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I don't believe I need to detail the sorry state of Central Valley fisheries other than to observe that we're experiencing a broad systemic collapse of both pelagic and salmonid fisheries. This hemorrhaging of the biological tapestry has been characterized as death by a thousand cuts. But the major causes are the loss of critical habitat, poor water quality and, most of all, unsustainable water exports – all attributable in varying degrees to the state (SWP) and federal (CVP) projects.

The condition of our fisheries is not a surprise – it has been long predicted and chronicled by knowledgeable experts.

Neither was it inevitable – it could have been prevented had our decision makers simply complied with and enforced long-existing laws.

Among these are:

1. A State Constitution that prevents the waste and unreasonable use of water,
2. A Water Code, buttressed by 150 years of legal precedent, that lays out in great detail how we allocate and reallocate water,
3. A public trust doctrine stretching back to Roman times that protects fisheries and the right to fish,
4. State and federal environmental review acts (NEPA & CEQA),
5. State and federal endangered species acts (ESA & CESA),
6. State and federal water pollution acts (Porter-Cologne & the CWA),
7. A Fish and Game Code that includes 5937 (flows below dams), and streambed alteration permits and prohibitions of pollution (5650).

Imperfect as they are, these laws are sufficient to prevent the implosion of our fisheries. Unfortunately, they've been cast aside in the rush to transfer water from north to south.

As the rim-dams and various hydrologic modifications throughout the watershed were proposed and constructed, we were assured that they would be fully mitigated or would even be beneficial. Of course, the reality is that all of them exacerbated existing conditions – all of them contributed to the decline of our fisheries.

Part of the reason is that, in our hubris, we simply failed to understand the incredible complexity of the estuary and its tributaries. However, much of it is attributable to ulterior motives, backroom deals and blatant lies.

Those who may be tempted by the current sirens song of the Bay-Delta Conservation Plan or Delta Vision need to ponder the lessons – and the consequences - of the projects and the history of the decline of the estuary and its tributaries.

There are myriad reasons why a peripheral canal would be a nightmare for Central Valley fisheries – and I’ll discuss many of them later. But, the first reason is that it would eliminate the principal physical impediment to unrestricted exports: i.e., the limits imposed by requirements to protect the estuary.

With a peripheral canal, exports would only be limited by promises, guarantees and “assurances” that fisheries will be protected. The past tells us that these assurances aren’t worth the paper they’re printed on. If a peripheral canal is built, no one in southern California will give a tinker’s-damn about the Delta.

In just the last year, the State Board refused to enforce Delta salinity standards, issued a secret order contravening D-1641 by allowing the use of the joint point of diversion when requirements were not met. Last month, they almost waived San Joaquin River flow requirements and Delta outflow objectives (bailed out by the rains). And the Governor, in the Emergency Drought Proclamation, just waived CEQA and all water quality and flow standards in the Delta. There are no meaningful assurances when they can be wiped out by the stroke of a pen.

So, for the next twenty minutes, I want to discuss water rights and the history of water allocations and exports. It is a tale of broken promises, deceit and treachery. I apologize if it’s dry and tedious. But, it’s a history that we must understand in order to arrive at an informed perspective.

In California, water belongs to the people. More than a century ago, the California Supreme Court ruled that the rights to water are usufructuary – meaning you can enjoy the advantages of something belonging to another as long as you don’t destroy or injure it.

Individuals have a right to the beneficial use of water – subject to the seniority requirements of the Water Code and as balanced between consumptive needs and the public trust.

For example, riparian rights – the right of those living along streams to divert water – are the most senior and superior water rights in California. The next senior rights are the pre-1914 appropriative rights – water claimed and used prior to 1914. Lastly, are the post-14 appropriative rights, as determined by the seniority requirements of first-in-time-and-use.

The State Water Board only has authority over these post-14 rights. Incredibly, they don’t even know the full extent of riparian and pre-14 rights.

Water exported from the state and federal projects in the South Delta are the most junior water rights in California. Consequently, they’re available only after more senior rights are satisfied and the public trust is balanced.

The writer William Burroughs could have been thinking about California water rights when he observed that a paranoid schizophrenic is simply someone who’s discovered what’s going on.

According to the State Water Board, the mean annual unimpaired or full natural flow (without dams or diversions) in the Delta watershed (waters gathered from north of Redding to south of Fresno) between 1921 and 2003 was 29 MAF (max of 73 MAF in 83). Note: an AF is about a football field one-foot deep)

Yet, the State Water Board has granted some 245 MAF of water rights in the Delta – or almost 8.5 times the annual mean unimpaired flow in the entire watershed.

1. The Central Valley and State Water Projects hold 53% of these water rights totaling about 130 MAF or about 4.5 times the annual mean flow.
2. However, these Delta exports are based upon water rights junior to virtually all other water rights – they are for surplus water - meaning they're available only after more senior rights are satisfied.

The State has promised far, far more water than actually exists. It has passed out water rights like Wall Street passes out bonuses. But, the State can't print water. Instead, they've created a giant Ponzi scheme that makes Bernie Madoff look like a piker. Delivery contracts for Delta water are variable and predicated on surplus water. Perhaps, best compared to sub-prime or variable-rate mortgages.

The tragedy is that people in the south Valley have built their lives and mortgaged their futures around the promises of "paper water" or water that is embezzled from the Public Trust, senior holders and "Counties of Origin: (i.e., senior rights reserved for the future growth of N. California).

*Note: the state that averages about 75-77 million acre-feet of unimpaired runoff, has an average water budget of about 82.5 million acre-feet and diversion and storage rights to over half-a-billion acre-feet.*

You cannot understand the push for a peripheral canal unless you understand that at the heart of the issue is the attempt by junior water rights holders in Southern California to elevate their water rights over the senior rights of those in Northern California.

This train wreck didn't occur overnight.

The California Legislature passed the Central Valley Project Act in 1933 but the bonds didn't sell during Great Depression. Consequently, the federal government assumed control of CVP in 1935, pursuant to the old Rivers and Harbors Act. Initial features authorized construction by the Corps of Engineers but the then Board of Reclamation took over CVP operation and construction in 1937.

Engineers and attorneys in Reclamation advocated for an adjudication of water rights throughout the 1930s (like Walker Young, the Bureau's supervising engineer in Sacramento in 1939). Adjudication is simply a proceeding to correlate water rights to actual water – but it is anything but simple.

They believed adjudication was needed because they didn't believe the CVP had sufficient water rights in the Sacramento Valley. And, this was crucial because the entire Friant project was predicated upon delivering Sacramento River water to the exchange contractors along the San Joaquin River – who held riparian rights.

In 1942, Henry Holsinger, long time chief attorney for the Division of Water Resources and subsequently Chairman of the old State Water Rights Board, authored a report that said that a comprehensive adjudication of water rights on the Sacramento and San Joaquin Rivers was a fundamental necessity.

Mr. Holsinger later reiterated this in testimony before Clair Engle's Congressional Committee hearing in 1951 and emphasized that adjudication of vested rights should have occurred before construction or operation of the projects.

The formal Findings of the 1951 Engle Congressional Committee were:

1. "That for all practical purposes, the developed water supplies of the Sacramento River are overcommitted and oversubscribed."
2. Without adjudication, "The State of California and Bureau of Reclamation officials may create a 'legal Frankenstein,' which would destroy all hope for State control of Central Valley water rights..."
3. It also found that both the state and federal projects were claiming and depending upon the same Feather River water rights.

Legendary water rights attorney Walter M. Gleason, in a 72 page opinion submitted at the request of Senator Stephen Teale, Chairman of the California Senate Interim Committee on Water Projects, during the 1960 consideration of the Burns-Porter Act (Brown Water Bill). He described the consequences of a failure to identify and quantify vested rights and prophetically detailed the likely collapse of the Delta in the absence of adjudication.

The Delta export schemes were based, in Gleason's words, "wholly and entirely in assumptions."

But of course, adjudication never occurred – because decision makers knew that adjudication would doom the projects.

Shasta and Friant Dams and the Madera Canal were completed in 1945. The Tracy pumping plant and Friant-Kern and Delta Mendota canals were completed in 1951. Folsom Dam completed in 1956, Oroville and San Luis in 1967 and Banks Pumping Plant in 1968.

Exports averaged 1 MAF between 1956-59. They increased to 1.8 MAF in the 1960s, 3.67 MAF in the 1970s, 5.1 MAF in the 1980s, dipped slightly in the 1990s to 4.7 MAF because of extended drought but rebounded to more than 6 MAF between 2000 and 2007.

The looming reality was described in DWR Bulletin No. 76 (Delta Water Facilities) in 1960. It states that, after 1981, operation of the SWP and CVP “will necessitate importation of about 5,000,000 acre-feet of water annually to the Delta from north coastal streams...” This water would come from the Klamath, Mad, Van Duzen, Eel and Trinity Rivers.

With the exception of the 52% of Trinity water that is now diverted, **that never happened.** So where did SWP get the water? Well, over the last three-plus decades, it has largely been embezzled from counties-of-origin, riparians and the public trust needs of the Delta.

Fisheries began to inevitably implode. Winter run was finally listed as threatened in 1989 (changed to endangered in 94). Delta smelt listed as threatened in 1993.

In 1978 the State Water Board adopted D-1485 and a water quality control plan. The Board stated that “protection all fishery species in the Delta would require the virtual shutting down of the project export pumps.” In response to environmental lawsuits, Judge Racanelli, in 1986, ruled that D-1485 was inadequate and, in the next year, USEPA notified the Board that the water quality control plan was inadequate under the federal CWA.

What followed was a series of State Board hearings, beginning in 1987 and continuing in 88, 90, 91 and 92. Hundreds of days of contentious evidentiary proceedings led to draft water quality control plans in 88 and 90 that called for major reductions in exports. Political pressure killed them. A modest water quality control plan was adopted in May of 1991 but was subsequently disapproved by EPA for not complying with the CWA.

Time doesn't permit a discussion of the flurry of environmental lawsuits that were brought against EPA, the State Board, DWR and the Bureau throughout this period. CSPA was in the middle of most of these and it was these lawsuits that were pushing the State Board to act.

The closest we came to protecting the Delta was the State Board's draft decision D-1630 that was released in late 1992. It called for numerous measures including a significant reduction in exports. For example, D-1630 called for no reverse flows in Old and Middle Rivers during the first 6 months of the year, a maximum of 1,000 cfs in July and no more than 2,000 cfs the rest of the year. This goes far beyond the requirements in Judge Wanger's ruling or the recent Delta Smelt BiOp.

We secured internal documents from the State Water Contractors that reveal that they believed that D-1630 would have, at best, required a 25-50% reduction in exports and, at worse (DFG recommendations), led to the virtual curtailment of exports.

This series of hearings were the last time the resources agencies (DFG, USFWS and NMFS) truly went to war over the Delta. Since then, they either been conscientious objectors or simply played the role of honorable opposition.

In response to the pleas from exporters, Governor Wilson directed the State Board to withdraw D-1630 in 1993. State Board member Samaniego was not reappointed,

Chairman Maughan retired and Del Piero was left as the lone duck. The Governor led California down the CalFed path – where everyone would get well together. The CalFed MOU was signed in June 1994 and the Bay-Delta Accord was signed that December.

This was also the Great Mistake. A group of environmental organizations secretly signed the Bay-Delta Accords behind the backs of their co-plaintiffs in a lawsuit and then had to audacity to recommend that the attorney who was seeking to continue the lawsuit with the remaining plaintiffs be sanctioned by the Bar. Of course, that legal action (before the most liberal judge in the 9<sup>th</sup> Circuit) was effectively dead. *And all of the issues that the enviros who signed the accords said were indispensable were subsequently dispensed with – and they remained at the table.*

Prompted by an environmental lawsuit, USEPA issued proposed Delta water quality standards in early 04 (included fish doubling provisions). The State Board began another round of hearings leading up to a Water Quality Control Plan that was adopted in 1995. EPA approved the 1995 Plan but there exists a controversy over whether EPA withdrew the federal standards (and fish doubling provisions).

The State Board then proceeded to hold long evidentiary hearings that led to D-1641 in late 1999 that implemented the 1995 water quality control plan. CSPA and numerous parties sued (8 lawsuits) – and lost. CSPA and Audubon were the only parties that partially prevailed in a 2006 appeal; i.e., substitution of lower VAMP flows for the higher San Joaquin spring flows – the court said the Board couldn't eliminate a provision in a water quality plan in the water rights implementation of that plan. Unfortunately, the State Board immediately reinstated VAMP flows in a revision of the 1995 plan.

However, the case contained some marvelous County of Origin language and stated that fish and wildlife beneficial uses were equal to other “beneficial uses” and that Delta watershed beneficial uses were **superior** to export area beneficial uses.

In any case, we all know the 1995 plan in D-1641 implementation are grossly deficient. As exports have risen, fisheries have collapsed. And, as we have learned with the emergency drought proclamation, the Governor can with a stroke of the pen, wipe out all Delta protection standards - including the Vernalis flow objective on the San Joaquin (which are in abeyance pending the completion of VAMP), interior Delta salinity standards, outflow objectives and the inflow/export ratio.

Two other bits of treachery – both involving backroom secret meetings - should be discussed.

First, while CalFed was being launched, DWR and six water agencies secretly signed the Monterey Principles. The agreement was intended to resolve the disputes that erupted over SWP financing and water allocations under the contracts during the drought years of 87-92. It illegally transferred control, and in one case ownership of SWP facilities (Kern Water Bank). It expanded delivery areas, eliminated the urban preference (where cities

suffered less in droughts). But most of all, it represented an end-run around D-1641 and CalFed by increasing the amount of water that could be exported.

Under the agreement, after the Delta is in “balance” (i.e., Delta and Vernalis standards and Table “A” allotments have been met), the rest of the water is Article 21 water: i.e., “surplus.” They’re entitled to all the remaining water they can pump – for free. This explains the substantial increase in exports since 2000 and why storage at Oroville and Shasta were at “1977” record lows last year.

By gaming the system, they were able to export water that didn’t belong to them. They simply out-foxed the State Board and resource agencies (USFWS in its latest BiOp stated that, until recently, they had not realized how much Article 21 water had been exported).

PCL sued over the Monterey Agreement EIR and prevailed on appeal. However, in a puzzling settlement agreement, they inexplicably agreed that DWR could continue operating under the agreement until a new EIR was adopted. A new draft EIR was released and CSPA/CWIN and many other environmental organizations filed extensive comments in May of last year. However, the final EIR has not been released and DWR is in no hurry since it contains the same flaws and will be litigated and, in the meantime, they can continue to operate under the old agreement.

The second little treachery is the Napa agreement. In mid 2003, DWR and the Bureau, along with export water agencies, met secretly in Napa to resolve operational conflicts to spur implementation of some of the elements identified in the CalFed Record of Decision. Among other things, the Agreement included increased pumping at the state pumps, the intertie and SDIP. The OCAP (SWP & CVP Operations Criteria and Plan) was completed in June of 2004 and implements the Napa Agreement

The agencies then bludgeoned US Fish and Wildlife and National Marine Fisheries into issuing “no jeopardy” biological opinions for OCAP. These are the BiOps that were recently found to be illegal by the most conservative judge in the Eastern District.

Perhaps, a third piece of treachery should be added. The 2000 CalFed Record of Decision required the construction of new state-of-the-art fish screens at the project pumps. The State Water Contractors declared that they wouldn’t pay for them. DFG, USFWS and NMFS quietly agreed to ignore the requirement.

CalFed collapsed after the Little Hoover Commission declared it to be a dysfunctional failure. However, the governor was so impressed that he rebirthed it as Delta Vision and the Bay Delta Conservation Plan (HCP) – again promising unsustainable water delivery.

BDCP is essentially a massive water project masquerading as a Habitat Conservation Plan to circumvent the Endangered Species Act. It is the most ambitious and far-reaching HCP ever envisioned in the nation. Its proposed time schedule is absurdly truncated. No significantly scaled HCP has ever been completed within the proposed timeframe, let alone one coupled with a massive hydrologic modification of an estuary.

Both Delta Vision and BDCP are predicated on the belief that there is a win-win scenario: i.e., that export reliability and ecosystem integrity can coexist as equals.

If there is any message I wish to convey, it is that there is not a win-win solution. It is a zero-sum game.

We can either continue to grow non-staple crops on impaired soils in the desert – lands that when irrigated leach toxic concentrations of selenium, boron and other salts back to our waterways – or we can protect the ecosystem, recreational and agricultural values of the Delta. There is simply not enough water to do both.

So, lets talk about this latest scheme to export more water - the peripheral canal.

The governor and hydraulic brotherhood have launched a full-court PR campaign to approve it.

Unfortunately, they haven't provided the specific details – sizing, location, how it would be operated or what mitigation or safeguards might be necessary. Or, who would pay for it. While exporters have suggested they would pay for the actual conveyance, the larger mitigation costs would apparently be borne by the taxpayer.

Although canal proponents have refused to provide a firm project description, they're proceeding with EIR/S scoping. We provided extensive scoping comments last May. There is another round of scoping sessions presently underway and we'll be providing additional comments. But, before this project goes further, they need to provide us with a firm and comprehensive project description.

And they need to provide us with answers to three fundamental questions we've been asking, to no avail, for many years.

1. How much water does the estuary require to maintain ecosystem integrity?
2. How much surplus water is available for export?
3. What are the economic and environmental consequences of various reduced export scenarios?

DWR and the Bureau refused to answer these questions in the Monterey Agreement EIR, the Intertie EIR, the SDIP EIR, ad absurdum. Every time an EIR/S has been challenged because of a failure to answer these questions, plaintiffs have prevailed. But, proponents are caught in a Catch-22. If they answer these questions, the peripheral canal is DOA.

Our best information suggests that the peripheral canal will encompass a thousand foot wide six-foot deep earthen channel along one of several paths in the eastern Delta. Much of it would be below sea level. It would be sized to accommodate 15,000 cfs flows. Of course, proponents claim it would only export at full capacity during certain times in the year.



We believe the canal would be the death of the estuary. It would:

1. Transfer pumping impacts to the last viable salmonid river in the Valley.
2. Eliminate “critical habitat” for species in Suisun Bay and the Sacramento River.
3. Increase the concentration and bioaccumulation of pollutants and add to temperature and dissolved oxygen problems in the Delta.
4. Increase salt-water intrusion thereby reducing yields on hundreds-of-thousands of acres of productive farmland.
5. Reduce the variable salinity in the Delta and expand the range of certain invasive species.
6. Saddle the public with enormous mitigation expenses.
7. Send numerous species into oblivion, and
8. Catapult 10s of thousands of fishing, recreational and agricultural employees into a permanent economic depression.

Before addressing these issues in detail, I want to discuss the report prepared by the Public Policy Institute of California and UC Davis scientists. Canal proponents use this report as justification for the need for a canal.

The report predicted that:

1. Under the present system (or what is known as a “dual conveyance),” there was only a 10-30% likelihood of a viable population of fall-run salmon and only a 5-30% chance of survival of Delta smelt.
2. Whereas, with a peripheral canal, likely survival increased to 20-50% for salmon and 10-40% for Delta smelt.
3. However, likely survival was projected to dramatically increase with no exports (30-60% smelt and 40-80% salmon).

Think about this for a moment. According to the PPIC analysis, there would only be a 20-50% chance of a viable population of salmon and 10-40% chance of a viable population of Delta smelt with a canal. **Are those acceptable percentages? Is anyone seriously entertaining a solution that, at best, gives salmon a 50% chance of survival and Delta smelt less than 40%.**

And what canal proponents and PPIC folks won't tell you is that their analysis is based upon a canal exporting 40% less water than current deliveries (that's in the small print). **Does anyone believe DWR, the Bureau and State Water Contractors are going to accept a peripheral canal that gives them 40% less water?**

They also ignore the fact that the report, using the Calvin model and further refined by Dr. Michael, a professor of economics at University of Pacific, estimates that the economic

consequences to California from ending exports would be **less** than from continuing exports.

The economic costs to farms and cities from eliminating Delta exports are less than from building a peripheral canal (0.25-0.85 vs. 0.4-0.75 billion/yr). That's 2 to 4 hundredths of one percent of the California economy – or 3-6 cents per/person/day.

Eliminating exports would compel us to tap into California's virtual river.

1. As DWR's California Water Plan and reports from NRDC and others show, we have a 7 MAF virtual river of urban conservation and efficiency, recycling and conjunctive use. That's more water than we export.
2. A 2008 report by the Pacific Institute on agricultural water conservation and efficiency estimated that savings of 1.2 MAF from modest crop shifting, 3.4 MAF from smart irrigation scheduling, 1.2 MAF from advanced irrigation management and 0.6 MAF from efficient irrigation technology could be achieved.
3. A 2008 report by the Los Angeles County Economic Development Corporation identified more than 3.5 MAF that could be secured locally without relying on the Delta or additional storage. Indeed, ocean desalination is no more expensive than new surface storage.
4. The bottom line is that the most cost effective and readily available source of new water is efficiency and conservation.

While the PPIC Report examined: 1) a peripheral canal, 2) the present system and through Delta conveyance and 3) a no export scenario; it ignored a reduced export option – something that must be included in any evaluation of alternatives.

The PPIC report paints a doomsday scenario for the Delta – earthquakes and rising sea levels will turn the Delta into an inland sea that threatens the water supply for southern California. I would only observe:

1. All levees have and will fail. Islands can be reclaimed. However, over more than a century, we've never had an earthquake that resulted in levee failure. Could happen. But:
  - a. Levees can be raised and strengthened. Delta levees, in large measure, don't sit on peat soils after 100+ years of soil compaction.
  - b. Major parts of any peripheral canal will be below sea level and its earthen levees would also be susceptible to earthquakes.
  - c. When Jones Tract failed exports were only disrupted for a few days. Southern California has sufficient storage to enable them to survive until salinity stabilizes and repairs are made following a breach of multiple islands.
  - d. If proponents are really concerned about earthquakes, shouldn't they be evacuating Los Angeles and the Bay Area from the certainty of death and destruction?

- e. And, if they're concerned about disruption of water supplies, shouldn't they be aggressively developing the alternate sources they've already identified?
2. Sea level will rise. However, as previously observed, levees can be raised. If sea level rises 5 feet as predicted by the recent Pacific Institute report, it becomes a moot point. Vast areas of the Bay Area and the Central Valley will be under water – including the export pumps and peripheral canal. We'll be looking at a sea wall with locks and fish passage at the Golden Gate.

Prudence would suggest we consider raising and strengthening existing levees and providing nearby materials for prompt repair.

A peripheral canal would simply transfer pumping impacts from the south Delta to the last viable salmonid river in the Valley. Think about it.

1. The South Delta pumps can reverse the tides and cause Old and Middle and the San Joaquin River to flow upstream. Pumps so powerful that they draw fish in the Central Delta to the export facilities. And, we're going to install pumps that can take a third more water on a relatively narrow reach of the Sacramento River where sensitive life stages of listed species are found 12 months a year.
2. Ah, but we're going to screen the new diversion. Really? Why did proponents refuse to pay for new state-of-the-art fish screens to replace the 1950 technology screens as required by the CalFed ROD? There are a number of configurations in the South Delta that would achieve the necessary low approach velocities to protect fish. Contra Costa Water District's Los Vaqueros intake has only taken one Delta smelt since opening in 1997.
3. Since the State Water Contractors refused to pay for the mandated fish screens in the South Delta, who is going to pay the multi-billion dollar cost for new screens on the Sacramento. The general public?

A peripheral canal would eliminate "critical habitat" for species in Suisun Bay and the Sacramento River.

1. As the recent USFWS biological opinion for Delta smelt points out, outflow is critical habitat.
2. Outflow is especially critical in summer and fall; traditionally a time of high exports. Fish that spawn in late winter and spring are rapidly growing during this period and need a productive ecosystem.
3. Suisun Bay is a highly productive ecosystem: water is only about 20 feet deep and the sun reaches deep into the water column.
4. It is critically important for X2 to be in the shallower waters of Suisun Bay and not the deeper Sacramento River during summer/fall period.
5. A peripheral canal would take up to 50-66% of the flow in the Sacramento River, especially during below average years. This would draw salt water upstream on

the Sacramento River bringing X2 closer to the pumps – the worst of all possible conditions for salmon and smelt.

6. Exporters have voiced the opinion that carriage flows, now required for cross Delta conveyance would no longer be necessary. These carriage flows (more than 250 TAF - equivalent to the yield of a new reservoir) are important component of outflow. Elimination of carriage flow requirements would also reduce instream flows during critical periods on virtually every tributary river. 250K
7. Proponents promise extensive new habitat. However, you can't legally exchange existing critical habitat with speculative new habitat that may or may not provide equal habitat values. Habitat creation is frequently problematic and, in any case, new habitat also requires adequate flow to bring nutrients and remove wastes.
8. Resource agency staff has become downright giddy at the prospect of new habitat creation. Massive habitat expansion is going to be massively expensive. Someone is going to have to pay to purchase, develop and maintain it. The past should serve as a cautionary tale.

No one should take a position before we get a comprehensive project description.

A peripheral canal would increase the concentration and bioaccumulation of pollutants and add to temperature and dissolved oxygen problems in the Delta.

1. Changes in hydrology inevitably affect the fate and transport of pollutants. DWR staff acknowledges that a peripheral canal (or for that matter, a though Delta conveyance) will increase residence time in the Eastern and Southern Delta. Increased residence time can increase impacts of bioaccumulative pollutants like mercury, PCBs and selenium. It can magnify temperature and dissolved oxygen problems.
2. For years, we've been urging CalFed and DWR to monitor the full spectrum of pollutants identified as impairing the estuary. They've refused. All of the water quality monitoring and evaluation of project impacts on water quality are in terms of salinity. However, salt is a conservative constituent. As such, it is an inappropriate surrogate for evaluating the fate and transport of dissolved toxic constituents like industrial chemicals, pesticides and metals.
3. Water quantity and water quality are flip sides of the same coin. Reductions of dilution water increase pollutant concentration. Diversion of relatively good quality Sacramento River water around the Delta will increase the concentration of pollutants that enter the Delta from the San Joaquin River.

A peripheral canal would increase salt-water intrusion thereby reducing yields on hundreds-of-thousands of acres of productive farmland.

1. The interior salinity standards in the Delta are set at levels that begin to impair yield of sensitive crops. DWR and the Bureau share responsibility for meeting those standards. They've been violated most of this year, as they were violated

most of last year (last night, EC at Old River was above 1,200 umhos – the standard for this time of year is 1,000 umhos.

2. The State Water Board has consistently refused to enforce salinity standards.
3. We're told that a peripheral canal could possibly cause salinity to increase by 15% or even 20%. Increases in the salinity of irrigation water will inevitably lead to reductions in crop yields.
4. It should be noted that the California Water Code is explicit: water rights permits (timing, quantity, place of use or diversion) cannot be changed if that change will harm existing users. A peripheral canal will require a change in the SWP and CVP points of diversion. Delta farmers hold some of the most senior water rights in the state. Consequently, a peripheral canal would require the gutting of 150 years of water rights law and precedent.

A peripheral canal would reduce the variable salinity in the Delta and expand the range of certain invasive species.

1. A canal would likely expand the habitat for certain invasive species like the Asian clam that has created such havoc in Suisun Bay and the Western Delta. On the other hand, it might penalize other invasive freshwater species. Historically, the Delta had variable salinity. The export projects have reduced that variability. A return to a more natural hydrograph is likely to be beneficial in controlling the impacts from a number of invasive species.

We have decent idea of the problems facing fisheries in the Central Valley. They're outlined in detail in the recent USFWS and NMFS biological opinions. And include:

1. Temperature problems below rim dams and the lack of passage to the habitat above them.
2. Red Bluff Diversion Dam.
3. Operation of the Cross Channel gates.
4. Loss of critical habitat.
5. Deterioration of the food web.
6. Excessive predation around project facilities.
7. Lack of adequate instream flow.
8. Reverse flows in Old and Middle Rivers.
9. Entrainment and the lack of adequate screening.
10. Poor water quality.
11. The list goes on and on.

The question is whether we have the wherewithal and resolve to address them. But one thing we're clear about: the peripheral canal is no solution – it will only exacerbate existing problems and create new ones.

I've briefly touched on how we got here and discussed some but by no means all of the problems of a peripheral canal: including the;

1. Massive failure to comply with and enforce environmental laws and regulations.
2. Historic failures to honor the promises, guarantees and assurances.
3. Over allocation of paper water, failure to adjudicate water rights and the embezzlement of water belonging to senior holders, counties of origin and the public trust.
4. Failures of previous projects to mitigate adverse impacts – they've all made conditions worse.
5. Failure of state and federal agencies to arrest the continued decline of the estuary's ecosystem.
6. Duplicity of project operators; i.e., political pressure and backroom deals.
7. Refusal of canal proponents to provide a comprehensive project description and to evaluate meaningful alternatives.
8. Disingenuousness of the PPIC report, its unrealistic assumptions, flawed nightmare scenario, failure to examine reduce export alternatives and its willingness to accept a 20-50% survival rate for salmon and a 10-40% chance of survival of Delta smelt.
9. Existence of viable and cost effective alternative water supplies.
10. Fact that a no export scenario is the most cost effective solution for California - costing as little as 3 to 6 cents a day per capita.

I've also mentioned some of the enormous impacts of a peripheral canal, including:

1. Transference of export impacts to the last viable salmonid river in the Valley.
2. Elimination of critical habitat and loss of instream flow.
3. Increased water quality impacts.
4. Increased salt-water intrusion leading to reductions in farm yield and expansion of habitat for invasive species.

I guess I'll leave you with the observation that we live in a world of limitations. We can't print water. A choice is going to have to be made over the next few years.

And that choice will be made within the BDCP process, including the EIR/S. It will be made before the State Water Board as they update the Water Quality Control Plan and the implementation plan for the Delta. It will be made as the State Board addresses the recommendations of Delta Vision and BDCP and considers the water rights changes necessary to implement a peripheral canal.

All of us should pressuring the State Water Board to:

1. In the interim, initiate emergency hearings to consider;
  - a. Reducing or curtailing exports,
  - b. Limiting reverse flows,
  - c. Directing DWR and the Bureau to;
    - i. Comply with the ROD's fish screen requirements,
    - ii. Implement a comprehensive contaminate monitoring program,

- iii. Evaluate ecosystem water needs for the Delta, including reduced export scenarios.
2. Enforce water quality standards.
3. In the mid-term, schedule evidentiary hearings addressing unreasonable use, method of diversion and the public trust.
4. For the longer-term, the Board needs to schedule;
  - a. Adjudication for the Sacramento and San Joaquin River Basins, and
  - b. Hearings to establish comprehensive, enforceable instream-flow, water quality and Delta outflow requirements.

The ultimate fate of this estuary will likely be decided in a court of law. But, we cannot escape having to choose.

We're either going to continue to supply prodigious quantities of water to the most junior water rights holders in the desert to irrigate non-staple crops grown on impaired soils that, by design, leach toxic wastes back to our rivers. Or, we're going to reduce or curtail exports and, protect senior water rights, restore the ecosystem integrity and productivity of Northern California waterways and preserve Delta agriculture and recreational values.

We can't do both – the bottom line is that we must choose between the Delta and Westlands.