

**Comments on Policy
for Maintaining Instream Flows in
Northern California Coastal Streams**

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Water Quality and Water Supply


State Water Resources Control Board Water Quality

Division: Regional Boards/Basin Plans

SWRCB Division of Water Rights: Maintain a stable system of water rights in California to best develop, conserve, and utilize in the public interest the water resources of the State while protecting vested rights, water quality, and the environment.

Department of Water Resources (DWR): Used to build dams, runs California Water Project, monitors and regulates groundwater and runs Watermaster Service.





California Water Code

§ 1052, 1055, 1243, and 1375

§ 1052: No dams will be constructed without a permit

§ 1055: Allows Administrative Civil Liability fines (\$500/day).

§ 1243: Sufficient water for remains for “recreation and the preservation and enhancement of fish and wildlife resources”

§ 1375: Must establish surplus water exists before issuing new Appropriative Rights permits

What North Coast Instream Flow Study Proposes

- 1) Restrict new appropriative rights for diversion of surface water to October 1 to March 15,
- 2) Establish minimum bypass flows,
- 3) Set cumulative diversion limits, and
- 4) Discontinue permitting dams on Class I and II streams.



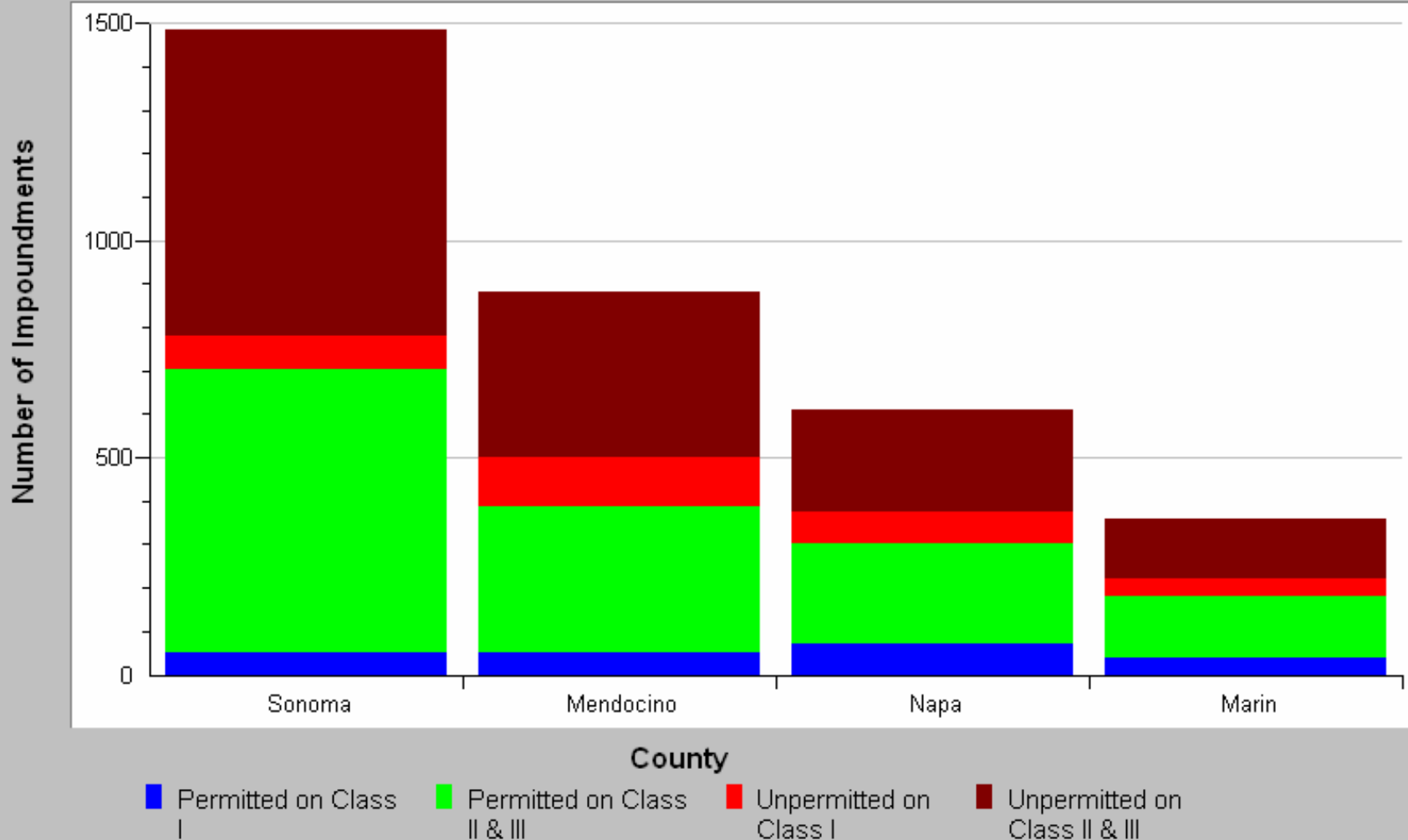
Problems with the Policy

- No action to assess summer and fall flows (when the biggest problem exists)
- No recognition of cumulative effects and changes in water supply
- Applies only to new appropriative water rights diversions but doesn't deal with riparian rights.
- Doesn't deal with ground water
- WRD refuses to enforce water law and to provide a disincentive for unpermitted water use
- Recommends recognizing Watershed Groups that are comprised of diverters and envisions transfer of many SWRCB WRD responsibilities to such local extraction interests!

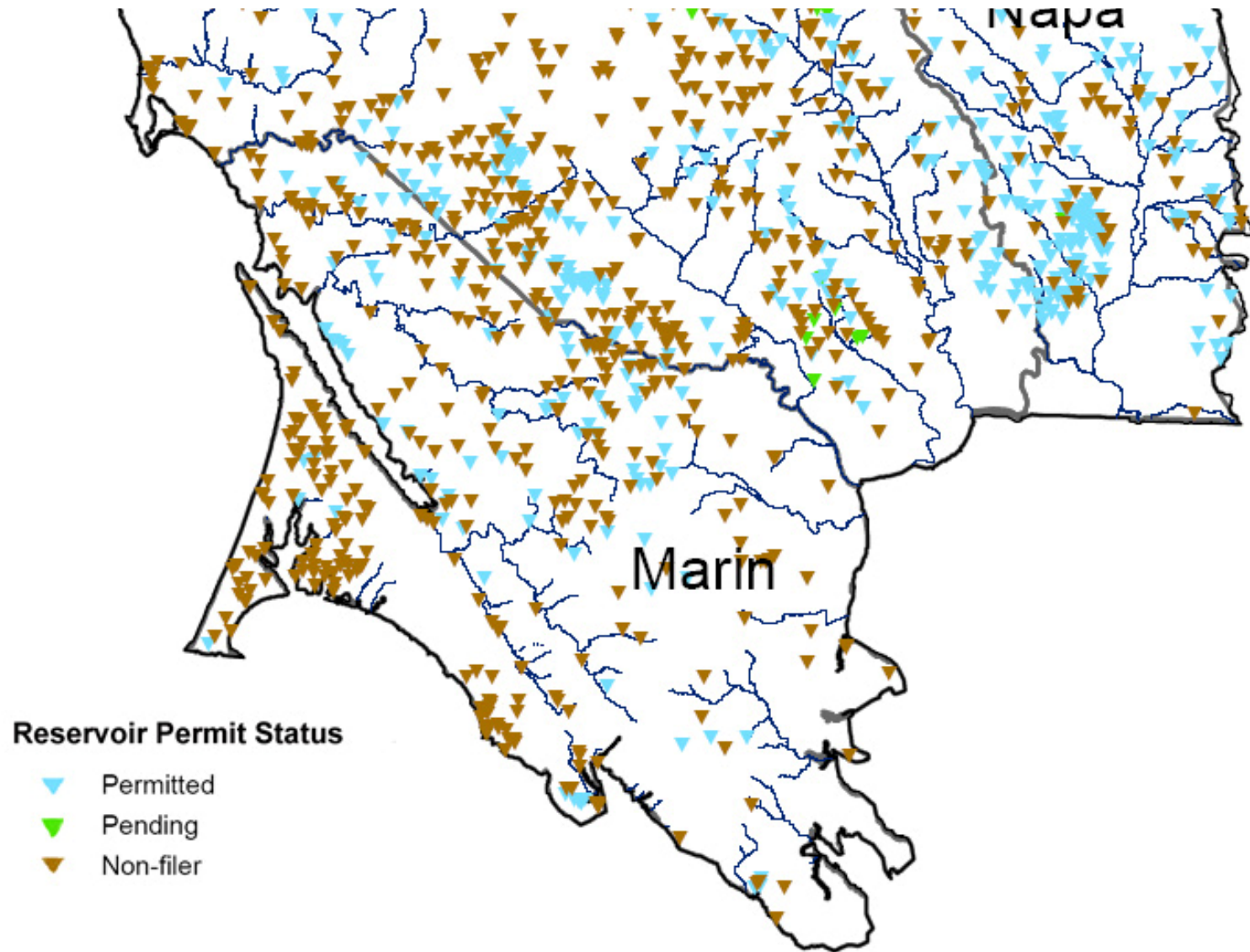


North Coast area defined by the *Policy*. It does not cover the Klamath or Eel River basins that have greater need of water rights reform and greater potential for salmon and steelhead recovery.

Permitted and Unpermitted Impoundments on North Coast Streams



The number of permitted and unpermitted impoundments within the geographic area covered by the Policy. Illegal diversion impoundments outnumber legal ones ! Data from *Policy Appendices*.



Map of permitted and unpermitted impoundments in Marin County within the *Policy* area. Data from *Policy Appendices*.



Navarro River at Hendy Woods State Redwood Park is so flow depleted that only a stagnant pool not suitable for human contact remains. The mainstem Navarro was formerly rearing habitat for juvenile steelhead (CDFG, 1952) and a major recreational draw during the hot days of summer and fall. CA Water Code § 1243 is clearly not being upheld in this basin. Photo by Pat Higgins from KRIS Navarro. September 21, 2001.

Enforcement: Epidemic Lawlessness

“Every violation deserves an appropriate enforcement response. Because resources may be limited, however, the State Water Board will balance the need to complete its non-enforcement tasks with the need to address violations. It must also balance the importance or impact of each potential enforcement action with the cost of that action. Informal enforcement actions, described below, have been the most frequently used enforcement response. *Such informal actions will continue to be part of this policy for low priority violations.*”

Informal enforcement may only mean that WRD staff calls or emails the violator and then creates a file as a record of contact!

“If there is strong evidence that administrative civil liability would result in widespread hardship to the service population or undue hardship to the diverter, it may be reduced on the grounds of ability to pay.”

Watershed Groups

The Policy proposes to use watershed groups to fund studies, assess flow availability, and mitigate all problems related to diversions.

“A watershed group is a group of diverters in a watershed who enter into a formal agreement to effectively manage the water resources of a watershed by maximizing the beneficial use of water while protecting the environment and public trust resources.”

In other words, they want to turn their job and that of other State agencies over to local diverters.

Cumulative Watershed Effects:

There isn't as much water as there used to be.



Lower Terwer Creek running underground in late fall 1990. High sediment yield related to watershed disturbance has caused massive aggradation. The stream loses surface flow in late summer and fall yet there is no diversion upstream. Changes in vegetation and compaction also likely decrease summer base-flows.

Photo by Pat Higgins from KRIS Klamath-Trinity Version 3.0. September 1991.

(www.krisweb.com)

Diversion Cumulative Effects: Synergistic Problems with Multiple Diversions

“The cumulative impacts of water diversions from all areas of the drainage network requires consideration of the network as an entity, and not just the sum of all individual reaches” Band (2008).

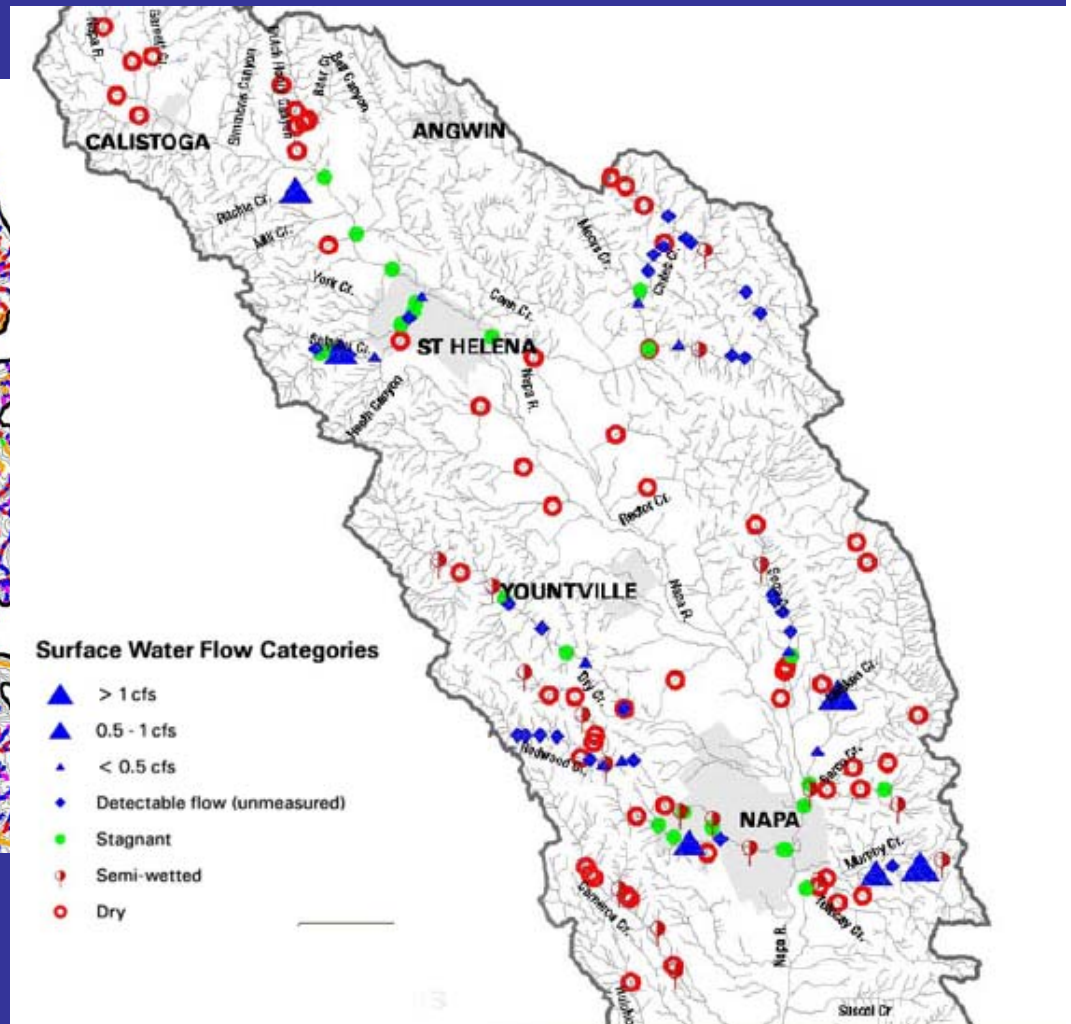
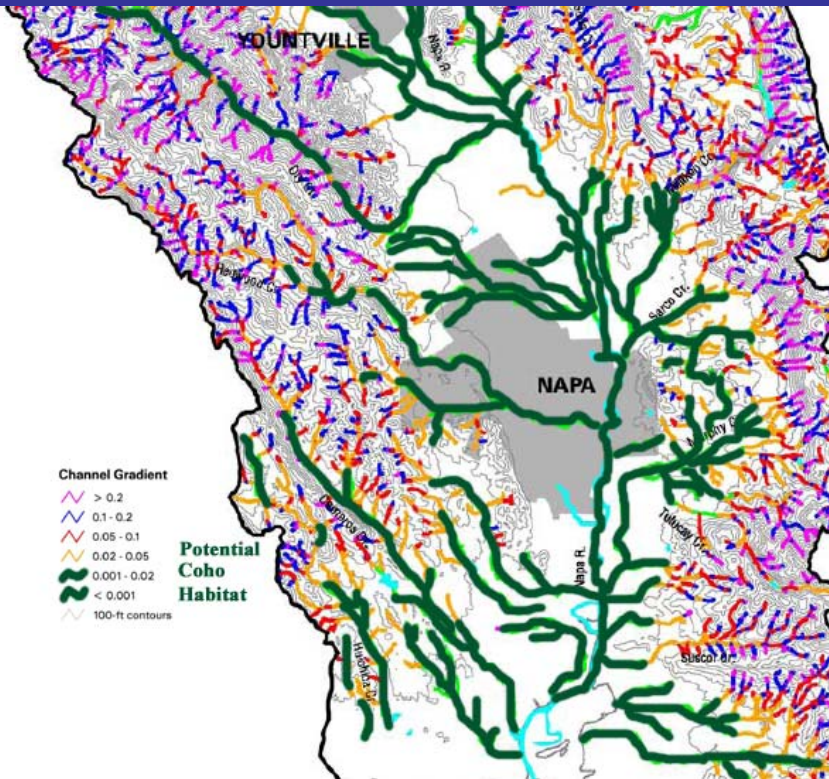
While each diversion might only capture less than 5% of the 1.5 recurrence interval flow at one location, Band (2008) calculated *the interaction between diversions in the stream system could increase to 28% downstream.*

Fine sediment accumulations, changes in spawning gravel quality, dry reaches, etc. in downstream reaches may coincide with areas of high use (refugia or “hotspots”)

CASE STUDIES



Napa River: Dry or Stagnant Where It Used to Have Coho Salmon





Navarro River

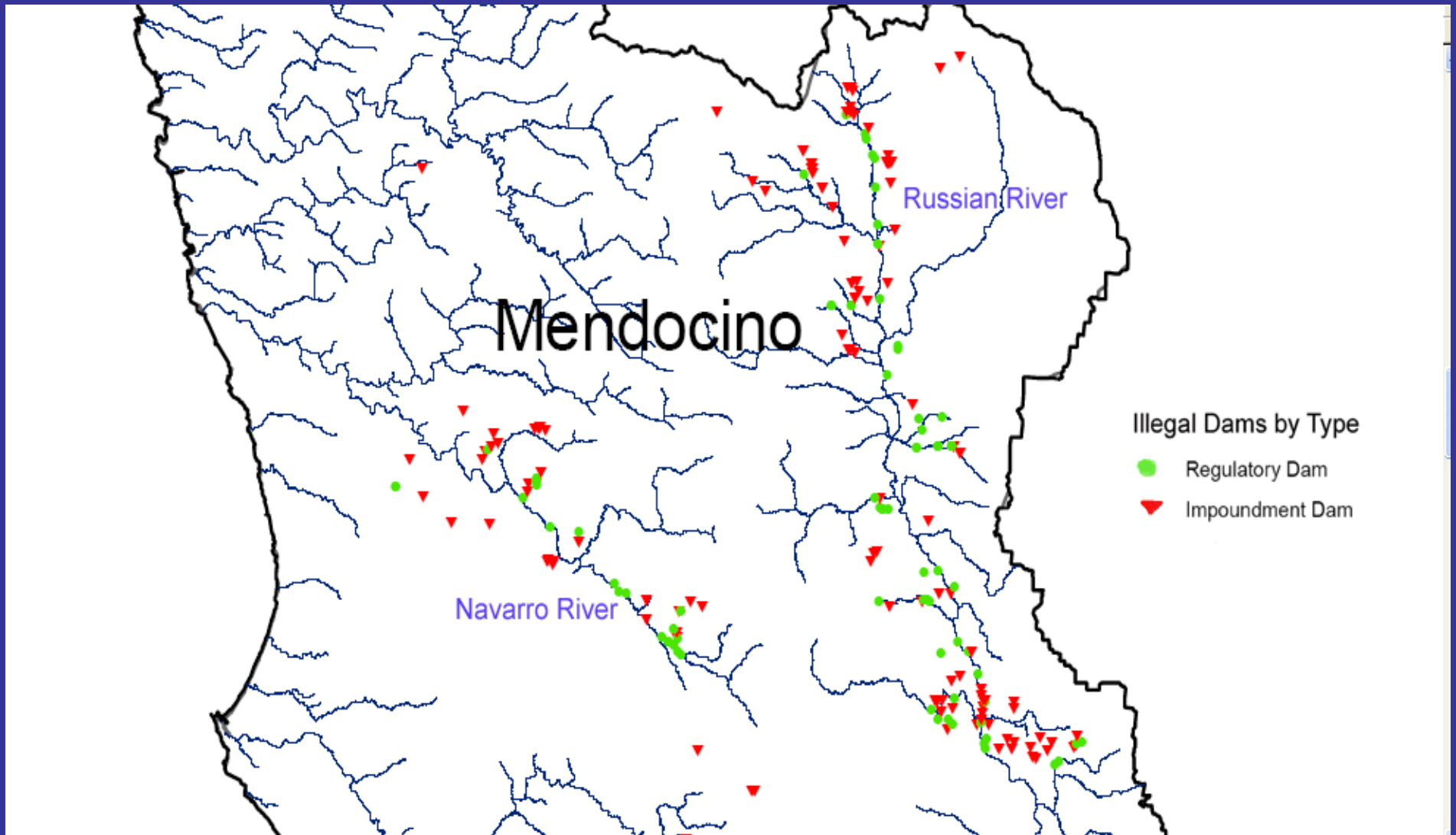
The lower mainstem Navarro River near Flume Gulch is shown at left during low flow conditions on September 21, 2001. The USGS flow gauge indicated that the average flow on this day was 1.1 cubic feet per second. The algae on the margins of the stream indicate stagnation and no fish were present at the time of observation. Photo from KRIS Navarro by Pat Higgins.

CDFG (1952) sampled this exact location in August 12, 1962 and found steelhead trout of two age classes (young-of-year, 1+) and a flow of 15 cfs during what was an average water year.



Aerial photo of agricultural development in the Navarro River basin circa 1998 shows ten ponds of different types typical of water storage. Photo by Rixanne Wehren from KRIS Navarro.

Russian River



Map of illegal Mendocino Co. diversions. From Policy Appendix



West Branch

Russian River

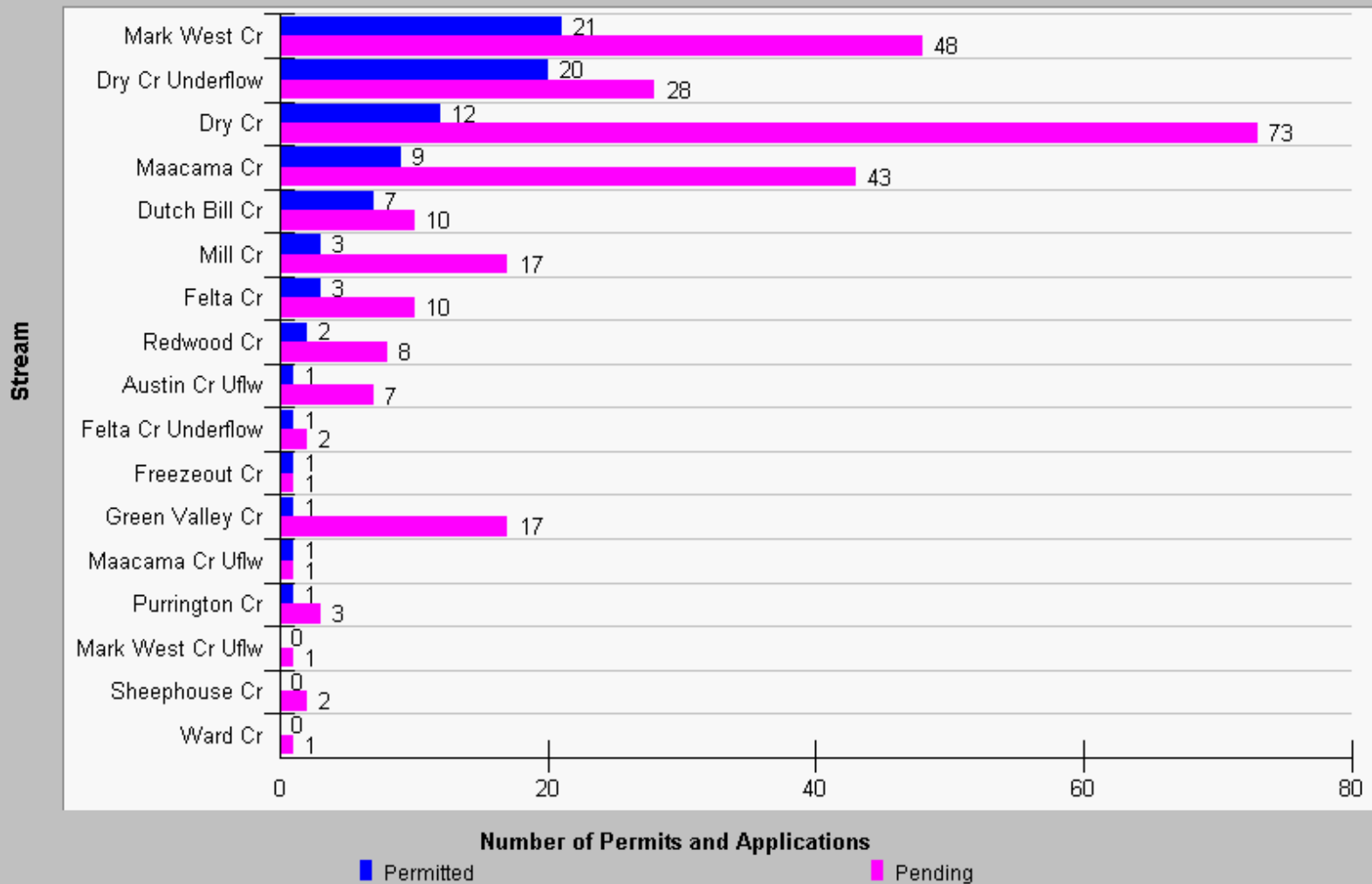
Looking downstream at the dry stream bed of the West Fork Russian River off the Eastside Road Bridge. The riparian vegetation lining both banks and extending back on the terrace at right is a result of a bioengineering project.

Photo by Pat Higgins from KRIS Russian River.



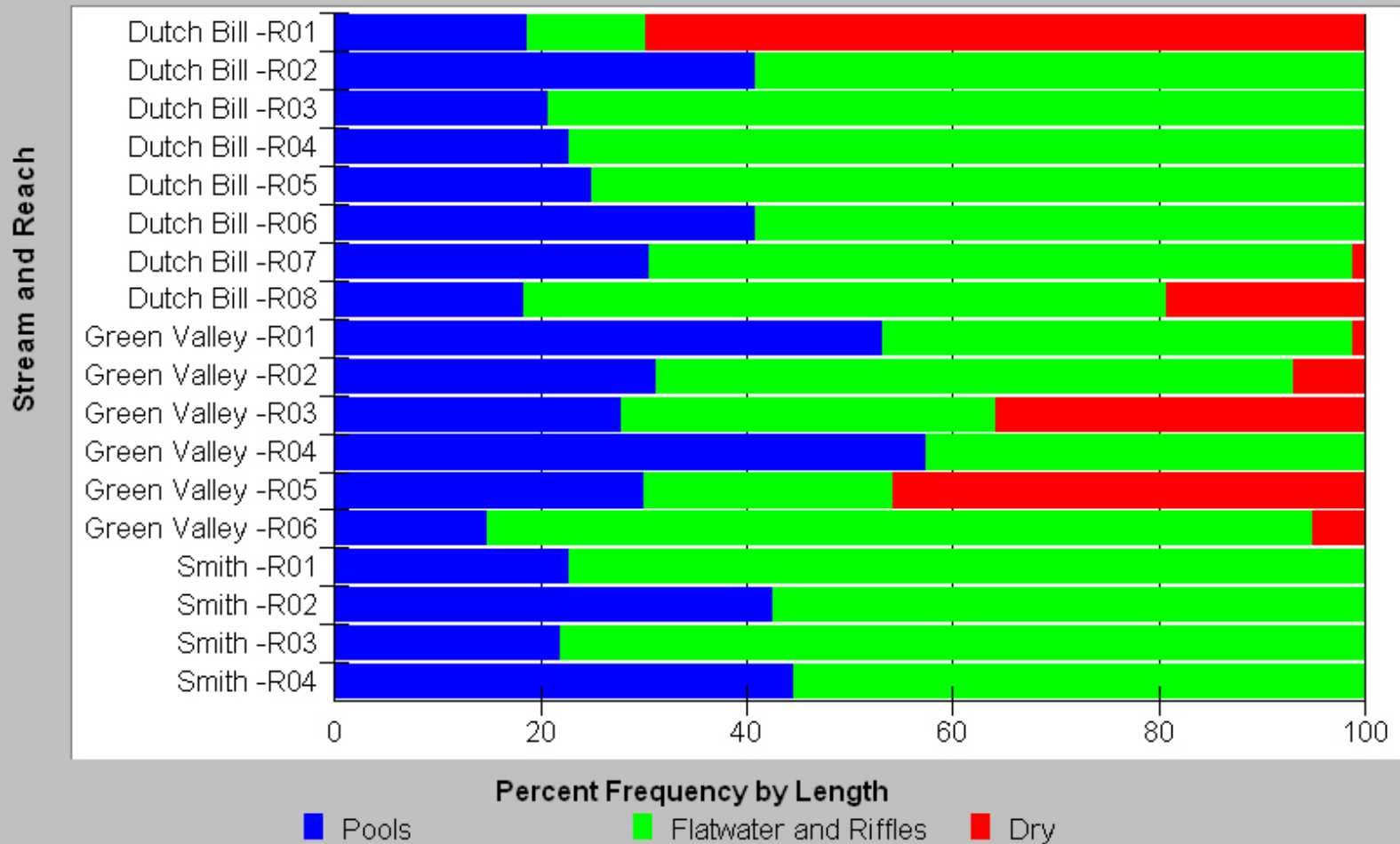
Groundwater pump in riparian zone of the Russian River off Eastside Road. Groundwater is not dealt w/ in *Policy*. From KRIS Russian.

Diversion Permits and Applications for Coho Streams of Sonoma County 2001



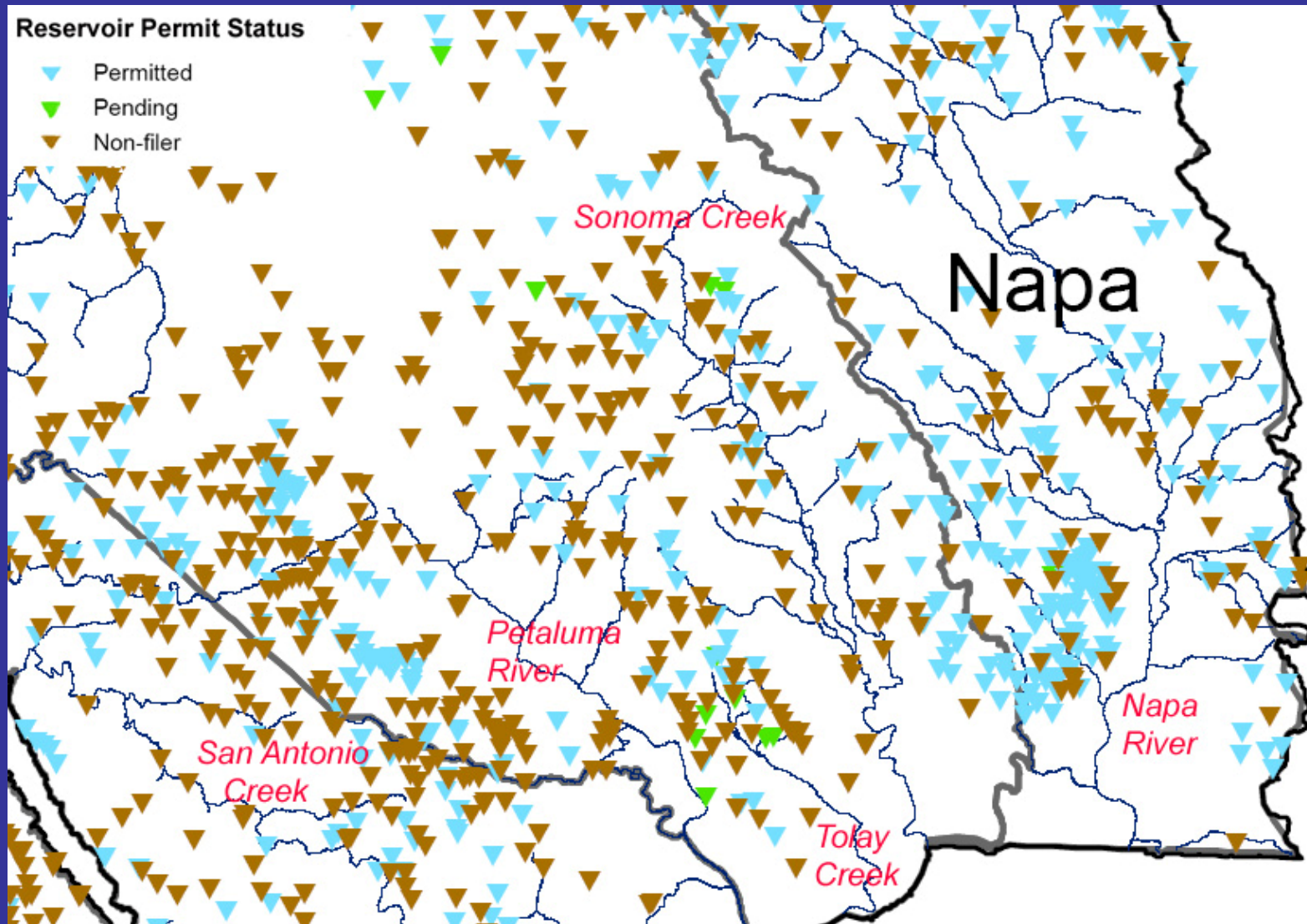
The number of approved permits for appropriative water rights and those pending approval in Russian River tributaries known to have harbored coho salmon, including Green Valley Creek and Dutch Bill Creek.

Percent Habitat Types by Length in Middle Guerneville Tributaries



CDFG habitat typing data for three lower Russian River tributaries shows that Dutch Bill and Green Valley Creek have significant dry reaches, yet more water rights permits are being considered. These creeks are some of the last to have coho salmon. KRIS Russian.

San Pablo Bay Tributaries/Sonoma Creek



Map from *Policy Appendix* showing hundreds of illegal North Bay diversions.

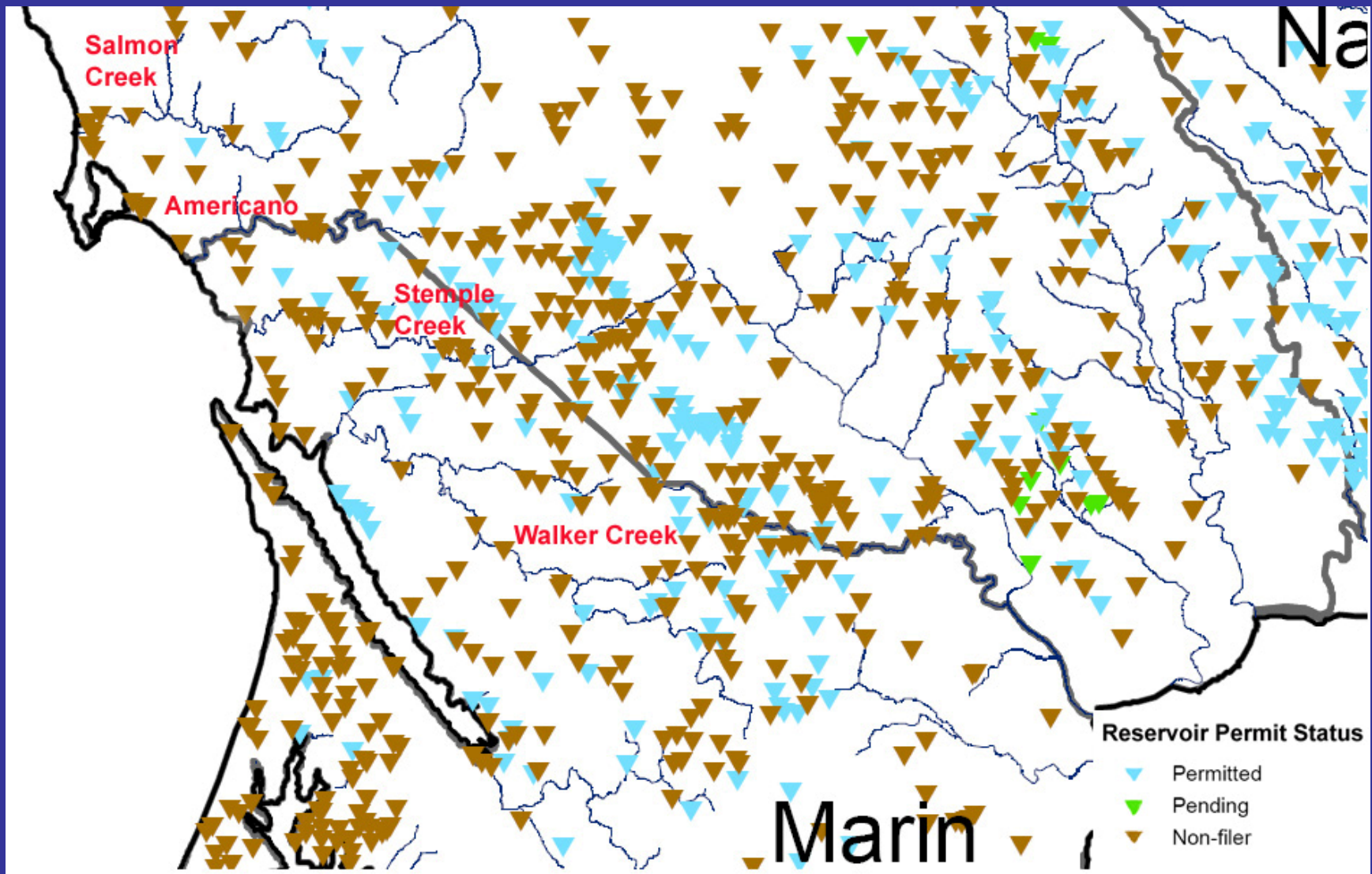


Carriger Creek, tributary of Sonoma Creek, exemplifies over-diversion problems of streams in the Wine Country.

Gualala River



The Wheatfield Fork, just upstream of its convergence with the South Fork, ran underground in 2001. Although the aggradation of the Wheatfield Fork is a factor contributing to lack of surface flows, water diversion for several vineyards and rural residential use exacerbate the problem. KRIS Gualala



West Marin County and Southwest Sonoma County streams are over-diverted and nutrient polluted. Map from *Policy Appendices*.



West Marin/Walker Creek

Lower mainstem of Walker Creek shows very poor fish habitat as a result of livestock grazing and flow depletion. The shallow, wide stream channel and lack of riparian vegetation makes the stream subject to warming.

Creel census data from 1949-1974 indicate that hundreds of adult steelhead were harvested in some years and adult coho were present in the catch (Kelley, 1976). The coho salmon run in Walker Creek was much more robust prior to 1950.

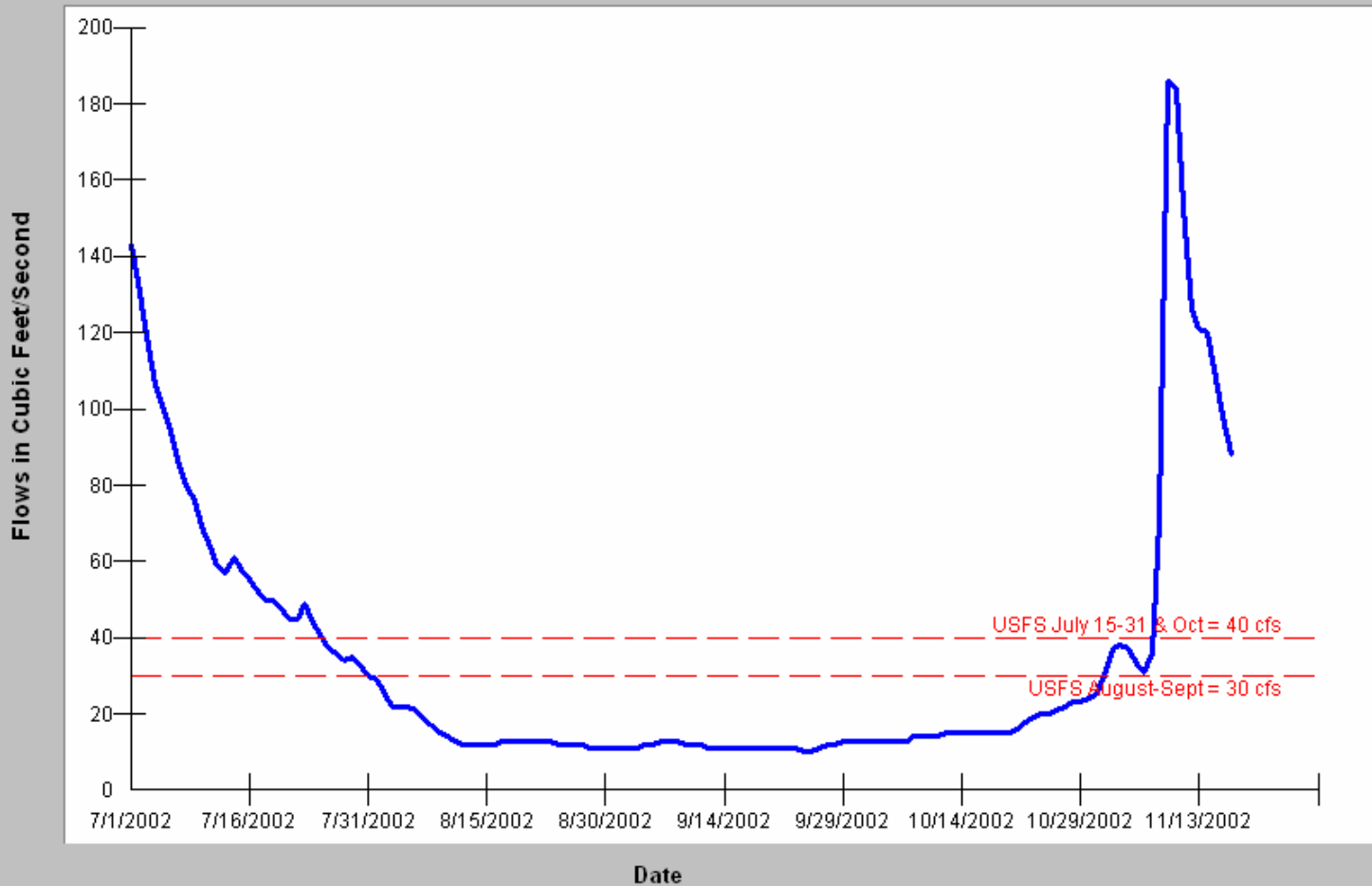
KRIS West Marin-Sonoma

Scott River: Major Klamath Tributary Dried Up, but Not in Policy Area



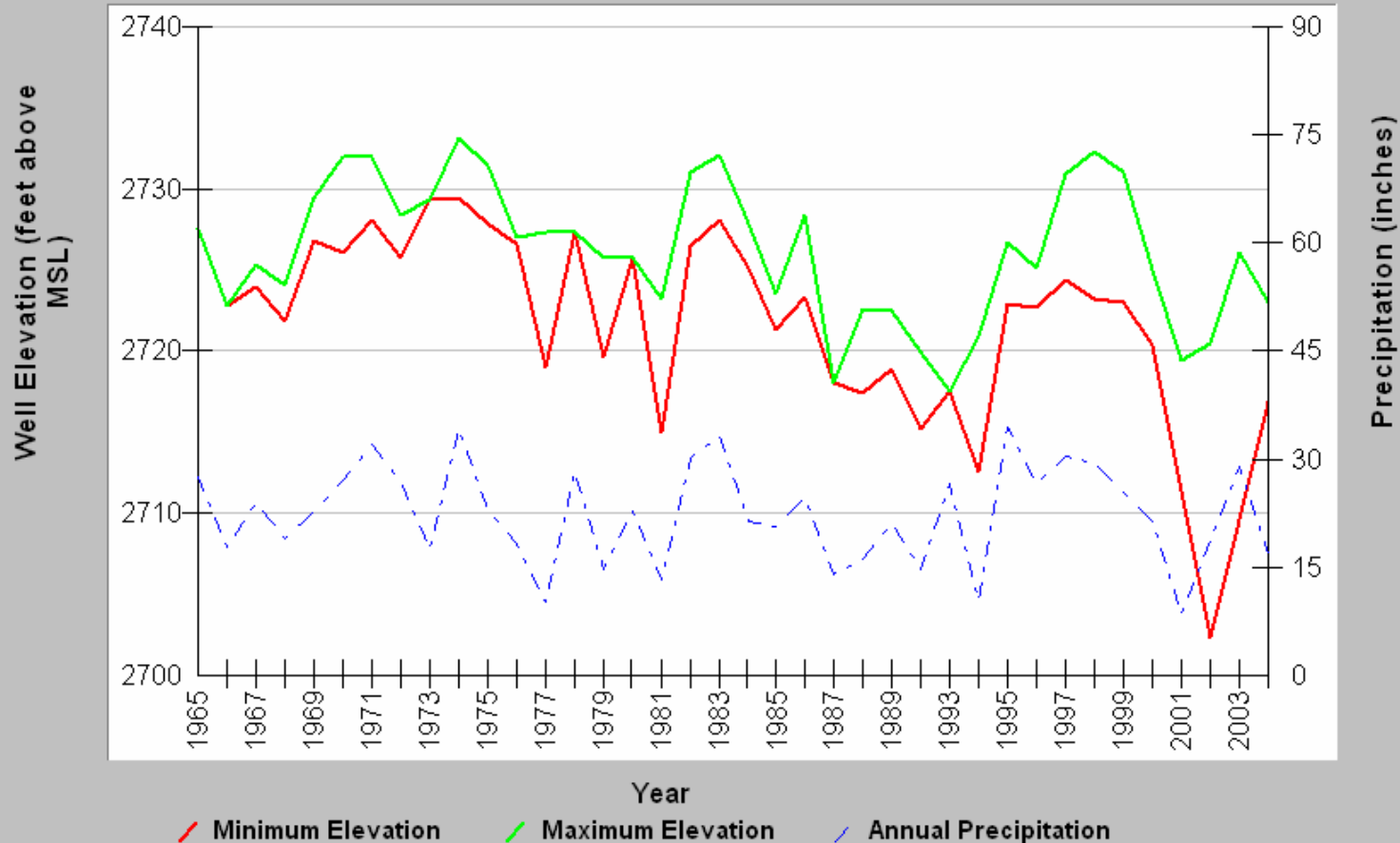
Photo by Michael Hentz, KRIS V 3.0.

Scott River Flows at USGS Jones Beach Gauge: 2002



Jones Beach USGS flow gauge data show that Scott River flows **failed to meet adjudicated levels** for the USFS and flows needed for fish migration, spawning and rearing in August, September and October. Reference lines are from the SWRCB (1980) adjudication.

Groundwater Elevation and Precipitation at 43N09W24F001M, 1965-2004



Scott River Groundwater Decline: Department of Water Resources well log near Fort Jones for the years 1965-2004 shows that minimum elevation declined, likely indicative of ground water depletion.

Shasta River: Best Chance for Klamath Restoration in Global Warming Era but Dried Up and Polluted due to Over-Diversion



Photo by Michael Hentz, KRIS V 3.0.

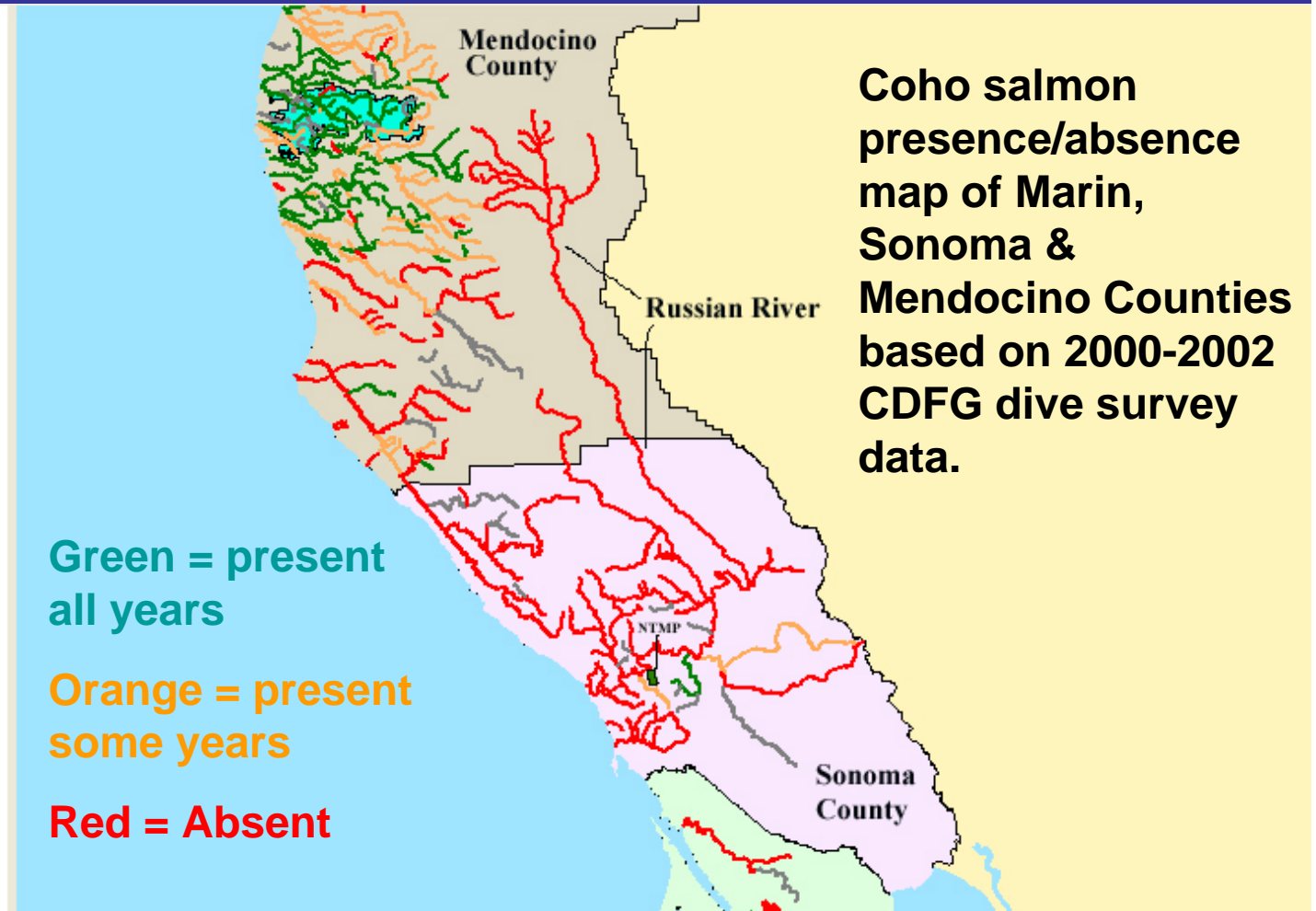


Shasta Valley,
Dwinnel Dam,
Lake Shastina

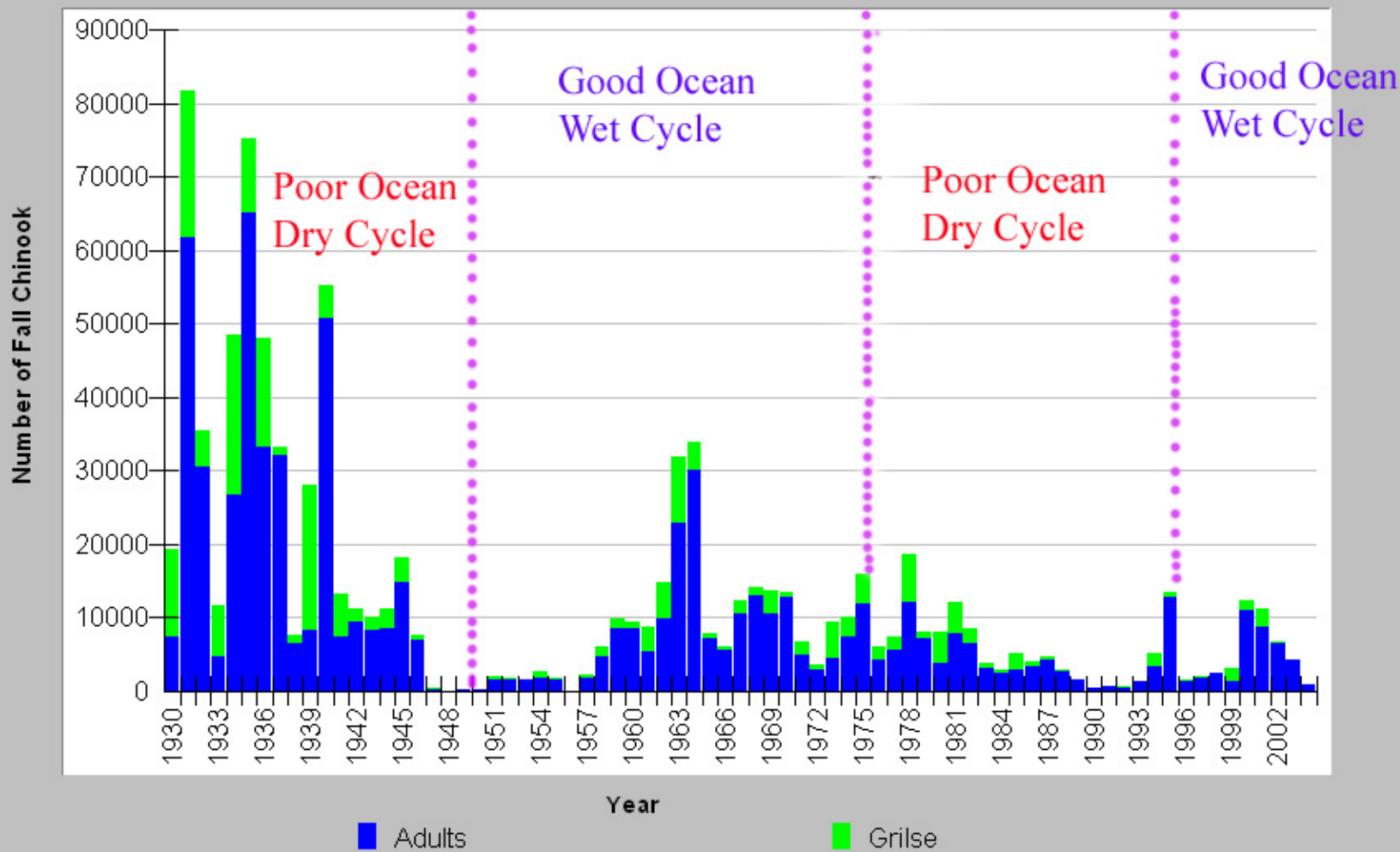
Dwinnel Reservoir looking southeast off the dam with water levels at less than full pool in 2002. Long retention time and exposure to sunlight trigger algae blooms and nutrient pollution. Water releases from this reservoir are restricted to avoid adding to water pollution downstream. It has blocked downstream flow since 1928 in violation of CDFG 5937. Photo by Michael Hentz, KRIS V 3.0.

Climate Cycles: We are already facing a wave of coho salmon extinctions before global warming results are fully manifest. Twenty five year cycles of wet on-land cycles and positive ocean conditions in northwest California and the Pacific Northwest alternate with periods of equal duration with lesser rain fall and poor ocean productivity. Coho salmon almost went extinct after last PDO switch (1975). We are currently in a wet climate/positive ocean cycle. Freshwater habitat conditions must be improved before the cycle switches back (2015-2025).

- Pacific Ocean
- Temperature Monitoring Points
 - MWAT >16.8 °C all years
 - MWAT >16.8 °C some years
 - MWAT never >16.8 °C
- Coho Presence/Absence (CDFG)(1988-1999)
 - Always present in years surveyed
 - Sometimes present in years surveyed
 - Never present in years surveyed
 - No data
- Coho Presence/Absence (CDFG)(2000-2002)
 - Always present in years surveyed
 - Sometimes present in years surveyed
 - Never present in years surveyed
 - No data
- Coho Presence/Absence (CDFG)(1988-2002)
 - Always present in years surveyed
 - Sometimes present in years surveyed
 - Never present in years surveyed
 - No data
- Historic Coho Streams (with labels)
- Streams (24k Mendocino/Sonoma, 100K Marin)
- KRIS Garcia Project Background
- Jackson Demonstation State Forest
- Counties
 - Mendocino County
 - Sonoma County
 - Marin County
 - California



Shasta River Fall Chinook Estimated Spawning Escapement 1930 - 2004



Fall Chinook returns from 1930 to 2004 with the PDO cycles overlaid. Returns fluctuate with climate and ocean cycles but the long term trend is down as a result of continuing loss and degradation of freshwater habitat.

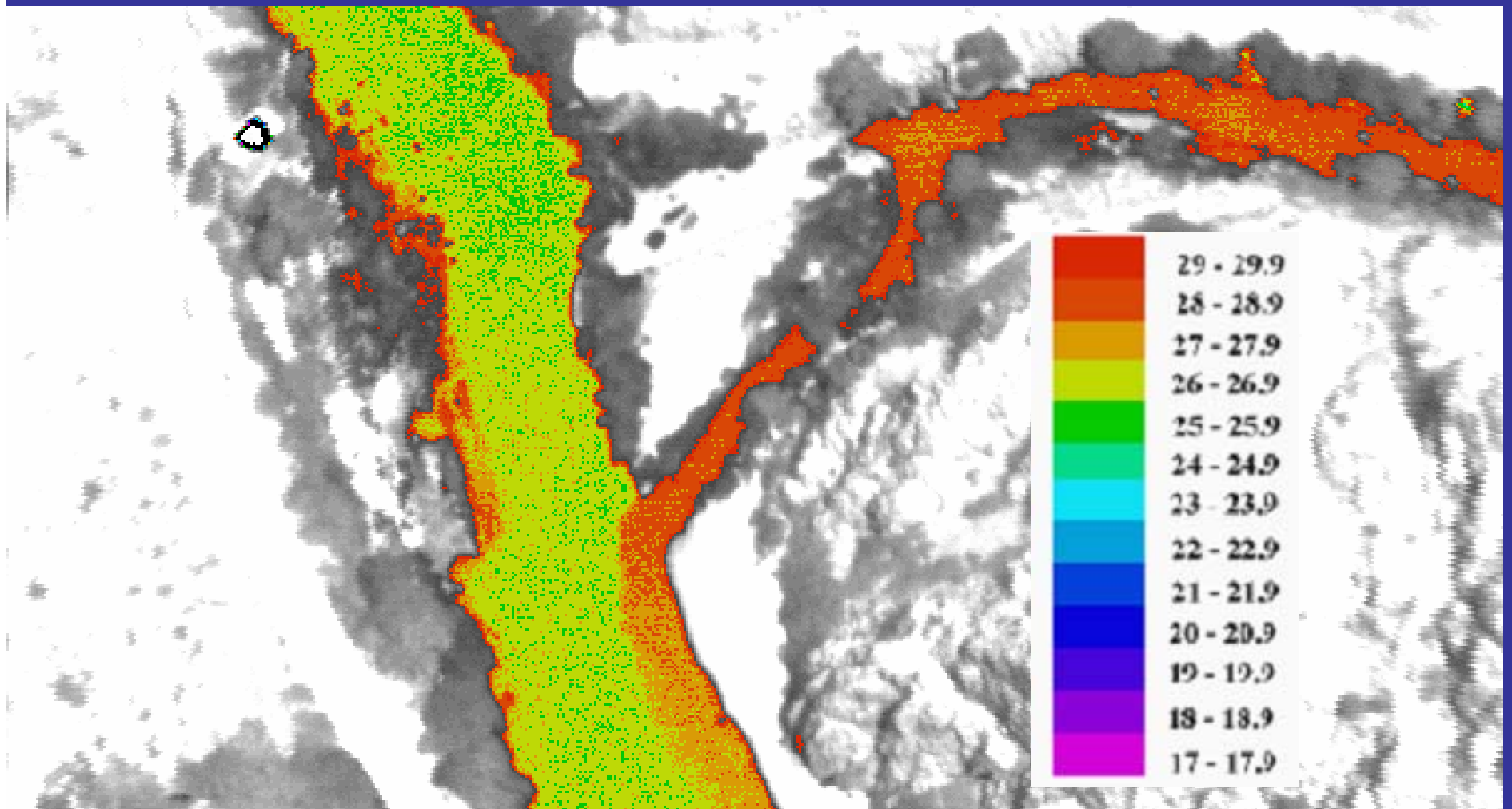
Recommendations


- Only consider diversions after December 15.
- Get USGS to set up gauges for year around flow measurement region wide and to determine ground water supply and withdrawal impacts .
- Stop post-permitting of illegal diversions, make fines sufficient to be a disincentive and get busy decommissioning thousands of illegal dams.
- Do not recognize groups of diverters as a “Watershed Group” and cede public trust authority
- Work cooperatively w/ CDFG using 5937 and other agencies working on CWA (TMDL), ESA and NFMA.
- Change California Water Law to make riparian diversions require a permit.
- Consolidate surface water and ground water management and Watermaster Service under one State agency

The Klamath and Eel River basins have enormous fisheries potential, more wildlands, and arguably greater need for help resolving flow issues than river systems covered under the North Coast Policy.

Timely action to restore flow and improve water quality in the Scott and Shasta Rivers could get the best return on investment for the WRD, if fish production is the index.

Shasta River warming the Klamath in July 1996 in FLIR image from OSU. Could be cold and clean with restored flows helping the Klamath River heal.



A close-up photograph of a person's hand holding a rainbow trout in a stream. The fish is vibrant with iridescent colors and is being held by its mouth. The water is turbulent and white with foam. The background shows dark rocks and more water.

It is time for State agencies to uphold the law, to begin cooperative work to remediate over-diversion of surface and groundwater, and to not only prevent fish stock extinctions, but to aim for restoration that provide a harvestable surplus of fish. Restoration of recreational beneficial uses will improve regional quality of life. Healthier rivers will also contribute to economic development related to tourism.

Comments by May 1

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QUESTIONS?

