

May 5, 1998

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CalFed Public Hearing
 University High School
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Subject: March 1998 Draft Programmatic EIS/EIR

On the subject of CalFed's EIS/EIR, I would like to bring to your attention that the major threat to Californian riverine and coastal ecosystem health and sustainability is caused by excessive impoundment of rivers by dams and the subsequent water diversion for human usage. We must remember that Nature has a limit, and work wisely within that framework to serve humankind.

The significance of this threat to the Nation's water quality and resources of coastal ecosystems and their economics and societal infrastructure has not been appropriately recognized or appreciated by CalFed. As a result of dams and diversions, coastal ecosystems have been suffered from immense economic and ecological penalties similar to that documented in the former U.S.S.R. (Rozenfurt and Herz 1981; Rozenfurt, et al. 1985, 1987; Rozenfurt and Haydock 1981, 1991, 1993).

Since the late 1960s in the former U.S.S.R., 30 major and 100s of minor dams on rivers of the Black, Caspian, Azov, and Aral seas' basins have retained 60 to 97% of spring freshwater flux. Subsequently, this impoundment and enormous cumulative losses of over hundreds of millions of acre-feet of runoff have inflicted a mortal blow to habitat and destroyed migration, spawning and nursery grounds of 90-98% of the valuable species of recreational and commercial fish in the southern U.S.S.R. Economic losses for fishery alone have amounted up to \$4 to 5 billion per year with thousands of boats and hundreds of thousands of fishers out of work.

Today, no one in Russia uses the word "restoration." All attempts to restore the fisheries have failed - the current habitats have nothing in common with their teeming past. Within just twenty years, all seas were transformed into "blue deserts."

The Aral Sea has ceased to exist. Salt dust and toxins blown from the sea bottom fell back to earth and destroyed crops for hundreds of miles downwind. Contaminated drinking wells makes the infant mortality in central Asia (Aral Sea watershed) nearly five times the Soviet average - a staggering 10 to 20% of all babies born. (Is this a future threat to the Owens Valley population?)

In general, since the 1970s the southern watersheds of the former U.S.S.R. have symbolized management's staggering ignorance of major Laws of the Universe (thermodynamics) which govern ecosystem sustainability. As a result, the past misguided search for short-term economic gains have not been rectified by an overhaul of the entire system. Unfortunately, California's water management appears to follow the same path of the entire arid and semi-arid southwest "Sunbelt" where burgeoning water development is only slightly less ominous than that in the Black, Azov, and Caspian seas' watersheds (Rozenfurt and Hedgpeth, 1989).

I determined for Russian rivers over twenty years ago, and in the 1980s for the Sacramento - San Joaquin rivers, that when annual water withdrawals exceed 30% (or 50 to 90% of normal spring runoff) then the estuary's natural functioning is largely destroyed or brought to the brink due to enormous cumulative water deficits and watershed desiccations by dams and diversions. Other examples, besides the Sacramento-San Joaquin river delta-San Francisco Bay-coastal ecosystem are: the Snake River/Columbia River and coastal zone; Florida's "Everglades," and Florida, Tampa, and Charlotte bays; some 40 estuaries of the Gulf of Mexico, especially several in Texas; and the Chesapeake Bay (Rozenfurt et al., 1987b; Simenstad et al., 1992; Robinson 1981).

This implies the following summary facts:

- (1) all these systems and the entire Central and South Atlantic and Western Pacific coastal waters have been deprived of over a thousand million acre-feet of runoff vital for their survival;
- (2) the remnants of residual or "regulated" flow often correspond to actual dry or a chronic drought conditions from the perspective of functioning of ecosystems regardless of wetness of the year; and
- (3) progressive entropy (system agony resulting from Second Law of Thermodynamics) is now a permanent feature of human-influenced riverine - deltaic - estuarine- coastal ecosystems' regime.

The cumulative effect of these related processes eventually leads to the demise of the water body itself (for example, the Delta-San Francisco Bay system), the same as we would die from such a constant hemorrhage of our blood. In addition to destroying valuable fisheries, large-scale freshwater diversions have jeopardized the deltaic drinking freshwater intakes themselves due to inexorable increase of brackish or salty water intrusion (Second Law) and made some formerly lush regions uninhabitable to humans (example, Aral sea, Owens Lake, Colorado Delta).

In terms of relative scale, I believe that flow diversions dwarf both wetlands' losses and pollution as threats to the "health" of coastal ecosystems and their living marine resources.

This threat of continued excessive water diversions on the California water resources should be a primary focus of CalFed. However, they have allocated no funds to address this problem and no mention is even made in their studies. [This same lack of recognition is reflected in the EPA's Environmental Monitoring and Assessment Program (EMAP), and in USGS water quality studies.]

I believe that CalFed should therefore be directed to provide the leadership in assessment of limitations in water development as it affects fisheries and other resources. Their immediate task should be to review the full significance of the threat and to formulate plans based on natural sustainability and the environmental, economic, and societal compatibility of water development by different water users. This may halt trends apparent here and already realized in the despoliation of former Soviet Union's estuarine - marine ecosystems. Such work would be invaluable for alternative political, economic and ecological decision-making by California's administration.

I urge you to facilitate a more rational water policy based on the fact that :

- (1) California possesses only 28.5 MAF of normal, unimpaired runoff over a perennial period (averaged over 60 years) in the Sacramento - San Joaquin watershed. This amount determines entirely the survival of the Delta - San Francisco Bay and the State's precious coastal resources;
- (2) Spring runoff, the lifeblood of any water system, has already been reduced to 10 to 30% of what once was around 11 MAF on average;
- (3) Since 1955 the Bay has deprived over 600 MAF of freshwater runoff, and millions of tons of organic and inorganic matter, suspended sediment, oxygen, and etc. left behind the dams and in water conveyance facilities;

According to physics, "No one can get something from nothing." California's water management has already reached NOTHING. Any talk about "Restoration" of the Delta or Bay is a dangerous fallacy! I appreciate this opportunity to comment on CalFed's ambitious but flawed report.

Sincerely,

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