Water Rights Challenges to Coho Recovery in Coastal California Watersheds

FINAL DRAFT

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LA 222

May 18, 2009

Abstract

The recovery of populations of anadromous fish species such as coho salmon (*Oncorhynchus kisutch*), a state and federally listed species, has been a major driver in both regulatory and voluntary efforts to protect and manage instream water quality and quantity in the coastal watersheds of Northern California. While prominent portions of California law (Public Trust Doctrine, California Water Code § 100, California Fish and Game Code § 1700, and California Public Resources Code § 10000-10005) state the need to protect water resources for environmental purposes, California's legal requirements for obtaining and maintaining surface water rights largely inhibit the ability of individual water rights holders to contribute to this cause. In my review of California water law and current instream flow programs I found that regulatory-based methods for dedicating water rights to instream flows currently involve time and monetary costs that are prohibitive for most water rights holders. Additionally, I found that while several non-governmental organizations are implementing innovative instream flow dedication programs, their efforts are hindered by the very laws and policies that are intended to protect instream flows. In order to effectively manage instream flows necessary for coho habitat, the existing 1707 dedication process must be simplified. Non-regulatory programs, while already implemented efficiently, would benefit by being recognized by the State Water Resources Control Board so that instream flow dedications are effectively protected downstream and appropriative water rights holders do not risk losing their water right due to their voluntary instream flow contributions.

Problem Statement / Introduction

Water rights and associated water use in California are complex issues that have become increasingly complicated as demands for agriculture, residential, and other human uses have increased. These increased water use demands pose as a significant threat to instream flows, a particularly sensitive issue for California's small coastal watersheds. While all watersheds in Mediterranean climates face the predicament of human water use demand (particularly for agriculture) being inverse to the seasonal

period in which water is most abundant; coastal watersheds face additional constraints in that they typically have limited options for groundwater storage, tend to rely entirely on in-basin water supplies, and do not generally have agricultural districts or water agencies that oversee or coordinate local water use (Moyle and Kondolf 2000; DFG 2004). Many of these watersheds are also contained in relatively small and steep basins where direct human activities related to land-use and water extraction can have a great impact to water resources (Stillwater Sciences 1997).

In addition to the concern for adequate water supplies available for human consumption, populations of coho salmon (*Oncorhynchus kisutch*) along coastal California have declined dramatically over the last 100 years due to habitat loss and degradation caused by a variety of land-use practices that have limited water quality and quantity (DFG 2004). Coho require cool water temperatures, instream shelter, deep pools, and spawning gravels with minimal fine sediment accumulation (Moyle et al 2000). These conditions require instream flows that are significant enough to maintain natural geomorphic processes during winter months and maintain cool, deep pool rearing habitat through dry summer months (DFG 2004). Increased water diversions, particularly during dry summer months, have greatly altered instream conditions necessary to maintain suitable coho habitat. As a result of population declines, coho salmon are now both federal and state listed species throughout most of Northern California. This listing under the Endangered Species Act requires the regulatory protection of the species as well as its associated habitat (16 U.S.C. 1531; Fish & Game Code § 2050, *et seq.*).

Although California law mandates the protection of instream flows for environmental protection (Public Trust Doctrine, California Water Code § 100, and California Public Resources Code § 10000-10005), the responsibility of this mandate is left to the State rather than the water rights holders. As the need to protect water resources for environmental purposes grows with increasing water demands and climate change, water rights dedications to instream flows are likely to become increasingly

important. For my research I examined California water law and policy and evaluated how they promote and/or deter the conservation of water resources and the allocation of water for instream flows in the context of water rights. I also investigated two different case studies that use existing water rights to designate instream flows for salmon habitat in an effort to understand how California's water laws impact the actual designation and management of instream flows.

Methods

In an effort to understand the opportunities and constraints of California water law and policy, I systematically reviewed California's Public Resources Code, Fish and Game Code, and Water Code. I also reviewed the Department of Fish and Game (DFG) and National Marine Fisheries Service's (NMFS) *Draft Guidelines for Maintaining Instream Flows to Protect Fisheries Resources Downstream of Water Diversions in Mid-California Coastal Streams* (DFG-NMFS Draft Guidelines) and the State Water Resources Control Board's (SWRCB) *Draft Policy for Maintaining Flows in Northern California Streams (Draft Flow* Policy). Through this review process I identified laws and policies relating to the provision of instream flows and evaluated how they promote and/or deter the conservation of water resources and the allocation of water for instream flows (Table 2). I then conducted a search of all processed and pending water rights applications listed on the SWRCB website and eWRIMS database to assess the amount of water that has been dedicated to instream flows under California Water Code § 1707, the type of change in use, and the time it took for the initial application to be processed (Table 1). I attempted to verify the number of 1707 dedication permit applications submitted to date with SWRCB staff and interviewed both SWRCB staff and a 1707 dedication permit applicant to gain insight into the implementation process associated with this particular Water Code section.

In addition to assessing the direct provision of instream flows through regulatory processes, I also investigated two different non-regulatory programs, the Mattole Flow Program and Scott River Water Trust Program, as case studies. I compared the instream flow amounts, change in use, and timing stated in forbearance agreements associated with these programs to 1707 dedications. I also assessed how California's current water rights structure and policies impact the effectiveness of these programs.

California Water Law, Regulation, and Policy Related to Instream Flows

The California Constitution, Article 10 § 2 and Water Code § 100 prohibit the waste, unreasonable use, unreasonable method of use, and unreasonable method of diversion of water. Historically, (and occasionally today) sentiments echoed those of former President Herbert Hoover when he stated that: "The waters of this great river, instead of being wasted in the sea, will now be brought into use by man." While the Public Trust Doctrine and California State Fish and Game Code both reference the importance of protecting fish and fishing interests, they hold the responsibility of protecting these resources in the Trust of the government for the benefit of the People (Chopra 2005). Since 1914, this has meant that regulatory agencies determine adequate instream flows and remaining water could be granted to individual users through the water rights application process. A significant problem with this approach is that California has multiple forms of recognized water rights. While appropriative water rights explicitly state how much water one has a right to withdraw, riparian rights, which were adopted from English Law, are restricted to 'reasonable use' rather than an explicit amount (Anderson and Johnson 1986). Additionally, the process of accurately determining instream flows necessary to protect desired habitat in a given watershed is largely based on environmental data that is typically limited in spatial and temporal scale in small coastal watersheds. The dramatic seasonal and annual variation of precipitation in California means that there may not be enough water to even fulfill allocated water rights during dry years (Chopra 2005).

Previously, California water law did not recognize or provide for the appropriation of water specifically for fish and wildlife. In the case of *Fullerton v. State Water Resources Control Board* (1979) the courts withheld that even the Department of Fish and Game, the state agency responsible for providing instream flow recommendations, could not appropriate water for instream use under the argument that there was no evidence of diversion or physical control over the water (*Anderson and Johnson 1986).* California state law still does not permit new appropriations of water for instream flow; however, in 1991 California Water Code § 1707 was enacted to permit the transfer of existing consumptive water rights to instream flows for environmental purposes. This formal process of dedicating water for environmental purposes is considered a reasonable and beneficial use of surface waters and the ownership of the water right would not be lost through disuse. California law allows transfers to be either permanent or temporary changes in use. Therefore, water rights for instream flows can be temporary or permanent (California Water Code § 1707).

In 2000 the Department of Fish and Game (DFG) and the National Marine Fisheries Service (NMFS) developed *Draft Guidelines for Maintaining Instream Flows to Protect Fisheries Resources Downstream of Water Diversions in Mid-California Coastal Streams* (DFG-NMFS Draft Guidelines). While this document was never formally adopted by DFG, NMFS, or the State Water Board as formal policy, it contains a thorough assessment process for determining minimum instream flows for salmonid species in California, and has been used as a reference document by SWRCB staff when reviewing water rights applications (Merenlender et al. 2008).

Subsequent to the state listing of coho salmon populations in 2002, the Department of Fish and Game developed a Coho Recovery Strategy that recommends both local and regional efforts that should be taken in order to restore habitat required for coho salmon populations (DFG 2004). This document prescribes the protection and increase of instream flows as a significant requirement for coho recovery.

However, the document has no connection to any regulatory action that would ensure that its proposals are implemented.

Assembly Bill 2121 (AB 2121) added Section 1259.4 to the California Water Code, requiring that the State Water Board adopt principles and guidelines for maintaining instream flows in northern California coastal streams and address this issue by proposing a science-based method for reviewing and processing pending water right applications. The State Water Board released a *Draft Policy for Maintaining Flows in Northern California Streams* (Draft Flow Policy) in an effort to fulfill the mandates of AB 2121 on December 28, 2007 to address water diversions in five counties: Marin, Sonoma, parts of Napa, Mendocino, and Humboldt counties. The stated goal of the Draft Flow Policy is to "mimic the natural hydrograph as closely as possible, thereby maintaining natural stream processes that support salmon and steelhead in these streams, while also evaluating what levels and rates of diversion would be protective" (SWRCB, 2007). The Draft Flow Policy for AB2121 has the potential to assist in assuring that assessments for current and future water rights applications are made based on scientific assessment and under the precautionary principle in an effort to minimize impacts to instream flows required for salmon habitat. This is a step in the right direction but does not address watersheds that are already over allocated. This Draft Flow Policy, if approved in its current state, could also have a detrimental impact to some current non-regulatory instream flow programs that utilize water from storage tanks during critically dry periods. By prohibiting new water rights in all but winter months, riparian rights holders would not be able to get an appropriative right to allow for onsite water storage that is necessary for them to be able to change the timing of their surface water withdrawals.

Although California Fish and Game Code § 1700 recognizes the importance of maintaining waters for fish populations, not using one's allocated water rights in order to keep water instream is not

considered a reasonable or beneficial use unless the water rights are formally dedicated through the 1707 permit process. If an appropriative water right is not either actively used or dedicated as instream flow through the 1707 permit process the water right can be lost due to 'non-use' after five years (riparian water rights holders are not subject to this provision since they cannot lose their rights due to lack of use). California Water Code § 1707 provides a specific route through the regulatory process in which a water rights holder can dedicate instream flows and not risk losing their water right. Although the 1707 dedication process seems like an extremely useful tool in theory, the process so far has proven to be too cost prohibitive and time consuming to be reasonable for most private landowners (Sommarstrom, Scott River Water Trust, pers. comm. April 2009). Currently only nine 1707 dedication applications are listed in the SWRCB's online database and half of the applications are for large diversions that are associated with mitigation related to state-level water management activities.

Table 1: 1707 Dedications to Date

Order	Watershed	Rate (cfs)	Total Amount (AF)	Change in Use	Date Filed:	Date Determined	Status
	Indian Creek	3.5	Not to exceed 1350AF	Water efficiency	Jan-05	-	pending
	French Creek	0.76	188	Timing of irrigation diversion	Mar-09	-	pending
	Sugar Creek	5.8		Water efficiency	Oct-05	-	pending
Order WR 200800010-DWR	Butte Creek	40 (approved amount)	5,060	Will divert same amount from Sacramento River from BoR	Jul-05	Jan-08	Part Approved/Part Denied
Order WRO 2003-0001	North Fork Tule River	1.5cfs	Not to exceed 1,015 AF	Irrigation to instream flows	Jun-01	Sep-02	Denied
WR Order 2007-0021-DWR	Merced and San Joaquin	850cfs	15,000AF	Offset the water being pumped at the Jones Pumping Plant by Reclamation	May-07	Jun-07	approved
Order WR 2007-0036-DWR	Merced and San Joaquin		up to 25,000	Downstream of Vernalis1 to the San Francisco Bay/Sacramento – San Joaquin Delta Estuary (Delta)	Jun-07	Oct-07	approved
Order WR 2001-25-DWR	Merced and San Joaquin		up to 25,000	Transfer water to the CALFED Environmental Water Account	Jul-01	Oct-01	approved

Order WR-2000-14DWR	Merced and San Joaquin		up to 25,000	Transfer water to the CALFED Environmental Water Account	Aug-00	Oct-00	approved

Other Options: Non-Regulatory Initiatives

Some organizations have recently established local programs in coastal watersheds whereby they work directly with landowners to set up forbearance agreements and/or conservation easements that are not regulatory-based. The Mattole Flow Program run by the Sanctuary Forest, a 503(c)3 non-profit, is a water storage and forbearance program in which landowners are provided with large-capacity water tanks in exchange for their consent to withhold from pumping water during the dry season (August 1 – November 15). The agreements between the Sactuary Forest and water rights holders are set for a 15 year period and water rights holders are still permitted to withdraw surface water during the wet season. By the end of 2009, Sanctuary Forest staff anticipate that 20% of the households along the Mattole River will be abstaining from withdrawing any surface flows from the river during the dry season (Levy 2009).

The Scott River Water Trust also runs a program that works with landowners to provide instream water for salmon habitat although they take a different approach. The Scott River Water Trust focuses on setting up short-term water leases that run between 60 to 90 days during late July through September when young coho salmon and steelhead are rearing in the Scott River and its tributaries (Scott River Water Trust 2009). The landowners are typically farmers or ranchers that sign a short-term lease agreement with the Water Trust and receive compensation for the amount of water that they do not use. The Scott River Water Trust works closely with landowners with the aim of maintaining flows in the specific areas of the watershed that are known to be critical salmonid habitat (Sommarstrom, Scott

River Water Trust, pers. comm. April 2009).

Both of these programs have shown that they can be implemented efficiently and effectively. The agreements are typically processed within a few months, as compared to three to four years for 1707 dedication applications with approximately the same quantity of dedicated flows. They do, however, have some significant drawbacks. Because the forbearance agreements are contractual agreements that do not go through SWRCB permitting process the water that is not diverted by the landowner that signed the forbearance agreement can be withdrawn by a riparian rights holder downstream. Additionally, appropriated water rights holders still risk loosing their water rights if they enter into these agreements for more than five years because currently the SWRCB only recognizes instream allocations that are designated through the 1707 permit process.

Table 2: California Code and Policy Influences on Instream Flows and Water Rights

Code/Policy	Potential Instream Flow and Water Right Impact
Public Resources Code § 10000-10005	Develop instream flow recommendations, No effect on water rights
Fish & Game Code §2050	Prioritizes the development of instream flow criteria for watersheds containing listed species, No effect on water rights
Water Code § 100	Does not allow instream flows as a 'use' of a water right
California Water Code § 1707	Establishes a legal method for water rights holders to dedicate existing water rights to instream flows
California Water Code § 1259.4	Directs the development of a policy, No effect on water rights
California Constitution, Article 10 § 2	Does not allow instream flows as a 'use' of a water right
DFG-NMFS Draft Guidelines	Develop instream flow recommendations, No effect on water rights
SWRCB Draft Flow Policy	Instream flow assessment requirments are likely to improve minimum instream flow amounts. Diversion restrictions may negatively impact efforts to reduce diversions of existing water rights holders during critical summer months.

Discussion/Conclusion

The task of balancing both water rights and the protection of endangered species is complex and wrought with institutional and regulatory hurdles. Although there has been a long-running State interest in protecting flows for instream use, most existing water rights were granted before the

relationships between hydrologic cycles and salmon habitat requirements were well understood and water rights were traditionally not permitted for instream use. Under this system every water right approved by SWRCB is a reduction in water available for aquatic habitat. If the amount of water required to maintain adequate habitat is underestimated by DFG and NMFS or the amount of available water within a watershed is overestimated by SWRCB when approving water rights applications, there could be significant consequences to salmon and other species (Chopra 2005). Under these considerations, the ability to utilize water rights to assist in maintaining instream flows is an important one that should be considered.

Table 3: Water Rights Instream Flow Dedication Program Comparisons

Program Type	SWRCB Recognition	Type of Water Right	Method	Time Period	Benefits	Drawbacks
1707 Dedication	Yes	Existing Riparian and Appropriative Water Rights	Change of Use Designation	Temporary or Permanent	Instream use is legally protected, appropriative water rights holders don't risk loosing right due to 'non-use'	Lengthy processing time, costly, generally not coordinated with other water rights holders in the watershed
Forebearance Agreement	No	Existing Appropriative	Private Contract	Temporary	Efficient, locally directed and coordinated, some programs provide compensation	Instream use not recognized by SWRCB so flows can be taken out by downstream riparian rights holder and appropriative water rights holders risk losing their water right due to 'non-use'
Conservation Easement	No	Existing Appropriative	Private Contract	Permanent	Efficient, locally directed and coordinated, some programs provide compensation	Instream use not recognized by SWRCB so flows can be taken out by downstream riparian rights holder and appropriative water rights holders risk losing their water right due to 'non-use'

One key method for insuring instream flows is to permit them as a legitimate use that can be protected through appropriative water rights. California Water Code § 1707 has been the State's biggest step forward in legally permitting the designation of water rights for instream benefit. It provides a legally recognized process for dedicating water rights for instream flows such that appropriative water rights dedicated to this purpose cannot be lost and instream dedications are at least theoretically enforced by

SWRCB. The process to obtain a 1707 permit however, has proven to be too cost prohibitive and time consuming for most water rights holders that would otherwise participate. Non-regulatory methods for either the temporary or permanent dedication of water rights to instream flows through forbearance agreements and conservation easements have proven to be quicker and more cost effective than 1707 permits but currently are not recognized by the SWRCB. Without recognition of these agreements by regulatory agencies, there is nothing stopping a downstream riparian rights holder from diverting water that was left instream under a forbearance agreement and appropriative water rights holders risk losing their water rights if they participate in such a program for more than five years. In order to effectively provide water rights coverage for instream purposes, conservation easements and forbearance agreements for instream flow dedications need to be recognized by the State and 1707 permit applications need to be processed in a timely and cost effective manner.

Although I focused my research efforts on assessing the applicability of utilizing water rights as a regulatory-based means to provide instream flows, there are a variety of other water policy and management issues that need to be addressed in tandem in order to insure comprehensive water policy and management in small coastal watersheds. Both the Draft Flow Policy and forbearance agreements may have unintended consequences due to proposed restrictions on surface water use if not included as part of a more comprehensive watershed management strategy. Without holistically regulating water resources, water extraction is likely to shift from surface to groundwater sources, potentially undermining the intentions of these efforts. The Mattole Flow Program is a good example of addressing this issue in that the surface waters remain the primary source of water although the timing has shifted. This approach can have a significant benefit to summer instream habitat, but precaution should be taken to insure that peak winter flows necessary for maintaining geomorphic processes are not compromised. Preventative measures such as incorporating water-use assessments when land is initially zoned and reducing water demands through residential and agricultural water conservation

measures are likely the most effective measures for maintaining adequate water supplies for both human and ecological use but are often overlooked. Balancing the use and protection of surface water for domestic, agricultural, industrial and commercial use, and the maintenance of habitat for endangered species is no small task. To do so effectively requires the cooperation of water rights holders, land managers, policy makers, and regulatory agencies.

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