

CRITIQUE OF THE DRAFT WATER BYPASS POLICY

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On Feb. 6, 2008, I attended a meeting at the Santa Rosa office of the State Water Resources Control Board. This was a "Technical Staff Workshop" to explain the "Draft Policy for Maintaining In stream Flows in Northern California Streams." The "draft policy was developed to protect in-stream flows needed for threatened and endangered fish." Specifically, Steelhead, Coho, and Chinook. The basic premise in this legislation is as follows: Rainwater falling in the subject (parts of five counties) area may not be captured and stored unless allowed by permit from the State Water Resources Control Board. In order to obtain a permit, a lengthy, complex, and undoubtedly costly study is mandated by this policy. The "bypass" part of the policy refers to the requirement that a means be installed to keep rainwater from flowing into storage ponds unless the flow meets certain requirements. When, and how much water may be diverted into the ponds requires a study encompassing such things as total watershed (catch basin) size, flow characteristics of any drainage ditches and creeks, presence of fish, and location of all water rights holders downstream from the location of the storage pond, to the Pacific Ocean. Here is one of the formulas from the workshop draft policy.

Minimum Bypass Flow Calculation

- Watershed drainage areas less than or equal to 290 square miles:

$$Q_{MBF} = 8.7 Q_m (DA)^{-0.47}, \text{ where}$$

Q_{MBF} = minimum bypass flow

Q_m = mean annual unimpaired flow

DA = watershed drainage area. When using this equation at the point of diversion, if the upper limit of anadromy is downstream of the point of diversion, the drainage area at the upper limit of anadromy may be used.

(changed)

- Watershed drainage areas greater than 290 square miles:

$$Q_{MBF} = 0.6 Q_m, \text{ where}$$

Q_{MBF} = minimum bypass flow

Q_m = mean annual unimpaired flow

Catch basins may be as small as a backyard, or as large as hundreds of square miles. The policy is probably aimed at stock and irrigation storage ponds, but because there is no minimum size included in the legislation, even people with backyard fishponds as small as bathtub size technically fall under these regulations, and could therefore be subject to legal enforcement.

The meeting was to have started at 1:00PM but was delayed for a short time because two representatives from the State Office were late. Then it was discovered that the overflow crowd exceeded the allowed capacity, 91, of the conference room by a dozen or more. With loud complaints from people standing in the doorway that they couldn't hear, the staff asked if anyone would like to leave, and that a second presentation would be offered at 3:30 PM. No one volunteered to leave, so the meeting proceeded at about 1:20.

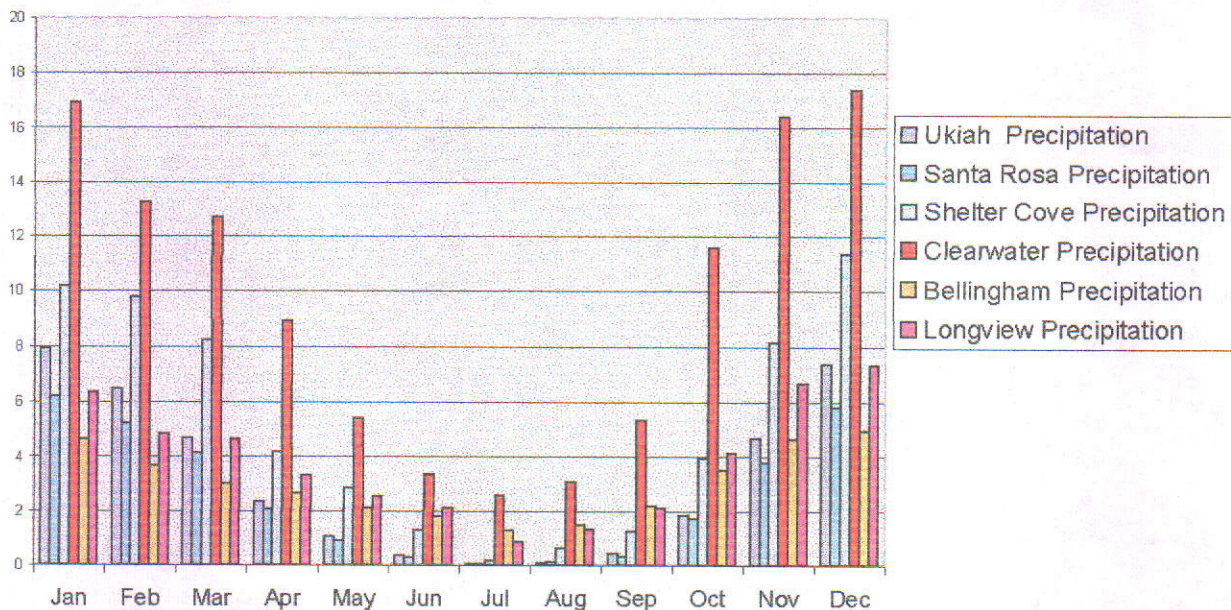
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A reasonably complete explanation of the technical methodology was presented, with slides. After the explanations of the technical underpinnings of the draft policy, a question and comment period started at a bit before 3 PM and lasted until the room needed to be vacated at 5 PM. Some people questioned the methodology, but far more questioned the assumptions, judgment and conclusions encompassed in the draft policy. I'll try to explain the concerns for each area as I understand and recall them.

METHODOLOGY

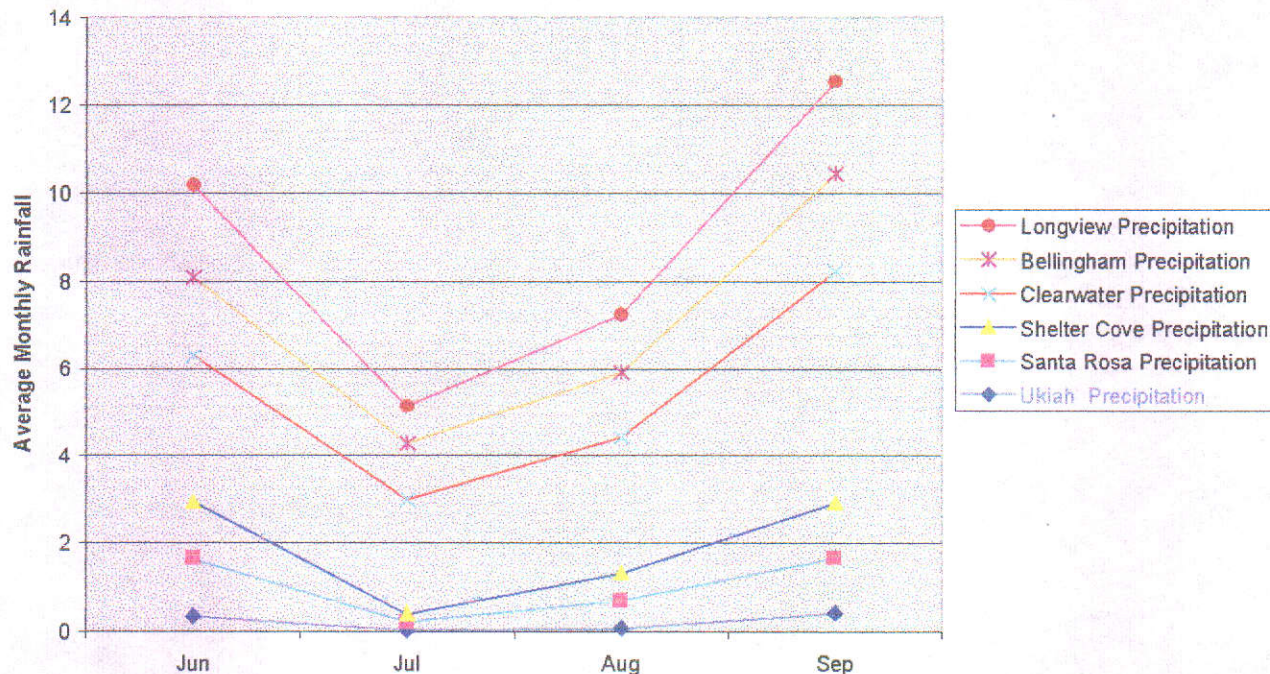
The draft policy was largely based on input by a consulting company from Washington State, and used data and conclusions derived from that company's studies in Washington and other Pacific Northwest states. Agency personnel said the consulting firm believed the conclusions derived from their previous studies were equally applicable in our area. It is true the topography is similar, but because of the significant differences in the vegetation, rainfall amounts, and especially the annual rainfall distribution, it doesn't seem appropriate to use conclusions based on Washington data. These charts show average monthly precipitation in inches from selected (by me) sites in the two areas.

<http://www.wrcc.dri.edu/climsum.html>



The graph shows that our area gets most of our annual rainfall in the winter months, and very little from June through Sept. The next chart shows that we seldom get more than two inches per month from June through September, while Washington seldom gets less than four.

CA vs WA Summer Rainfall



In our area the ground dries significantly during the hot summer months, and nearly all of the rain that falls in October and November gets absorbed, with little or no runoff. On the other hand, Washington appears to get enough summer rainfall, which, combined with dense vegetation and lower temperatures, may keep the ground saturated. If this is the case, then the smaller streams in Washington may receive enough runoff to keep salmonid fry alive. In our area, most small, and many medium sized, creeks dry up entirely, or contain isolated holes, which are quickly cleaned of fry by herons and raccoons. Trapping water in storage ponds will have no effect on this problem, as the problem is the lack of runoff during the summer months. The bypass policy is aimed at preserving the spawning habitat, but will do nothing to increase the survival of the three species of fish, Steelhead, Coho and Chinook, because these fry are destined to die when the creeks dry up. A case may be made that storage ponds actually increase fry survival by capturing excess runoff and, through leakage, will help maintain ground water levels and delay the drying of the creeks.

In the book California's Salmon and Steelhead, edited by Alan Lufkin, and posted on line at <http://content.cdlib.org/xtf/view?docId=ft209nb0qn&brand=eschol> facts about the three fish species are relevant to this discussion. Chinook, "are typically "big river" fish, generally avoiding smaller coastal streams." They "typically migrate to the ocean a few weeks after emergence from the gravel, while less than four inches long." Coho salmon spend a year or more in fresh water before migrating to the ocean in the smolt phase. Since they must "summer over" in native streams, it is important that water temperatures not rise above seventy degrees." As for Steelhead, "Within two months they hatched and then reared for as long as two or three years in their native creeks and rivers before "smolting" into the Pacific Ocean." If these descriptions are accurate, it sounds like the proposed draft policy will have little or no impact on Chinook, because they are only in the larger streams, and have hatched and gone to

sea before any effects of water diversion are felt. If Coho and Steelhead spend a year or more before going to sea, they are not going to survive in the small creeks in the inland watersheds, because of the problems noted in the preceding paragraphs.

QUESTIONABLE ASSUMPTIONS

Many objections were raised by the audience, and most received respectful and clear responses from the presenting staff, and their forthright answers were appreciated, if not embraced by, the audience. Although objections were quite diverse, those I consider most important were:

- Unwarranted assumptions
- Questionable conclusions
- Cost of compliance

SPAWNING vs. REARING

One of the first assumptions which I believe is erroneous is the statement that “Flow (sic) that provide favorable spawning will also protect passage and rearing.” (This assertion appears on page 16 of the Powerpoint presentation, and all page number references herein will refer to the Powerpoint presentation unless otherwise noted.) This would only be true if the streams retained sufficient flow long enough to allow the fry to hatch and move to a stream with a year round flow. For the creeks I’m familiar with, this would not be the case. While isolated holes may contain water even throughout the summer, they are quickly cut off from the river as the water level drops below the level of gravel in the flat areas. These holes are then quickly emptied of fish by herons.

SEDIMENTATION

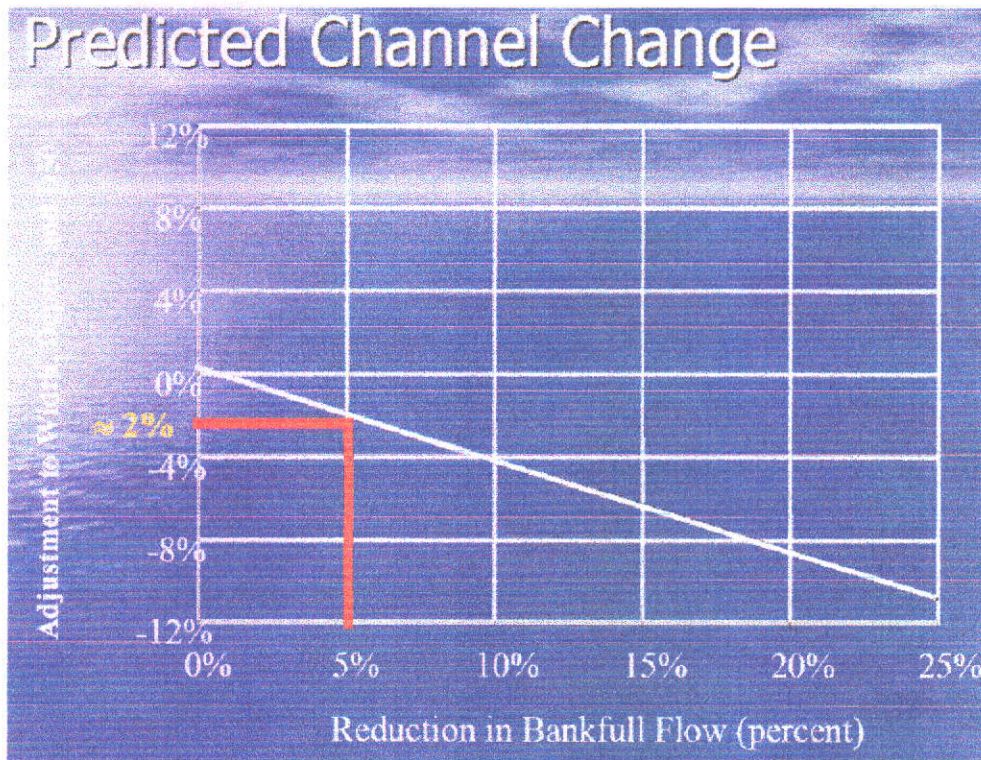
Assumptions and conclusions regarding sedimentation are also questionable and fail to consider unique local conditions.

“California's northern coast is a geologically unstable area. Its rivers, such as the Eel, are unique in that rates of sediment production from their watersheds are greater than those of any other region of comparable size in the country. Because of this, impacts due to diversion of water from this region may be significantly different from those associated with similar projects elsewhere.” (Joel W. Hedgpeth and Nancy Reichard, <http://content.cdlib.org/view?docId=ft209nb0qn&chunk.id=d0e4227>) This statement seems to confirm the inappropriateness of relying on Washington data for California decisions.

On page 6, it is stated that “The cumulative effects of water diversions on instream flows needed for the protection of fish and their habitat shall be considered and minimized.” It is also stated that “Accumulation of sediment in the river would cause spawning gravels and pools used by salmon and steelhead to become choked with fine sediment.” However, in commenting on the restoration of the Steelhead on the Trinity River, Alan Lufkin notes, “A federally financed sediment catchment dam has been approved to reverse some of the damage.” Stock and irrigation ponds capturing runoff allow fine sediments to settle out within the pond, thus aiding the maintenance of good spawning conditions. The draft policy seems to ignore, rather than consider, this beneficial aspect.

HOW MUCH WATER

Perhaps one of the most startling revelations came in answer to the rhetorical question posed on page 29: "How Much Water Can be Diverted Without Adversely Affecting Fish?" The answer? "We don't know." Apparently, the out-of-state consultants admitted that *they didn't know what quantity of water diversion causes a detrimental impact on the fish*, but they were confident that a reduction of 5% did not have a detrimental impact. As I understand it, the following chart shows the effect on the stream channel on the Y (vertical) axis, as a result of varying amounts of water diverted from the stream, on the X-axis. The implication is that a change in the channel ipso facto results in a deleterious effect on fish spawning. While there may be some effect on spawning, there may be no effect on fry survival; a much more important parameter. Rather than attempt to quantify the actual effect of larger diversions, the draft policy is set at the most stringent level, based on the dubious "logic" above.



If one reads the text caption on the Y-axis it is obviously a volume calculation based on the width and depth of the water channel, and a factor labeled "D50" which refers to sediment size. I have called, on 2-14-2008, for clarification on this graph. My initial conclusion is that the amount of water permitted under the draft policy, 5 percent, might double if 10 percent was used, triple at 15 percent, and so on. Because the consultants can't quantify the deleterious effects of greater diversion, they take the tact of allowing a paltry amount, presumably on the premise that no one can fault them for not protecting the fish. The fact that far more water might be made available to the people of the region without necessarily harming the fish doesn't seem to have been considered. Choosing a point on a graph (5%) because the significance of other points on the graph (10%, 15%, etc) have not been evaluated is unconscionable, when the result could cause taxpayers in the affected region literally millions, perhaps hundreds of millions, of dollars.

HOW WILL WE MEASURE SUCCESS

The question was asked, "What constitutes success of the program the draft policy is intended to implement? How will it be measured? How will we know if the massive investment will have made a difference?" The candid answer: "**We don't know.**" The staff explained that there are too many factors involved to be able to measure the effectiveness of the program. On the Russian River, two large dams were constructed, eliminating hundreds of miles of spawning streams. Fish populations plummeted. Now private landowners are being directed to try to remedy the situation by implementing questionable projects, costing unknown millions of dollars, with no way to measure the effect of the program. Surely this is a perfect example of government regulations run amuck

SUGGESTIONS

FISH RESCUE

Fifty years ago, the state had a particularly effective, but very low-tech program of Steelhead enhancement. Teenagers were enlisted to rescue fry trapped in drying creeks, and move them to the river or to headwaters where water for survival was assured. One who participated, Mr. Kieffer from Ukiah, recalls rescuing fifty thousand fry in a single summer. These were wild trout; not hatchery fish. The cost was probably minimum wage for a few people, for a month or two. Can today's hatcheries boast of such success? Resurrecting this program, perhaps with the addition of local rearing ponds, could well be the most effective means of enhancing Steelhead production in the area.

POND SIZE

To better utilize scarce state resources, and to avoid inadvertently criminalizing many residents who have small ponds, the policy should contain a pond size limit. By ignoring ponds with insignificant (to fry survival) storage capacity, enormous compliance costs would be avoided with no impact on fish enhancement. It would also remove some discretion from enforcement personnel, thereby promoting more uniformity in policy application. Determining what constitutes an "insignificant" size could be calculated broadly by looking at such factors as the total annual rainfall and the topography (relief) of the major watersheds. It should not be done by individual property owners, but should be broadly published by the state, or by diverter coalitions within the watershed. Common sense tells me that anything under ten acre-feet would have no impact on fish populations, but regardless of what the final size is, it should be set based on demonstrably fair and logically defensible methods. If pond size was set according to surface area rather than storage volume, the determination could be done quickly and inexpensively by using satellite maps. Of course, an aggregate of storage on each parcel would be needed to preclude someone from skirting regulations by constructing a number of ponds below the minimum size.

OLD PONDS

As I've talked to people about this policy, many are incredulous when I explain that a permit from the state is required in order to capture and store rainwater. I'm sure many ranchers and rural property owners are, even now, not aware that their small duck pond is in violation of state law. For each pond,

the state requires a permit, and collects an annual fee of \$100 for stock ponds and a higher, graduated fee for larger irrigation ponds. With the recent well-publicized concerns about state water shortages, it seems illogical to dissuade property owners from capturing and conserving water. Many of these farm ponds have existed for decades and have their own flourishing diverse ecosystem. No doubt many of these ponds would require major work to comply with the draft policy, and require the expenditure of thousands of dollars. Also, probably many of these ponds have never had permits to store water, and thus have never paid the \$100/year minimum tax.

FIRE CONTROL

If the cost of compliance is too great, will some of these ponds be removed? Many times, Cal-Fire helicopters use these convenient reservoirs as a quick source of water to fight fires. Has the draft policy considered the loss of this resource on fire suppression?

COMPROMISE

To significantly enhance the fish population and greatly reduce the impact on the agricultural sector:

- Reinststate and enhance the summer fish rescue program.
- Drop the bypass requirement until its effectiveness is assured and measurable.
- Grant all existing ponds greater than one acre a storage permit and apply the annual tax.
- Disregard ponds of less than one surface acre.
- Process water permits within a reasonable time.

CULTURAL IMPLICATIONS

When citizens are subjected to a regulatory scheme as poorly crafted as this proposed policy, perhaps the most insidious result is the undermining of the Rule of Law. Unlike most other nations, the foundation of America's greatness is the respect our citizens have for the law. People abide by our laws not because of fear, but because they see them as fair and just. In F.A. Hayek's The Road to Serfdom, "Nothing distinguishes more clearly conditions in a free country from those in a country under arbitrary government than the observance in the former of the great principles known as the Rule of Law." "One could write a history of the decline of the Rule of Law....in terms of the progressive introduction of these vague formulas into legislation and jurisdiction, and of increasing arbitrariness and uncertainty of, and the consequent disrespect for, the law and the judicature." He was writing about the crafting of laws relating to economic planning, but his wording seems particularly poignant and applicable to the proposed regulations, which are being promulgated with a lack of scientific justification, no yardstick for success and no apparent consideration of the costs to society and those who will bear the brunt of the regulations.

Preserving these fish is in the public interest. Restricting what a private property owner can do with his property, argued Supreme Court Justice (1863-1897) Stephen Field, amounts to a "regulatory taking" and requires compensation. By limiting how a person may use his property, as when an owner wants to plant crops, but is prevented from capturing water to irrigate them, the state is preventing the owner from full use and development of his property. In Property and Freedom, Harvard professor Richard Pipes points out that recent Supreme Court cases, (in 1992 and 1994) have affirmed that compensation is

required "...when government regulations prevent the owner from preserving or improving the property." It is apparent that complying with the proposed regulations will require a substantial investment of both time and money, or a restriction on the property's productive capacity. Probably both.

CONCLUSION

With global competition pressuring California agricultural producers to contain costs, adding layers of regulations with no cost/benefit analysis, and with no way to measure the results, seems to be counter-productive in the extreme. Given the State's budget crisis, this is no time to impose a complicated regulatory scheme of questionable value that will be costly for the State to administer and even costlier for agricultural producers to comply with. In addition to the direct cost of compliance, there will likely be reduced agricultural production because of reduced water availability due to the bypass requirements, and also because some/many ponds may be removed if compliance costs are prohibitive. For that land forced out of production because of prohibitive expense, subdivision would likely be an attractive choice. Limiting productivity and forcing higher expenses guarantee reduced tax revenues and job growth from the agricultural sector at a time when the State's need for increased revenue is at its greatest.

The following people have contributed to this paper with constructive comments, corrections and ideas. John McCowen, Tito Sasaki, Carre Brown.