DELTA CAUCUS

CONTRA COSTA - SACRAMENTO - SAN JOAQUIN - SOLANO - YOLO

May 13, 2009

Ms. Delores Brown, Chief
Office of Environmental Compliance
Department of Water Resources
P.O. Box 942836
Sacramento, CA 94236
BDCPcomments@water.ca.gov

Re: Bay Delta Conservation Plan (BDCP) Scoping Comments

Dear Ms. Brown,

In an effort to protect and promote the viability of Delta agriculture, the five Delta County Farm Bureaus; Contra Costa, Sacramento, San Joaquin, Solano and Yolo have joined together to form the Delta Caucus. The Delta Caucus understands and supports the need for water reliability statewide and supports efforts and processes to responsibly plan for California's water future.

Within the framework of the limited information available, the Caucus is concerned the BDCP scoping comments may not be comprehensive or complete. As environmental and conveyance plans are developed, the BDCP must solicit additional comments, especially from Delta interests. However, based upon our knowledge of the BDCP at this time, the Delta Caucus has the following concerns which we have grouped into three categories: fundamental questions, conveyance, and fish recovery efforts.

Fundamental Questions:

1. Has exporting water from the Delta damaged the environment and socio-economic health of the Delta?

2. Will increased reliance and investment to move water from North to South through the Delta institutionalize, perpetuate, and accelerate damage in the Delta?

3. Will species-specific restoration damage the ecosystem and diminish abundance of other sensitive species?

4. Is there enough developed water to support the considerable investment in the Delta being proposed by the BDCP and would that investment be better used to support development of other options such as regional self-reliance?

5. Should Delta conveyance be an interim solution while other viable options to develop a reliable water supply for the State of California are identified and developed?

Conveyance:

1. The EIR must clearly show how each proposed alternative is designed to operate within the multitude of existing legal restrictions, water quality requirements, and contractual constraints such as but not limited to the North Delta Water Agency contract with the State of California, area of origin priorities, and Delta salinity standards. The EIR must include a detailed analysis of all legal constraints on water exports and a thorough explanation detailing how each alternative will comply with them.

2. The EIR must quantify how much Delta outflow is needed to maintain a healthy fresh water Delta (see attached study by Dr. Jeff Hart). This information is critical to determine how much water is available for export, the appropriate size of conveyance facilities, and the overall evaluation of each alternative.

3. The design capacity of proposed conveyance facilities should be determined by the amount of export water available. Each alternative should be developed to reflect the limitation of available water for export.

4. The EIR must explain why the BDCP isolated facility (peripheral canal) is being designed to convey 15,000 cubic feet per second. Do normal river flows justify an isolated facility capable of conveying 15,000 cubic feet per second? How much water will be conveyed "through Delta"? Will smaller capacity isolated facilities be considered? Why build a very expensive, disruptive facility if it is not needed, if it may be used only occasionally, if it could divert substantially all of the Sacramento River summer flow, and if it has the potential to devastate the Delta.

5. The EIR should compare and contrast upstream diversions and their effects on water quality entering the Delta from the Sacramento and San Joaquin Rivers. This information should be used to evaluate the effects of BDCP alternatives which divert water from the Sacramento River before entering or traveling through the Delta.

6. The EIR should examine alternatives in depth to determine if "Through Delta" conveyance is friendlier to the entire Delta ecosystem than removing water from the common pool in the North Delta and conveying it for export in an isolated facility.

7. The Delta Protection Act of 1992 was passed to protect the Primary Zone of the Delta for agriculture, habitat and recreation. The EIR should determine how these Delta resources will be negatively impacted and how alternatives can be designed to be compatible with the Act and its objectives. For example, water from isolated facilities could be piped underground across reclamation districts rather than in surface canals to eliminate negative impacts to drainage, flood control and irrigation systems caused by dividing reclamation districts.

8. The EIR must identify how facilities and changes in river elevations will impact ground water elevations. Plans must be developed to mitigate for seepage and other negative impacts associated with changes in ground water elevation.

9. The EIR must develop governance structures which will protect the Delta environment and its socio-economic interests. Governance structures must be legally required and have the authority to act swiftly to curtail and even stop water exports in order to maintain a healthy fresh water Delta and comply with all water laws, constraints and contracts.

10. Because in the near and intermediate term, water exports must be conveyed through Delta, every effort should be made to make this alternative work for the long term and thus avoid the additional expense and considerable negative impacts of building an isolated facility.

11. The EIR must identify all negative impacts to the Delta economy and ecosystem caused by each of the alternatives, must quantify the cost of the impacts, and must define in detail mitigation actions which will be required. For example, how will the BDCP mitigate for loss of farmland and loss of Swainson's Hawk foraging habitat?

12. The EIR must determine how each conveyance alternative will affect flood control and especially how each alternative will impact flood plains such as the McCormack Williamson Tract, and the Hood-Franklin pool. BDCP projects must not adversely impact flood safety in the Delta.

13. Loss of income to special districts and counties must be considered. A mechanism must be developed to ensure that tax revenue is not lost due to public acquisition of property for conveyance facilities.

Fish Recovery Efforts (Wetlands/Tidal Wetlands/Fish Habitat):

1. The EIR should identify in detail all factors which influence the abundance of targeted fish and only propose those actions which show a strong positive correlation to increased fish abundance.

2. While the adaptive approach might work for small projects, large-scale conversion of agricultural lands should only be based upon sound science linking land conversion to increased fish abundance. Large scale, irreversible experiments should not be conducted and permits should not be issued without sound scientific expectations.

3. Where sound science shows a strong positive correlation between fish abundance and habitat creation, land already owned by the public should be converted first. Eminent domain should not be used to acquire habitat restoration sites.

4. The EIR must analyze the implications of creating wetlands within the borders of reclamation districts. Is it feasible to create wetlands within the borders of reclamation districts where at certain times water is the common enemy? How will flood control, drainage, and irrigation systems be impacted within reclamation districts where fish habitat is created?

5. Redirected impacts caused by moving targeted fish from one area of the Delta to another must be identified and mitigated. For example, if the Delta Smelt population increases due to BDCP projects, water users should not be restricted from pumping water from the channels where this occurs.

6. As with conveyance alternatives, the EIR must identify all negative impacts to the Delta economy and ecosystem caused by water quality changes and conversion of land from agricultural production. It must clearly articulate how the BDCP will mitigate for loss of farmland and habitat such as Swainson's Hawk foraging habitat.

7. The EIR should identify in depth all plant communities and avian and terrestrial species which will be adversely impacted by creation of fish habitat. The analysis should include impacts caused by changes in water quality as well as large-scale conversion of both agricultural and wildlife habitat to fish habitat.

8. The EIR must examine seepage impacts and other changes in ground water elevation caused by creating fish habitat. It must provide detailed and meaningful mitigation when negative impacts restrict owners' use of their property.

9. Loss of income to special districts and counties must be considered. A mechanism must be developed to prevent loss of tax revenue as a result of the creation of wetland/fish habitat.

In conclusion, the Delta Caucus suggests that the BDCP broaden its focus to include more than the Delta. California water reliability for the future should not be dependent on Delta conveyance or circumvention which will likely result in unexpected negative impacts to the Delta ecosystem and socio-economic environment. The water supply for millions of Californians will be more secure and reliable by increasing regional supplies and reducing dependence on the Delta.

Thank you for this opportunity to submit our scoping comments at this time.

Sincerely yours,

Russell van Loben Sels,
Chair, Delta Caucus

Enclosure: California Delta – Estuary (Dr. Jeff Hart)

CC:

Honorable Dianne Feinstein
Honorable Barbara Boxer
Honorable Dan Lungren
Honorable Doris Matsui
Honorable Dave Cox
Honorable Lois Wolk
Honorable Joan Buchanan
Honorable Alyson Huber
Honorable Roger Niello
Honorable Patrica Wiggins
Honorable Dave Cogdill
Honorable Mariko Yamada
Honorable Tom Torlakson
Honorable Bill Berryhill
Honorable Jim Nielson
Mike Chrisman, Secretary of Natural Resources
Karen Scarborough, Natural Resources Agency
Contra Costa County Board of Supervisors
Solano County Board of Supervisors

Sacramento County Board of Supervisors
San Joaquin Board of Supervisors
Yolo County Board of Supervisors
Terry Schulten, County Executive
Paul Hahn, Agency Administrator
Keith DeVore, Sacramento County Department of Water Resources
Contra Costa, Solano, Yolo & San Joaquin County Farm Bureau's
Chris Scheuring, California Farm Bureau Federation

California Delta – Estuary

Comments on Types and Transitions
Jeff Hart, Hart Restoration, Inc.
March 2, 2009

The California Delta is located at the terminus of the Sacramento and San Joaquin Rivers in the Central Valley, immediately east of the San Francisco Bay Estuary complex. The Delta is a relatively young environment, having been formed since the last Ice Age less than 10,000 years ago (Atwater et al. 1979)(Drexler, de Fontaine and Knifong 2007). At the time of European contact, it was a large wetland, but has since been "reclaimed" as a highly productive farming region. The Delta also functions as a conduit for the majority of California!s water supply, as well as providing cultural, recreational, and environmental values, this because of and despite its significant physical and biological transformations. The Delta and nearby San Francisco Estuary have been the focus of various planning and scientific studies. Of scientific and policy interest is the extent to which salt water/brackish conditions extended eastward of the Bay-Estuary and into the Delta in pre-European contact times. For purposes of discussion, the border between the Delta and the Estuary is herein defined as a transition zone encompassing the mid to lower portion of Sherman Island; the Delta is found eastward, the Estuary westward. The following discussion provides an argument for this distinction.

Delta vs. Estuary: What's in a Name? In early history, the Delta was referred to as "swamp and overflow" lands, peatlands, or particular areas were named for its rivers and sloughs. It is not clear when the first usage of word "delta" began; by the 1940!s the term began to be commonly used as a descriptor for this physical setting (Cosby 1941). The application of word estuary finds a cognate in the early Spanish designation "estero" (such as for Drakes Bay, Pt. Reyes region). Early English usage also did not refer to this region as an estuary, but used the term "bay". Modern scientific usage clearly distinguishes between delta and estuary environments (Wikipedia 2009). Deltas are defined as more riverine influenced, where rivers, approaching low gradient environments of lakes, valleys and coasts branch out into a series of distributary channels flanked by sediment-deposited natural levees. Estuaries are extensions of oceans, and are characterized as a mixing zone of fresh and salt water (brackish). Both deltas and estuaries can be tidally influenced. Deltas can come in a variety of shapes: the classic triangle-shaped Nile Delta may be the exception more than the rule. The "inverted" California Delta might seem anomalous, but not unexpected given the tectonically active region on its western flank, which causes the numerous distributary channels to re-unite as a single channel (the broom handle) below Sherman Island where the estuary begins. The classic work of Atwater (1979) clearly distinguished the

Delta from the estuarine and bay environments to the west.

Agriculture and Salt. Atwater (1979) noted the lack of salt in Delta soils. Delta residents, especially agricultural interests, have considered the Delta to have been a freshwater environment. Clearly, agriculture could not have flourished had the Delta been a saltwater or brackish environment. A comparison with Suisun Marsh rereveals a lack of agricultural practices (mostly limited to initial grazing, but soon managed for hunting) compared to the Delta which has had a rich and productive history of farming numerous crops such as grapes, pears, peaches, corn, wheat, potatoes, and alfalfa, to name a few. While scientists working with Suisun Marsh soils have noted distinctive layers of salt, comparable observations have not revealed such restrictions to agricultural practices in the Delta.

Native Plant Species/Relict Habitats. In addition to soil and agricultural evidence, a comparison of native plant species reveals qualitative differences between Delta and Estuary environments; the following discussion follows from Atwater (1979) as well as personal observations. San Francisco Bay supports about 13-14 vascular plant species. About 40 species occur in the Delta. Plants that occur in the Bay are typical salt marsh plants, and few of these occur in the Delta. Typical low elevation salt marsh plants include pickleweed (*Salicornia pacifica*) and cordgrass (*Spartina foliosa*) which inhabit tidal marsh environments. Higher elevation marsh plants include salt grass (*Distichlis spicata*), marsh grindelia (*Grindelia humilis*), alkali heath (*Frankenia grandiffolia*), fleshy Jaumea (*Jaumea carnosa*) and others. Native plants of the pristine Delta include common tule (*Scirpus acutus*), California tule (*Scirpus californicus*) cattails (*Typha* spp.), common reed (*Phragmites communis*), twinberry (*Lonicera involucrata*), dogwood (*Cornus stolonifera*), button bush (*Cephalanthus occidentale*), and several species of willow (*Salix goodddingi*i, *S. lasiolepis, S. lucida*). The plant community of San Pablo Bay, Suisun Marsh, and Carquinez Strait are transitional between San Francisco Bay and the Delta. That is, some plants of the opposite end of the spectrum can be found in the middle estuary: most salt marsh plants of San Francisco Bay, such as Salicornia and Spartina, can be found at Suisun Marsh, but not in the Delta. Some species, such as salt grass and Grindelia, can be found all the way to some Delta locations. But, significantly, some Delta freshwater species of wetland plants such as lady fern (Athyrium filix-femina), mint (Stachys albens), dogwood (Cornus sericea) , twinberry (Lonicera involucrata), button bush (Cephalanthus occidentale), and willows (*Salix lasiolepis, S. lucida*), to name a few, are not found in the Estuary (Carquinez Strait, Suisun Marsh) or points west in San Francisco Bay tidal environments, but are are restricted to remnant in-channel Delta islands east of Brown!s Island and the Sherman Island transition zone. These remnant in-channel islands harbor a relictual, well-rooted flora characteristic of pre-gold rush Delta conditions . Because these species are salt intolerant and would be slow to re- invade a Delta that might have putatively been more estuarine, this flora would have been characteristic of this landscape for at least several hundred years before European contact. Further, abandoned man-made levees in the delta are colonized by a combination of mostly opportunistic alien and native species, but not the full suite of the relic species mentioned above. A fragmentary, incomplete fossil record does exist; Atwater (NO CITED PAGES FOR REPEATED CITATION) stated there to be no known fossil record of the saltwater marsh plants Distichilis or Salicornia remains from the Delta.

Early Observations/Effect of Reclamation. Early explorers generally described the freshwater conditions of the Delta (Thompson 1957). However, salinity levels in the larger estuary environment varied spatially on a yearly and seasonal basis, but within a geographical context. During fall and during periods of drought, it would be expected toward the Delta. Brackish water was noted in Antioch as early as August, 1841, and in the 1860!s and 1870!s (NO CITED PAGES FOR REPEATED CITATION). But Antioch is essentially an estuarine environment below and west of the true Delta. Potential saltwater intrusion upstream into the pre-European contact delta area, however, would likely have been countered by a vast reservoir of freshwater being stored in the Delta wetlands that would have functioned as a natural buffer. This would have been evident before the construction of levees, when the full reservoir effect of the delta would have been in play. The construction of artificially high levees would have cut off this natural supply of within island and floodplain freshwater; likewise, the placement of other water control structures (water diversion canals for irrigation) would have deleted natural floodplain water storage. The effect of these alterations as well as the deepening and widening of channels eventually increased the salt water intrusion. Salt water intrusion became serious in the Delta between 1920 and 1939, and the water was often considered unfit for irrigation. In response, late season irrigations were cut. In 1931, about 70 per cent of the delta channels contained water with 100 or more parts chlorine per 100,000 parts of water; the minimum river discharge was as low as 500 cubic feet per second. Indeed, one rationale for the construction of upriver dams was to mitigate salt water intrusion by the re-introduction of fresh water into the delta (NO CITED PAGES FOR REPEATED CITATION).

Geologic Model For Delta/Estuary Distinction. The botanical/soils/agricultural discontinuity between the eastern Estuary/western Delta necessarily involves an explanation relying proximally on hydrology, and ultimately, on geologic controls. Tectonic uplift of the western end of the Delta (Coast Range, Montezuma Hills) caused for the constriction of the Delta distributary channel system to a single channel (the "broom handle effect"); hydrologically, this functioned as a dam. The Delta islands and immediate floodplains therefore functioned as a large reservoir and watershed, storing water during the winter and spring run-off; and slowly releasing it through the fall, thus buffering salt water intrusion. While periods of more saline conditions might have prevailed downstream in the Estuary, the Delta region would have been buffered by a consistent release of water. This geological control would therefore explain the discontinuity (agriculture/soils/flora) between the SF Estuary and the California Delta.

Recent Paleoecological Studies. To determine historical (Holocene) SF Estuary salt water/freshwater trends, a number of excellent studies recently have been conducted (Goman 2000)(Bryne 2001)(Starratt 2004)(Malamud-Roam et al. 2007). Through core samples of representative native habitat sites and other indirect approaches, scientists have deployed various techniques to assess past conditions: carbon -isotope, diatom, pollen and other fossils, and trends in river flow. These studies have demonstrated trends of hundreds to thousands of years of water quality conditions that reflect broad changes of climate, but not necessarily seasonal variations. In none of these studies have paleoecological data points been gathered in the Delta, however.

Need for More Delta Research. To resolve conflicting views of historic Delta

water quality conditions, we propose continuing the type of research conducted by (Goman 2000)(Bryne 2001)(Malamud-Roam et al. 2007) and others. We would propose collecting core samples from several extant in-channel Delta islands. Most remaining islands are found within the San Joaquin River system (e.g., near Webb least one island in Lindsey Slough and one near Webb Tract would therefore represent conditions of lower water quality than along the Sacramento River.

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