

CALIFORNIA'S WATER MESS

How Did It Go So Wrong and Why it Could Happen Again

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The Mess

Symptoms of California's failed water management abound. Over the past three years water managers reacted too slowly to lower snow and rainfalls. They continued delivering water as usual while groundwater and surface water reserves kept shrinking. Cities put off increased conservation efforts. Some farmers continued planting permanent crops that cannot now be sustained.

The environment suffered the first blows. California salmon are so imperiled that for the second consecutive year all commercial and most recreational fishing is banned. Biologists believe there is a significant chance that all salmon in California will be extinct by the end of this century.

Other non-game fish species are already hovering at crisis levels. The situation is so grave that a federal judge had to step in and impose conditions on Delta exports to prevent final extinction.

The effects of lower precipitation and continued mismanagement are now being felt by water agencies and in some cases water users. The Department of Water Resources has announced it will deliver only 30% of requested amounts to contractors with the State Water Project. The Metropolitan Water District has just reduced allocations to its members by 10%. Some junior water rights holders such as those on the west side of the

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San Joaquin Valley will receive almost no surface water this year from the Central Valley Project.

For some of the water users this year's reduced allocations can be absorbed with relatively little discomfort. However for those farm owners, farm workers and communities on the west side of the San Joaquin Valley the impacts are immediate and severe.

Not surprisingly many of the proposals being put forward continue to treat this as a drought that will end with a return to "normal." Few are considering that these conditions exactly match symptoms of the early onset of climate change which may already be creating a new and drier normal.

How Did it Go So Wrong?

Unreasonable Expectations

The first of two critical failures was holding on to unachievable expectations. Like a chain of dominos these expectations have been consecutively falling. One of the first was Mono Lake – Owens Valley. When constructed those diversions were done with no weight given to environmental and public health considerations. Only when migratory bird populations at Mono Lake were drastically affected and air quality in the Owens Valley was visibly clouded did society go through lengthy processes to rebalance the public trust.

It is worth noting that during that conflict Los Angeles claimed it could not continue as a vibrant metropolis without full diversions from those sources. However the City's subsequent improvement in how it manages its water has allowed its economy and population to keep growing despite the reductions from those two sources.

Another major readjustment in expectations relates to supplies from the Colorado River. Back in 1922 when supplies from the Colorado River were originally divided the participants significantly overestimated how much water was available (even before the early onset of climate change).

As recently as eight years ago the Metropolitan Water District of Southern California was considering spending hundreds of millions of dollars to build facilities to store "excess" Colorado River flows. The recent announcement that Lake Mead will be at the lowest level since 1965 points out what a stranded investment that would have been. Again, when limits were finally recognized resources were reallocated and life moved on.

The San Joaquin River is the next domino in the unreasonable expectation chain. Even before climate change, in nine years out of ten a significant segment of the river has been totally dewatered by diversions. After 18 years of litigation parties have finally agreed to return a small portion of the water to the river to allow restoration of salmon in the second largest tributary to the Bay Delta. And life will go on.

Now on to biggest domino of them all - the Bay Delta Estuary, the largest estuary on the west coast of North, Central and South American. Just how were these expectations created and perpetuated?

When the federal Central Valley Project and the State Water Project were first conceived California's environment was very different. Fish were so plentiful that it was inconceivable to almost everyone that millions of fish could ever be reduced to runs of hundreds or eliminated altogether. The few scientists that raised legitimate concerns did not even get footnotes in planning reports.

But it is not just all about the Delta water exporters. The effects of water diversions in areas of the watershed upstream from the estuary were not understood or were ignored. As the Delta Vision Blue Ribbon Task Force Strategic Plan noted, "Most of the water that historically flowed through the Delta and out the Bay is used in the watershed itself, with relatively small amounts transferred across the Tehachapi Mountains."²

Blocking upstream habitat by dams at the rim of the Sacramento and San Joaquin Valleys and Delta pumping so massive that it reverses rivers began exacting their toll. The injuries also magnified the impacts of other stressors such as invasive species and water contamination.

As the decades passed, the trends were becoming clear to those who chose to look. Historic fish populations were cut in half and then half again. Some events should have been even more alarming to water managers. Extinction of spring run salmon on the San Joaquin River was not just a "step change."

Finally by the early 1990's the impacts were becoming so great that they could no longer be ignored. It got to the point that decisions about pumping from the Delta were being made based on a jury-rigged "green light," "yellow light," "red light" system.

The response at that time was creation of the Bay Delta Accord which morphed into CALFED. The Little Hoover Commission's 2005 report exposed many of the problems of CALFED.³

However even that report missed the fundamental flaw in CALFED – the undefined notion of everyone getting better together. The premise was that by spending large amounts of money (generally other people's money), the ecosystem could recover and exports could be increased. It has been fairly noted that the money did not show up. But even if it had, money is not a substitute for adequate flows.⁴

² Delta Vision Strategic Plan, 2008, figure 1-12, page 35

³ *Still Imperiled, Still Important, The Little Hoover Commission's Review of the CALFED Bay-Delta Program*, (Report #183, November 2005)

⁴ Although sometimes briefly referred to as, "How much water do the fish need" a more complete and accurate description is, What flow regimes – quantity, direction, temperature, turbidity and other water quality parameters - are needed in different locations at different times of the year and in different types of

We have subsequently found through expert testimony that the Delta ecosystem cannot be sustained at the record level of exports that occurred after the CALFED Record of Decision was signed.⁵ When directly informed of the ecosystem crash in 2004 CALFED summarily (and somewhat rudely) dismissed the alarms and took no steps whatever to have pumping reduced. In fact until the federal judge had to step in, exports actually increased.

Lack of Adult Supervision

Simply put, decisions about Delta operations were being made by the water exporters with the preeminent objective of maximizing diversions. Judges have found that to do so the exporters repeatedly violated important state and federal laws.

One of our most important environmental statutes is the California Endangered Species Act. It requires that any state agency which might take (i.e. kill) a listed species is required to apply for a permit from the California Department of Fish and Game.⁶ DFG may grant what is known as a take permit if it finds that the impacts have been minimized and fully mitigated.

The California Department of Water Resources documents that its exports of water from the Delta regularly kill species listed under the State Endangered Species Act. DWR is fully aware of this law. In addition in 2005 the State Senate Committee on Natural Resources and Water had a special hearing to ask DWR about their compliance. DWR made vague references to a “patchwork quilt of compliance.” But it could not provide a copy of any permit

Seeing no compliance an environmental non-profit organization, the California Sports Fishing Protection Alliance, went to court in 2006. When DWR could not provide a permit Judge Frank Roesch issued an order in 2007 prohibiting DWR from exporting water from the Delta. That order is on hold while similar issues are being addressed in companion federal litigation - the “Wanger decision.”

It was in federal court that legal consequences started hitting the exporters. State and federal exporters are subject to the federal Endangered Species Act. In this case DWR and its companion the United States Bureau of Reclamation did request federal ESA coverage which was granted by the United States Fish and Wildlife Service and the National Marine Fisheries Service.

However such approvals by political appointees in those federal agencies were grossly inconsistent with the scientific findings of their own staff who said the pumping was endangering the fish. So once again environmental organizations had to go to court. In that case conservative Judge Oliver Wanger from Fresno found that federal approval of

water years to restore native aquatic species that spend all or a part of their life stages in the Bay Delta Estuary.

⁵ NRDC vs. Kempthorne, Case 1:05-cv-01207-OWW-GSA Document 560 Filed 12/14/2007

⁶ Sections 2081(b) and (c) of the California Endangered Species Act

such injurious pumping to be “unlawful, arbitrary, and capricious. (Doc. 256 at 146.).⁷ He was compelled to order interim changes in export operations until the federal ESA permits could be redone.

Where were the Department of Fish and Game and the State Water Resources Control Board while this was happening?

DFG was fully aware of both the collapse of the fisheries and DWR’s lack of a DFG take permit for DWR to kill the fish. At the 2005 State Senate Committee hearing the DFG Director was unable to answer why they had not required DWR to get a take permit under the California Endangered Species Act.

When the director of Fish and Game and the director of DWR could not agree on how to proceed this issue went to the Governor’s Office. We have no way of knowing exactly what transpired in the “Horseshoe” (as the offices of the Governor’s top staff are known). However we do know that to this day Fish and Game has not pressed DWR to apply for a take permit. Shortly thereafter the director of Fish and Game left state service.

The State Water Resources Control Board has both general responsibilities under the Public Trust Doctrine and specific responsibilities under the Porter-Cologne Act. This spring DWR went to the SWRCB letting them know that their operations of the State Water Project would violate long standing water quality standards in the south Delta.

DWR asked the SWRCB to relax those standards. However midway through that proceeding DWR announced that they had already operated in violation of those standards. The State Water Resources Control Board took no action on those violations.

Follow the Money (and the Power)

How is it possible that DWR can operate outside state laws, permit conditions and legislative direction? The first part of the answer is found in DWR’s funding. More than 90% of the department’s \$6.3 billion dollar budget is “off budget,” derived from operations of the State Water Project. For most of the department’s budget, the legislature is irrelevant and effectively ignored.

This economic power extends to the resources that DWR can expend to advance projects it wishes to pursue. As long as the SWP contractors concur, it can expend funds to hire biological and other consultants to develop materials in support of its projects. Even beyond that, according to the administration DWR does not require legislative approval to construct a project as massive and significant as a peripheral canal – roughly the same size as the Panama Canal.

By contrast the Department of Fish and Game and the State Water Resources Control Board have less than table scraps of funding to monitor compliance and check the

⁷ Case 1:06-cv-00245-OWW-GSA Document 367 Filed 07/18/2008

biological assumptions and conclusions for proposed new projects. To further compound this inequity some of the funds for Fish and Games' monitoring and analyses are provided by DWR. Even indirectly applied, the power of the purse has an effect.

This imbalance has traditionally extended to the power that DWR and the State Water Project can exert. Within both democrat and republican state administrations, Fish and Game and the State Water Resources Control Board have been rolled.

The last time the SWRCB really tried to effectively carry out its responsibilities in the Delta was in the late 1980's and early 1990's when it issued draft Decision 1630 with proposed interim water right terms and conditions to protect the Bay/Delta Estuary. The SWRCB conducted a water right hearing during the summer of 1992.

The water exporters communicated their strong objections to the administration. On April 1, 1993, the Governor requested that the SWRCB cease its work on draft D-1630 and instead work on long-term protections, and the SWRCB concurred. Experience shows that those long term protections never came about (see thoughts below regarding long term protections promised by the Bay Delta Conservation Plan).

Why It Could Happen Again

Appropriately much attention is now being focused on the Bay Delta Estuary. All interests agree that it is broken (although there is significant disagreement on what a "fix" would be). Three major efforts are the Delta Vision process, the Bay Delta Conservation Plan and legislative efforts.

Delta Vision Process

Although there are many good recommendations in the Delta Vision Blue Ribbon Task Force Strategic Plan, its mantra of "two co-equal objectives" (Restore the Delta ecosystem and create a more reliable water supply for California) again ducked the fundamental question of expectations and limitations. This risks the same outcome as CALFED's "we will all get better together."

The closest the Task Force's Strategic Plan came to touching this issue was their statement, "A revitalized Delta ecosystem will require reduced diversion at critical times."

Some of the major water exporters have already stated their expectation that "a more reliable water supply for California" means the same record amounts of exports – or even greater amounts. They, and to some extent Delta Vision, are embracing what is colloquially referred to as a "Big Gulp - Little Sip" export scheme. In times of supposed plenty a large facility would export greater amounts of water. In times with less precipitation the facility would throttle back.

This scheme presupposes two important things. First is that there are sufficient controls exercised so that in drier periods exports are appropriately reduced. The strength of those assurances is questionable when we see a governor readily issuing emergency declarations to override just those types of protections.

Secondly this scheme assumes that there will be some times of greater water surplus. The old belief was that under climate change “dry periods will be drier and wet periods will be wetter.” However there is increasing scientific work indicating that will not be the case.

The study by Columbia University’s Richard Seager reprinted in DWR’s April 2008 report, “California Drought, An Update.” contains his analyses and conclusion,

“Or to put it another way, though wet years will still occur, on average they will be drier than prior wet years while the dry years will be drier than prior dry years.”

<http://www.water.ca.gov/drought/docs/DroughtReport2008.pdf>

A similar finding was also reported in the February, 2009 edition of the New Scientist, “Now new research suggests that the three-year drought in the Golden State may be a consequence of the expanding tropics, which are gradually growing as human emissions of greenhouse gases warm the planet.”

<http://www.newscientist.com/article/dn16516-drought-warning-as-the-tropics-expand.html>

Water management facilities and operations predicated on taking more when it is wetter and less when it is drier will either be significantly less effective or protections against exports in drier periods will again be rolled.

The scientific evidence now shows that if the definition of “create a more reliable water supply for California” means maintaining or increasing record levels of exports, then we are setting California up for yet another failure. And if that happens we will have once again all gotten worse together. Too late we will have learned that maintaining or increasing exports is not an attainable co-equal objective.

Bay Delta Conservation Plan

Virtually everyone would like to see a Habitat Conservation Plan and accompanying Natural Communities Conservation Plan that actually led to restoration of the Delta ecosystem. However the current BDCP process is repeating many of the mistakes that got us to this point in the first place.

First is the decision making process for what will be in the permit applications submitted to the federal and state fishery agencies. Although some non-exporters have seats on the BDCP Steering Committee, its Planning Agreement expressly states that, “However the Parties acknowledge that if consensus about a given matter is not reached in the Steering Committee, the Potential Regulated Entities (the exporters), in consultation with the

Fishery Agencies, will decide how to address the matter and maintain progress in the development of the BDCP.”

http://resources.ca.gov/bdcp/docs/BDCP_Planning_Agreement_revised_3.19.09.pdf

Once again the exporters want to call as many of the shots as possible.

Substantively, BDCP has ignored repeated requests that it identify the flow regimes needed to restore the Delta ecosystem. Instead, the exporters have directed the consultants (who receive a significant portion of their funding from the exporters) to focus their analyses on facilities and operations that would maintain or increase levels of exports.

One of the positive findings in the Delta Vision Strategic Plan is that the problems of the Delta and water supply reliability cannot be solved within the Delta itself. For instance operations of upstream reservoirs affect and are affected by what happens in the Delta. However BDCP has chosen to arbitrarily limit its geographic scope to the legal Delta. Evidently BDCP intends to deal with upstream operations as a dependent variable to be manipulated to achieve their Delta goals.

Similarly BDCP is ignoring any actions in areas upstream or downstream of the Delta that could leave more water in the Delta for its ecosystem restoration. They are explicitly not considering water conservation, water recycling, local storm water capture, floodplain management or groundwater cleanup as conservation measures. These are the same measures that the exporters got thrown out back in 1992 when the SWRCB proposed them in Draft Decision 1630.

Another driver for BDCP decision making is the exporters’ push to get this done under the current gubernatorial administration. As can be seen in the comments below from the Independent Science Board this is causing them to ignore science and cut corners. Unfortunately these false shortcuts are only likely to require work to be redone to acceptable standards.

Although BDCP professes to be engaging Independent Science, the February 2009 Bay Delta Conservation Plan Independent Science Advisors’ Report on Adaptive management was not favorable.

http://resources.ca.gov/bdcp/docs/BDCP_Adaptive_Management_ISA_report_Final.pdf

Just a few of their verbatim excerpts are:

“Far more is known about the Bay-Delta ecosystem than is suggested by the BDCP documents we reviewed. The extensive knowledge base about the Delta should be fully exploited in selecting and designing BDCP actions. The omission of critical knowledge about the functioning of the Bay-Delta ecosystem also indicates the need for more development of the conservation plan itself.”

“Models are extremely valuable for formalizing the link between objectives and proposed conservation measures to clarify how and why each conservation measure is expected to

contribute to objectives. This key element of adaptive management is largely missing from BDCP documents we reviewed.”

“Formal processes for devising actions to maximize learning, and for assimilating new knowledge to provide the feedback that is key to adaptive management, were not discussed in the documents.”

In addition to the problems identified by the Independent Science Panel, one overall engineering question remains unaddressed in BDCP or elsewhere. One of the major reasons proponents cite for a peripheral canal is sea level rise that could render the existing south Delta diversion points useless.

However at least half of the proposed alignment for a peripheral canal would be on land currently below sea level, protected by the same levees that are threatened by sea level rise. Staff of some of the exporters have said that is just an engineering problem that can be dealt with in design and construction. For something as critical and expensive as a peripheral canal that is not good enough.

Legislative Efforts

State Senate and Assembly leaders are doing an admirable job in organizing their members to focus on this issue. There is a growing recognition by them that reliable water supplies and Delta ecosystem restoration can only be accomplished in the context of comprehensive reforms to California’s water management. Many appear to believe that such reforms need to include more effective governance insulated from political pressures. It is refreshing to observe statements that consideration of public funding needs to follow policy reforms.

We all have been around enough to know the devil is in the details, few of which are yet available. However the legislature appears to be putting most of the major issues on the table.

The one significant missing piece is that old bugaboo about expectations. To the extent that they repeat co-equal objectives as the mantra, they risk perpetuating unreasonable expectations on what the Delta can do.

Recommendations

1. **Expectations.** Identify the flow regimes needed to restore and maintain a healthy Delta. This will help California understand how much water can be exported and how much will need to be provided from other sources. That in turn will guide investments in both restoration and water supply reliability.
2. **Governance reforms** need to accomplish the following:

- a. Current and future water operations done in a way that will restore the ecosystem, including use of the precautionary principle
 - b. The process for analyzing and deciding on changes in Delta conveyance needs to be objective and science based, with consideration of all physical and operational alternatives
 - c. Habitat improvement projects are implemented and maintained in a timely way
 - d. Land use, transportation and other decisions affecting the Delta ecosystem actually advance restoration
 - e. Necessary actions in upstream and downstream areas (e.g. conservation, recycling, enforcement of waste and unreasonable use, reduction of contaminated runoff and discharges, etc.) are implemented
 - f. Adaptive management is done correctly (NOT someone else gets theirs now and we [maybe] get ours later)
 - g. Provide sufficient funding and political independence for the State Water Resources Control Board and the Department of Fish and Game to carry out their responsibilities.
 - h. Authorization for significant changes to Delta conveyance needs to be provided by the State legislature, not one or more political appointees.
 - i. At this time we have no recommendations on whether the State Water Project should be split from the Department of Water Resources. As the comments above indicate, whether or not the SWP is a separate entity, it needs adequate oversight and control.
3. Address the Delta in the context of **comprehensive water management reforms**. Specific issues include: increased water conservation, water recycling, local storm water management, floodplain management, water use measurement and reporting, ground water cleanup and management, and reduction of contaminated runoff and discharges. Although this is daunting, we have learned that without these reforms, the Delta cannot be sustained.
 4. **Get any engineering right**. If conveyance changes are made, be sure that they are sustainable with reasonably foreseeable sea level rise.