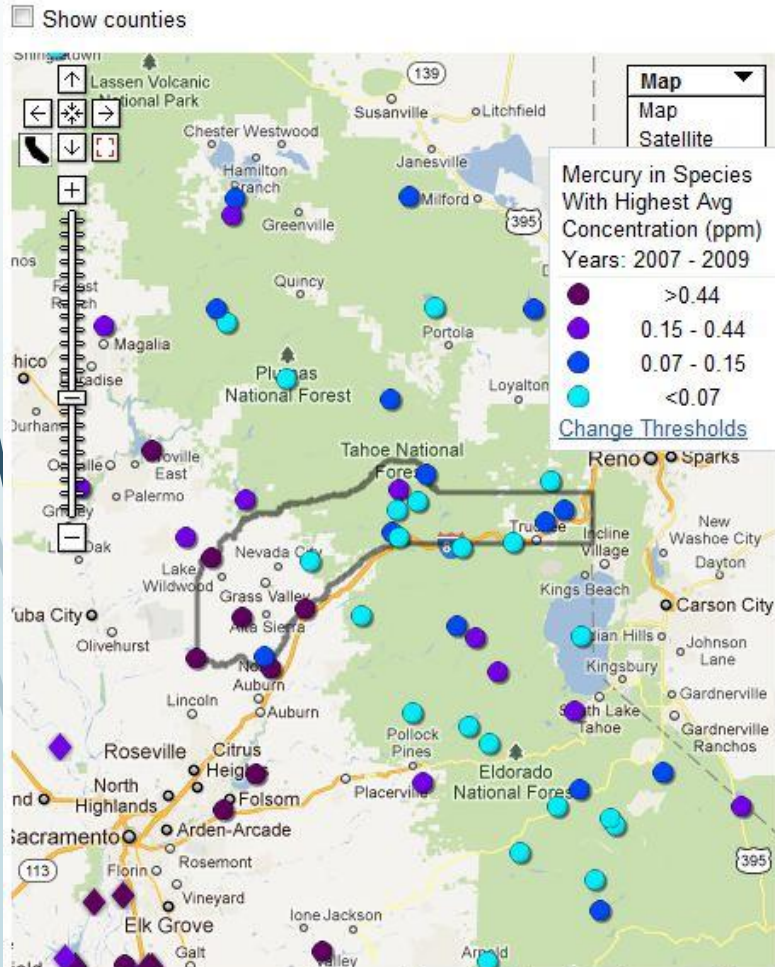
$$FTC = \frac{BW * (RfD - RSC)}{FI}$$

where,

- FTC = a fish tissue concentration in milligrams (mg) methylmercury (MeHg) per kilogram (kg) fish. The FTC will be used as the methylmercury water quality objective.
- BW = human body weight, default value of 70 kg
- RfD = reference dose of 0.0001 mg MeHg/kg body weight-day. The value was derived from a study of mothers and their children in the Faroe Islands, where fish and whale is a large part of the diet, and blood mercury concentrations were correlated to cognitive effects in the children.
- RSC = relative source contribution, estimated at 2.7×10^{-5} mg MeHg/kg body weight-day. This value is subtracted from the reference dose to account for other sources (e.g., marine fish).
- FI = human fish intake (consumption rate, kg fish/day).

Spatial Tools for Fish Tissue Monitoring Results & Community Advice

This interactive map allows you to explore fish contaminant lakes and reservoirs in 2007 and 2008, from the coast in 2



Select Species:

Species With Highest Avg Concentration

Select Contaminant:

Mercury

Select Start Date: 2007 Select End Date: 2009

Go Reset Download Map Data

More Information

- Monitoring programs and reports
- Access Complete Datasets from CEDEN
- Assessment thresholds

This map shows data generated by:



Mercury in Species With Highest Avg Concentration (ppm) Years: 2007 - 2009

- >0.44
- 0.15 - 0.44
- 0.07 - 0.15
- <0.07

Fish Contaminant Goals & Advisory Tissue Levels

- No Consumption
- One 8-oz. serving/week
- Two 8-oz. serving/week
- Three 8-oz. serving / week

<http://eis.sfei.org> OEHA 2008

Harry L Englebright Lake [View Data Rating Guidelines for this water body.](#)

Data Trends Nearby Locations

How does my location compare to nearby water bodies?

Change Species Parameter
 Highest Lowest

Nearby Water Body	Distance (mi)	Species With Highest Average Concentration	MERCURY (ppm)	Sample Year	Prep Code	Sample Ty
Collins Lake	6	Largemouth Bass	0.38	2008	Skin off	Average of 350 mm Sta
Bullards Bar Reservoir	12	Largemouth Bass	0.4	2008	Skin off	Average of 350 mm Sta
Zeyak/Swan Lake	12	Largemouth Bass	0.98	2007	Skin off	Average of 350 mm Sta
Scotts Flat Reservoir	17	Rainbow Trout	0.03	2008	Skin off	Average of Location Cor
Camp Far West Reservoir	17	Spotted Bass	0.65	2007	Skin off	Average of Individuals
Rollins Reservoir	19	Smallmouth Bass	0.85	2008	Skin off	Average of Individuals
Lake of the Pines	19	Largemouth Bass	0.07	2007	Skin off	Average of 350 mm Sta
Lake Oroville	21	Smallmouth Bass	0.44	2007	Skin off	Average of Individuals
Lake Combie	22	Largemouth Bass	0.78	2007	Skin off	Average of 350 mm Sta
Thermalito Afterbay	26	Common Carp	0.24	2007	Skin off	Average of Location Cor

A result of ND means the concentration was below detection limits.

Identifying Exposure Scenarios

TRIBAL SCENARIO – WILD PLANT INGESTION

- Plants sampled and consumed by the Tribe
 - Acorns
 - Tule – roots and stalks
 - Cattail – roots and stalks
- Plant sample locations recommended by the Tribe
- Ingestion Rates (from Harper TM 2018)
 - Acorns - 120 g/day adult, 30 g/day child
 - Tule and Cattail roots - 275 g/day adult, 65 g/day child
 - Tule and Cattail stalks – 333 g/day adult, 85 g/day child
- Tribal Receptor
 - Adult – Exposure 60 days/year for 70 years
 - Child – Exposure 60 days/year for 6 years



Red dot = acorn/soil, Purple dot = tule/sediment

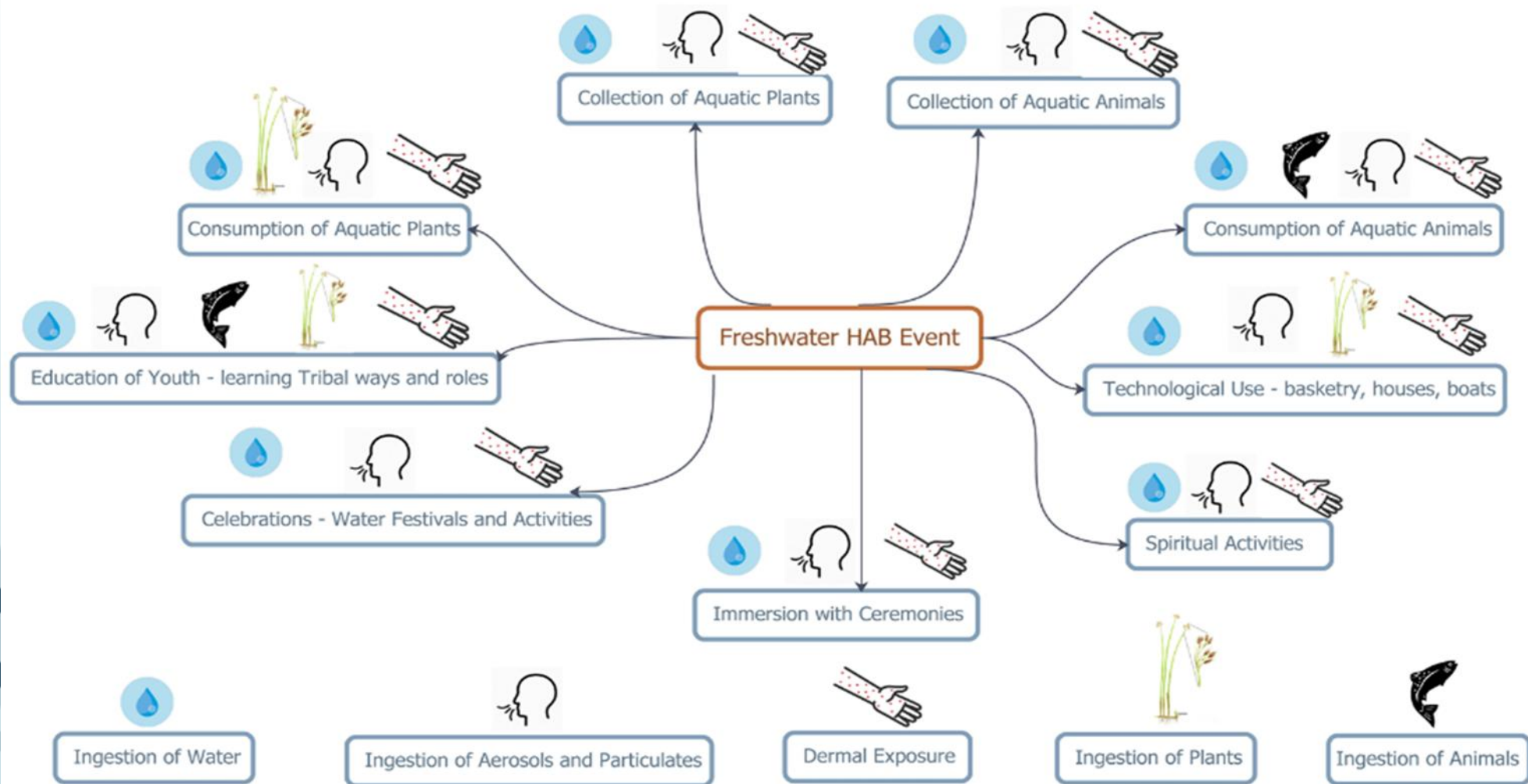
Green dot = cattail/sediment Yellow dot = collocated bird sediment

Orange dot = 2006 tule

From exposure ingestion rates scenario for sulphur bank mine site, US EPA.

Tribal Cultural Use Conceptual Freshwater Harmful Algal Bloom (FHAB) Impact Pathway

Native peoples were given their land by Creator and honor Creator and their Ancestors by maintaining traditions and cultural landscapes. This is the connection between the land and the people. Uses can be repetitive, gender assigned and long term. Exposures can occur second hand through the use and trade of plants and animals that have been in contact with HABs.



Source:

Big Valley
Rancheria
Environmental
Department

Some ways to approach exposure calculations

Tribal Beneficial Use Worksheet

Activity	Timing (Month/Season)	Frequency of Activity	Duration of Activity	Location(s)	Potential Contaminants	Exposure pathways	Age Groups	Additional Concerns



Big Valley Rancheria Traditional Uses Survey 2019

Please return filled forms to kschrade@big-valley.net or to Big Valley EPA.

NAME: (OPTIONAL) _____
 AGE: _____
 GENDER: _____
 HOW LONG HAVE YOU LIVED AT BIG VALLEY: _____

RECREATIONAL SWIMMING:

Do you or any of your family members ever swim in Clear Lake waters or any creeks past or present?
 (location)Where did you/do you swim/go in the water?

In the past:

 Currently:

(duration)How long did you swim for each time?

In the past:

 Currently:

(exposure)Did you swallow water and how much?

In the past:

 Currently:

(frequency)How often did you swim (which months and how many days in those months?)

In the past:

 Currently:

Have you noticed any illnesses after swimming?

In the past:

<https://bit.ly/TBU-BVR2>

Impaired Waters - Clean Water Act 303d list

Water Contact Recreation (REC-1)
Swimmable and wadeable. Include
ingestion as during these activities it is
reasonably possible. Also of note it
includes natural hot springs,

Commercial and sport fishing (COMM)

Additional BUs are:

WARM or COLD, IND, PRO, REC-2,
WILD, and are sometimes
designated as SPAWN, BIO and
RARE. Drinking water is sometimes
MUN.



III. Water Quality Objectives

Bacteria – Total and Fecal Coliform

Definitions

Bacteria are unicellular microorganisms, which exist in soil, water, organic matter and the bodies of plants and animals. Bacteria are vital in recycling nutrients, and are classified as either beneficial or *pathogenic*, which cause infectious diseases.

Total coliform numbers can indicate non-fecal bacteria, so additional testing is often done to confirm the presence and numbers of fecal coliform bacteria. *Fecal coliform* is a form of bacteria, usually *E. coli*, which is an indicator microorganism for pathogens in water and soil.

E. coli = fecal coliform. Important to distinguish which units of measurement you are addressing.

Source

Total coliform is natural to the environment. Fecal coliform originates in human sewage, animals living in wetlands, and agricultural practices, such as allowing domestic animals to graze near water bodies

BU stated in this Objective

REC-1

Narrative Objective

The Basin Plan states no narrative objective for Region 5 or Clear Lake in this category.

Numerical Objective

In waters designated for **REC-1**, the fecal coliform concentration (based on a minimum of not less than five samples for any 30-day period), shall not exceed a geometric mean of 200/100 ml, nor shall more than 10% of the total number of samples taken during any 30-day period exceed 400/100 ml.

This is what you should be monitoring for. Ensure that you follow the monitoring protocol to obtain a sufficient number of samples to qualify for an "Assessment".

Identify existing standards for waterbodies of interest

From Big Valley EPA
"Kickstarting a Tribal Monitoring Program"
workshop, 2024



Thank you!

Sarah Ryan

Big Valley Band of Pomo Indians

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