

DELTA PLAN COMMENTS Submitted to the Delta Stewardship Council on 1/11/2013  
by email submission and by US mail, and in person if time allows

24 pages

Submitted by Nicole S. Suard, Esq., Managing Member, Snug Harbor Resorts, LLC  
3356 Snug Harbor Drive, Walnut Grove, CA 95690  
Snug Harbor is a peninsula off Ryer Island, in Solano County, on Steamboat Slough.  
Steamboat Slough is a natural waterway and was one of the original and preferred travel  
routes between San Francisco and Sacramento in 1850.

916-775-1455

Website: <http://www.SnugHarbor.net>

Dear DSC Council,

The next few pages provide references or graphics that help explain the potential negative effects on the Delta if the Delta Plan as written is implemented. In addition, the documents used to review the issues will be found at [http://www.Snugharbor.net/delta\\_water.html](http://www.Snugharbor.net/delta_water.html) and alternatively linked at the <http://www.snugharbor.net> "Delta News" page, by 5:00 PM today and I request that all the documents found at the referenced "delta\_water" page be incorporated by reference. Most of the documents are oversized so are not easily printable.

In summary, it appears to me that many of the impacts that should be recognized are entirely ignored or minimized, to the clear detriment of Delta landowners. After reviewing the history of water planning in California, it is clear to me that the decisions leading up to today's plan were made behind closed doors years ago by persons who had no regard for the water rights of Delta and SF Bay property owners. DWR and its consultants have used false, misleading and confusing data to create a false impression of the Delta. In addition, the tool of silence has been used to divert attention away from important matters like impacts to humans.

The Delta Plan also ignores suggestions by others that might better address the water export and Delta needs. The Delta Plan does not even discuss long term water security issues such as eliminating the above ground canals of the CVP and SWP, which should be put underground to eliminate evaporation and protect from contamination.

I am opposed to the Delta Plan, as written, and the following pages give a few reasons to reconsider what you are planning to subject the citizens of California to if you continue on with the plan.

Respectfully submitted,

*Nicole S. Suard, Esq.*

(By internet submission)

Please note that the comments made regarding the Delta Plan are based on an extensive review of documents found online, along with a personal library of old maps and books. I created a timeline for those who want to review Delta & California water history, noting that many documents produced by state and federal agencies since 1998 seem to attempt to erase documented facts of California history. Some of the wrong maps and data can be found at the “101 Wrong Maps” page at <http://DeltaREvision.com>. The timeline with interactive links can be found at the “Delta News” page at <http://SnugHarbor.net> along with the other documents upon which I base my comments on the Delta Plan.

## DELTA TIMELINE-UPDATED

Last update 11/8/2012 DELTA TIMELINE compiled by N. Suard, Snug Harbor Resorts, LLC on Steamboat Slough, Ryer Island draft		
A REVIEW OF DELTA HISTORY 1840 to 2012 using links to ORIGINAL MAPS and DOCUMENTS of the past 160+ YEARS		
	Data has been compiled to preserve Sacramento San Joaquin Delta history, as many Department of Water Resources documents published in the last 8-10 years have provided both false and misleading information regarding Delta history, flood risk, seismic risk, water exports and ecosystem status. Online references provided as noted below and may also be available by year of publication at <a href="http://deltarevision.com">http://deltarevision.com</a> Many of the historic Delta maps are found at <a href="http://www.deltarevision.com/Delta_maps/Delta_Maps.htm">http://www.deltarevision.com/Delta_maps/Delta_Maps.htm</a> If you don't know about the Sacramento San Joaquin Delta region, here's a short video you might want to see first: <a href="http://www.youtube.com/watch?v=hLmpVV3bq9M">http://www.youtube.com/watch?v=hLmpVV3bq9M</a> or go to	Data compiled by N. Suard, Esq. First Published January 2012 (& often updated) by Snug Harbor Resorts, LLC a peninsula off Ryer Island by Steamboat Slough in the Sacramento San Joaquin Delta region of Northern California.  For Educational uses only. Copyright 2012
DELTA HISTORY AS SHOWN IN DOCUMENTS , BOOKS, MAPS AND RECORDS OF THE PAST		
You might find that true Delta History is different than what DWR and the Delta Plan want you to believe.		
YEAR	EVENTS PROVIDED BY THE REFERENCES USED AND MAY BE SUBJECT TO REVISION	DESCRIPTION
1840s	<a href="http://www.deltarevision.com/2011/historic-timeline/historic_maps/1840delta.jpg">http://www.deltarevision.com/2011/historic-timeline/historic_maps/1840delta.jpg</a> <a href="http://www.deltarevision.com/2011/historic-timeline/historic_maps/1850_mining_districts.jpg">http://www.deltarevision.com/2011/historic-timeline/historic_maps/1850_mining_districts.jpg</a>	John Sutter settled in Sacramento: He considered the proximity of two mighty rivers the American and Sacramento a significant benefit to the fledgling settlement.
1850-1852	<a href="http://www.davidrumsey.com/luna/servlet/view/search?QuickSearchA=QuickSearchA&amp;q=1852+sacramento+river&amp;sort=Pub_List_No_InitialSort%2CPub_Date%2CPub_List_No%2Cseries_No&amp;search=Search">http://www.davidrumsey.com/luna/servlet/view/search?QuickSearchA=QuickSearchA&amp;q=1852+sacramento+river&amp;sort=Pub_List_No_InitialSort%2CPub_Date%2CPub_List_No%2Cseries_No&amp;search=Search</a> <a href="http://www.deltarevision.com/2011/historic-timeline/historic_maps/1852_steamboat-middle_fork_travel.pdf">http://www.deltarevision.com/2011/historic-timeline/historic_maps/1852_steamboat-middle_fork_travel.pdf</a> <a href="http://www.deltarevision.com/2011/historic-timeline/historic_maps/1850map.jpg">http://www.deltarevision.com/2011/historic-timeline/historic_maps/1850map.jpg</a> <a href="http://ccrm.berkeley.edu/resin/pdfs_and_other_docs/background-lit/EarlyReclamationandAbandonmentofDelta.pdf">http://ccrm.berkeley.edu/resin/pdfs_and_other_docs/background-lit/EarlyReclamationandAbandonmentofDelta.pdf</a>	Short video recounting the first official survey of the Sacramento River by Commander Caldwell in 1852: <a href="http://www.youtube.com/watch?v=kSZTiiucq4&amp;feature=mfu_in_order&amp;list=UL">http://www.youtube.com/watch?v=kSZTiiucq4&amp;feature=mfu_in_order&amp;list=UL</a> or <a href="http://snugharbor.net/old_sacramento_river-video.html">http://snugharbor.net/old_sacramento_river-video.html</a>
1853	<a href="http://www.deltarevision.com/2011/historic-timeline/historic_maps/1853_sac_delta.jpg">http://www.deltarevision.com/2011/historic-timeline/historic_maps/1853_sac_delta.jpg</a> <a href="http://www.deltarevision.com/2011/historic-timeline/historic_maps/1853_blake_geology_map.jpg">http://www.deltarevision.com/2011/historic-timeline/historic_maps/1853_blake_geology_map.jpg</a>	Explorations  Geologist Blake map
1854	<a href="http://www.deltarevision.com/2011/historic-timeline/historic_maps/1854_sacramento_river.jpg">http://www.deltarevision.com/2011/historic-timeline/historic_maps/1854_sacramento_river.jpg</a>	Closer look at Rio Vista area

Obviously, the two biggest issues regarding impact to the Delta if the Delta Plan is implemented, (from a marina/landowner perspective) is that saltwater will encroach into the Delta which will result in drinking water wells becoming unuseable in some areas, and lower fresh water flow will eventually result in the silting in of some historic Delta waterways. Higher salinity will also affect the marinas in the area as the cost to maintain docks in brackish water is higher than in fresh water. And the cost to maintain boats in brackish water is also higher. This fact will have a negative financial impact on at least some of the 100+ Delta marinas

[Http://www.deltarevision.com/Delta\\_maps/Water\\_salinity\\_toxins\\_wq.htm](http://www.deltarevision.com/Delta_maps/Water_salinity_toxins_wq.htm)

[http://www.swrcb.ca.gov/rwqcb5/water\\_issues/drinking\\_water\\_policy/salinity\\_conceptual\\_model/salinity\\_conceptual\\_model\\_july2007\\_final.pdf](http://www.swrcb.ca.gov/rwqcb5/water_issues/drinking_water_policy/salinity_conceptual_model/salinity_conceptual_model_july2007_final.pdf)

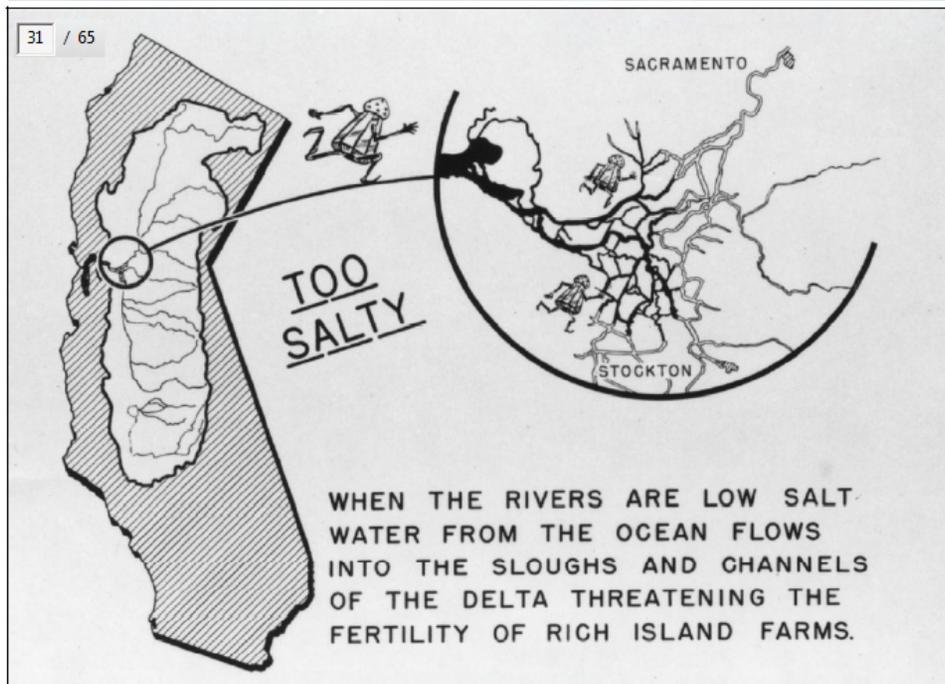


Figure 21: 1945 USBR depiction of Delta salinity intrusion.

At its simplest, the salinity in the Delta can be viewed as the movement of salt from San Francisco Bay into the Delta. Figure 21 is from a 1945 document on the history of the Central Valley project. This early public information piece conveys a basic understanding of salinity in the Delta and one of its effects.

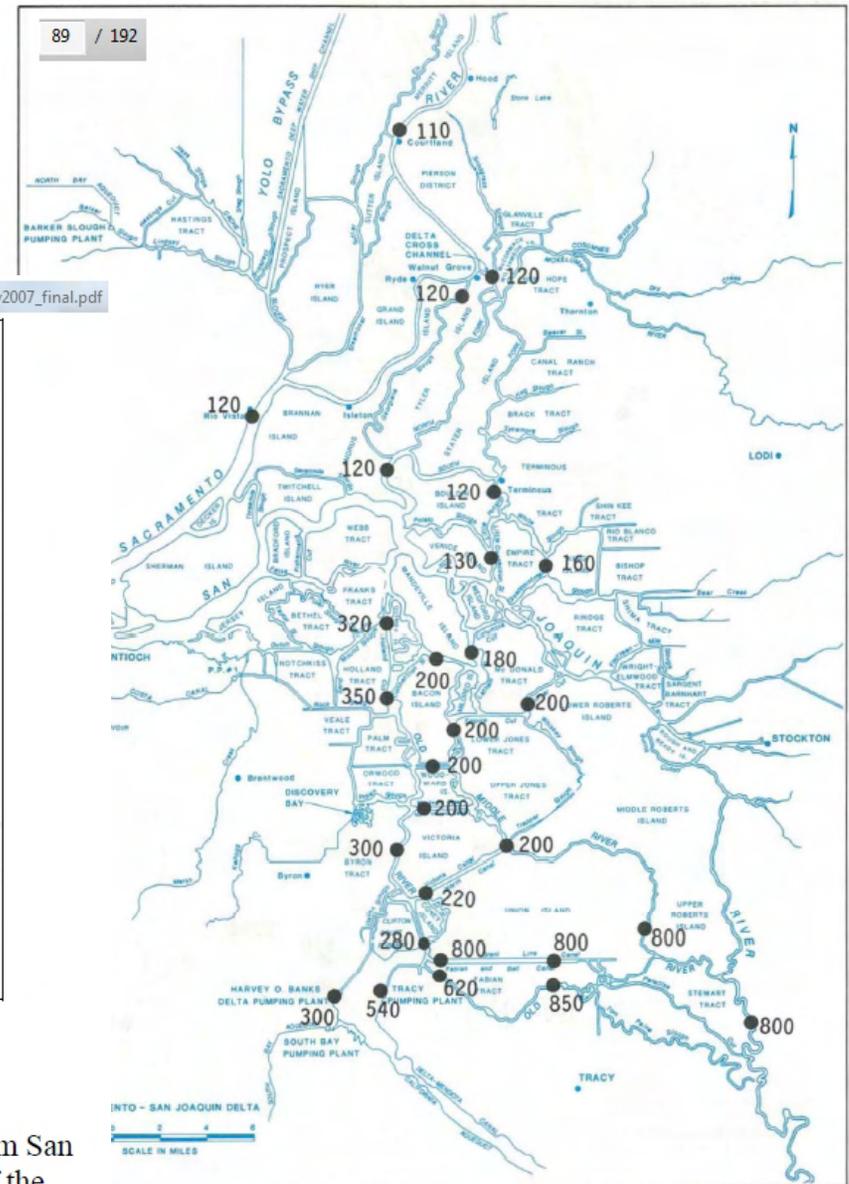


Figure 24. Deltawide EC ( $\mu\text{S}/\text{cm}$ ) July 25, 1989

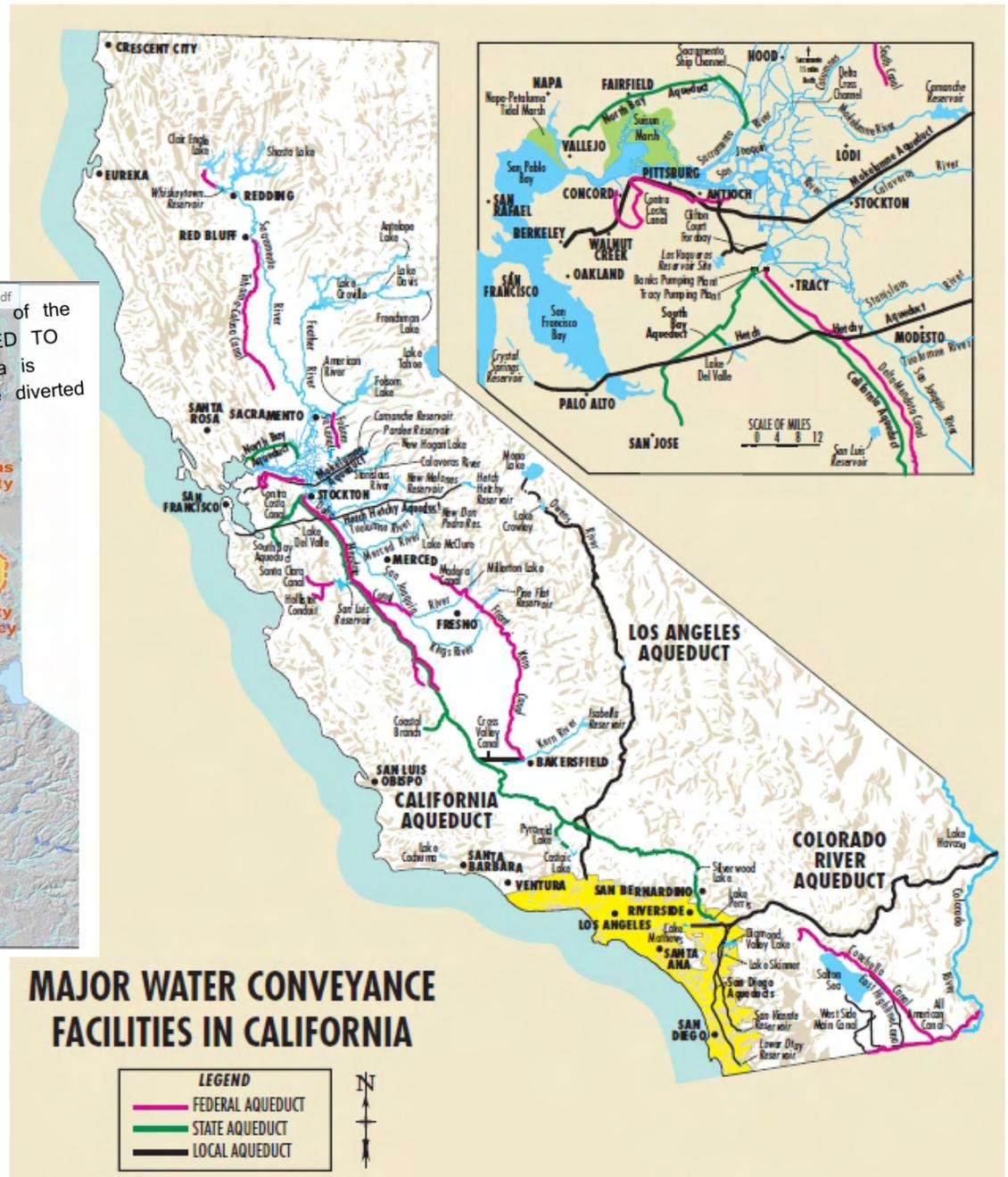
WATER RESOURCES WHITE PAPER

1 Salinity has continued to increase over the past 100 years as additional water has been diverted upstream of  
 2 the Delta and within the Delta. DWR and the U.S. Bureau of Reclamation (Reclamation) model projections  
 3 indicate that salinity intrusion will continue to increase with sea level rise. Currently, the SWRCB is  
 4 working to update salinity requirements in the San Joaquin Valley. The focus of this effort is to reduce  
 5 salinity inflows into the Delta as well as protect south Delta agricultural uses. Salinity from the San Joaquin  
 6 River occurs due to upstream water development (i.e., reduced flows), agricultural land use, irrigation  
 7 return flows, and wastewater discharges (Central Valley Regional Water Quality Control Board, 2003).  
 8 Upstream water development including dams, canals, reservoirs, and diversions reduce the historic flow in  
 9 the river. This also is impacted by seasonal inflows of agricultural return flows, which increase salinity in  
 10 the river. Agricultural practices, subsurface accretions from groundwater, and imported water are sources of  
 11 salinity. Salinity will continue to be an issue in CVP and SWP operations for ecosystem health and  
 12 concentrations for water users.  
 13

The Delta Plan focuses on water quality for aquatic species, and somewhat on minimum requirements needed to meet agricultural needs, and ignores the drinking water rights of residential land owners all over the central and west Delta area, it appears. Instead of providing salinity data using the measurements reported over the last 100 years, or 1 ppt, the “X2” standard is used and the higher 1 ppt standard is ignored. Since the Delta Plan effects analysis does not clearly report the salinity impact, based on the 1 ppt standard, it is safe to assume the impact to drinking water for at least the West Delta is very negative.



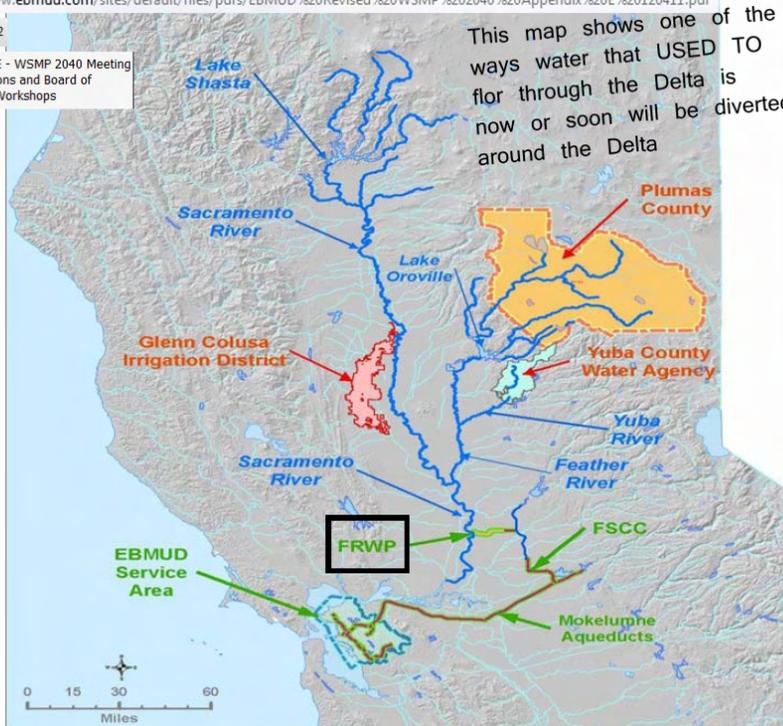
If one looks at the FUNCTION of the different construction projects north of the Delta and around the Delta, it is clear that the modifications to Folsom Dam, the extension of the Folsom South Canal, and the changes to the the Mokelumne Aquaduct combine to create an “East Side” tunnel system that can easily be connected to the CVP/SWP plumbing it crosses in the South Delta. The Delta Plan does not recognize the impact of these already under construction projects when assessing the impact of a 9000 cfs additional conveyance facility



<http://www.ebmud.com/sites/default/files/pdfs/EBMUD%20Revised%20WSMP%20202040%20Appendix%20E%20120411.pdf>

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Appendix E - WSMP 2040 Meeting Presentations and Board of Directors Workshops



This map shows one of the ways water that USED TO flow through the Delta is now or soon will be diverted around the Delta

## 9 New Intakes/Export pumps built or planned since 2003

[Http://www.deltarevision.com/sacramento\\_delta\\_water\\_intakes.html](http://www.deltarevision.com/sacramento_delta_water_intakes.html)

The Delta Plan does not appear to take into account all of the “regional” projects being constructed north of the Delta which result in ADDITIONAL diversion of Sacramento Basin and Sacramento River water before it ever reaches the Delta.

Add up the effects of the new “fish screens”, flood control projects and new intake facilities already built but not operating to capacity, and you will find that there isn't even 9000 cfs of flow left for the Delta in a normal rain year, so why build the tunnels? The water will already have been diverted north of the Delta via the extension of the Folsom South Canal, the Yolo Bypass and the Red Bluff Diversion facility, to name a few.

Maps of projects at [Http://deltarevision.com/2012\\_delta\\_construction.html](http://deltarevision.com/2012_delta_construction.html) and [http://www.deltarevision.com/central\\_conveyance\\_building\\_blocks.htm](http://www.deltarevision.com/central_conveyance_building_blocks.htm)

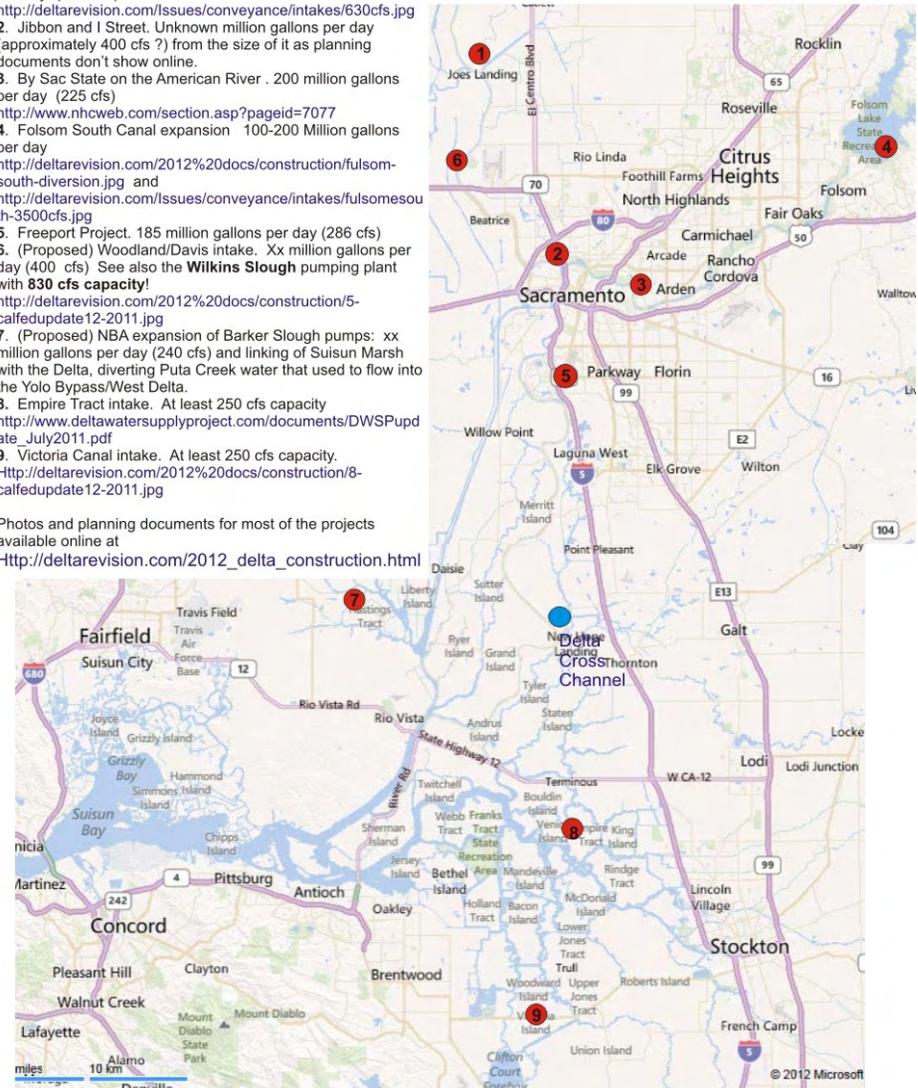
### NINE NEW WATER INTAKES!

To export Sacramento River & San Joaquin River water BUILT OR PLANNED SINCE 2003

1. At Verona along the Garden Highway. 235 million gallons per day (365 Cfs)  
<http://deltarevision.com/Issues/conveyance/intakes/630cfs.jpg>
2. Jibbon and I Street. Unknown million gallons per day (approximately 400 cfs ?) from the size of it as planning documents don't show online.
3. By Sac State on the American River. 200 million gallons per day (225 cfs)  
<http://www.nhcweb.com/section.asp?pageid=7077>
4. Folsom South Canal expansion 100-200 Million gallons per day  
<http://deltarevision.com/2012%20docs/construction/folsom-south-diversion.jpg> and <http://deltarevision.com/Issues/conveyance/intakes/folsomesouth-3500cfs.jpg>
5. Freeport Project. 185 million gallons per day (286 cfs)
6. (Proposed) Woodland/Davis intake. Xx million gallons per day (400 cfs) See also the **Wilkins Slough** pumping plant with **830 cfs capacity!**  
<http://deltarevision.com/2012%20docs/construction/5-calfedupdate12-2011.jpg>
7. (Proposed) NBA expansion of Barker Slough pumps: xx million gallons per day (240 cfs) and linking of Suisun Marsh with the Delta, diverting Puta Creek water that used to flow into the Yolo Bypass/West Delta.
8. Empire Tract intake. At least 250 cfs capacity  
[http://www.deltawatersupplyproject.com/documents/DWSPupdate\\_July2011.pdf](http://www.deltawatersupplyproject.com/documents/DWSPupdate_July2011.pdf)
9. Victoria Canal intake. At least 250 cfs capacity.  
<http://deltarevision.com/2012%20docs/construction/8-calfedupdate12-2011.jpg>

Also proposed: Enlargement of the Delta Cross Channel gates to increase water diversion from the Sacramento River by 1,000 cfs & the North Delta Improvements  
<http://baydeltaoffice.water.ca.gov/ndelta/summaryreport/documents/D>

Photos and planning documents for most of the projects available online at [Http://deltarevision.com/2012\\_delta\\_construction.html](http://deltarevision.com/2012_delta_construction.html)



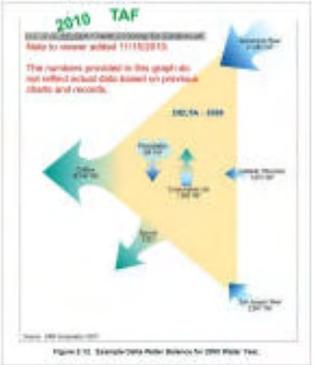
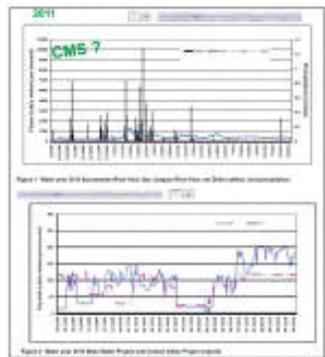
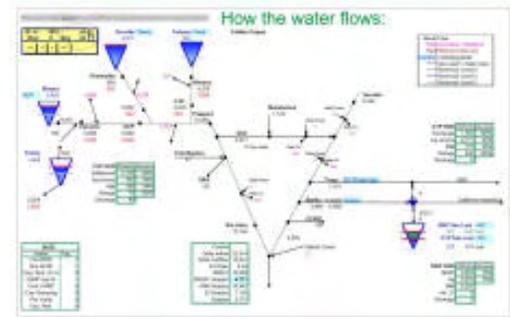
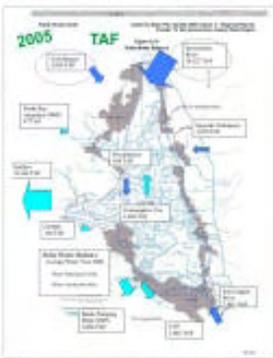
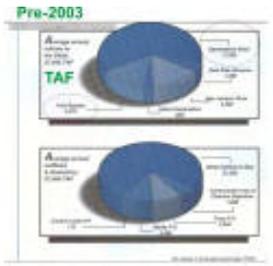
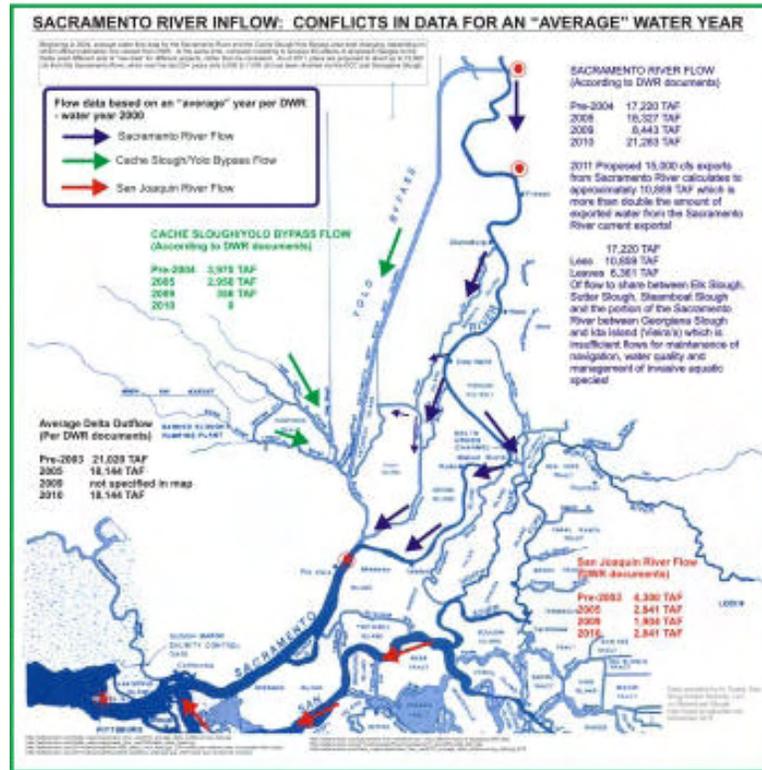
All of the above new water intakes and diversions are IN ADDITION to the water diversions of the Bay Delta Conveyance Plan. Prior to 2000 the Sacramento River averaged 17 million acre feet per year of flow. So where is all this extra diversion going to come from?

Data compiled by Nicky Suard, Esq, Snug Harbor Resorts, LLC on Ryer Island, to help Delta area families find the information about current construction activities in and around the Delta. 4/18/2012

[Http://www.deltarevision.com/sacramento-river-waterflow.html](http://www.deltarevision.com/sacramento-river-waterflow.html)

The maps to the right are from a review I did to understand how much flow is, or is not, on the Sacramento River. What I found is that DWR changed its methods of flow calculations, changed monitoring station levels, shifted between using cfs, maf, taf, and other forms of water measurements, and changed the definition of a “normal water year” and when and how that is counted.

Computer modeling was used to revise flows or to eliminate waterways in studies for planning purposes. Base input into some computer models used may have used incorrect conversion numbers if DWR 2000 to 2003 conversion tables were used. In summary, the varying methods used by the different consultants for DWR, and by DWR itself, served to provide no concrete data unless one reviewed documents printed prior to 1998.



Look at who is funding SFEI and the end goal can be surmised: “Restore” the area to 5,000 years ago so that the waters of the Sacramento and San Joaquin River can be diverted to the Central Valley and more southern areas! Like the Meanderer River and valley in Turkey, the natural waterways will eventually silt in if not dredged, and bay marshes will also get silted in. Which will give open land for the next generation of creative land developers!

Watch the weather news tonight and see which of the above maps look most like the latest news maps of California...

valley (Atwater 1982). The lowering sea-level also exposed previously deposited fine estuarine sediments to erosion, as the vast “inland sea” that engulfed the valley receded.

Beginning approximately 15,000 years ago, a period of climatic warming at the beginning of the Holocene epoch caused glaciers to melt and sea level to rise, forming many of the modern depositional features of today’s Bay-Delta watershed (Fig. 1.4). The sea rose and spread eastward; migrating from the edge of the Farallon Islands (ca. 15,000 B.P.), eastward through the Golden Gate (ca. 10,000 B.P.); through the valleys that became San Francisco Bay; and extended tidal influence through the Delta by around 6,000 B.P. (Atwater et al. 1979, TBI 1998). Sea level rise was fairly rapid (0.8 in/yr/20 mm/yr) early in the Holocene, as opposed to more recent rates over the last several thousand years of about 1-2 mm/yr (0.04-0.08 in/yr; Atwater et al. 1979, Malamud-Roam and Ingram 2004, Brown and Pasternack 2005).

By 4,000 B.P., the San Francisco Bay and Delta resembled the early 1800s extent (West 1977, Atwater et al. 1979, Malamud-Roam et al. 2007). Sedimentation rates caught up with the slowing submergence rate, resulting in thick layers of peat reaching depths of 65 feet (20 m) in the central Delta (Thompson 1957, Atwater et al. 1979). Recent research suggests that rates of peat accretion ranged between 0.03 and 0.49 cm/yr (Drexler et al. 2009a). The inland fringe of the Delta, however, was only recently influenced by tidal processes, with only a thin layer of estuarine sediments less than 3,000 years old and was still greatly influenced by fluvial processes (Brown and Pasternack 2005).

Differences in physical geography and climate resulted in distinct environments within the Delta. Intertidal wetlands, characterized by the accumulation of deep peats. A complex network of waterways wove within the intertidal wetlands, including the main riverine channels of the

17.00 x 11.00 in

http://www.sfei.org/sites/default/files/Delta\_HistoricalEcologyStudy\_SFEI\_ASC\_2012\_lowres.pdf

One Full Page Find

1. OVERVIEW • 9

**15,000 Years Ago**  
(End of last Ice Age -- sea level approximately 400 feet below present level; rivers not shown)

**10,000 Years Ago**  
(Formation of Farallon Islands and intrusion into the “Golden Gate”)

**5,000 Years Ago**  
(Formation of Bay and Delta Basins)

**125 Years Ago**  
(Landward edge of undiked tidal marsh)

**Today**  
(Includes changes due to hydraulic mining sediment deposition, land reclamation, and filling of wetland areas)

**Figure 1.4. The invading estuary.** Holocene transgression of the San Francisco Estuary and current extent of tidal waters as influenced by modern land use. (adapted by San Francisco Estuary Project from Atwater 1979 and Atwater et al. 1979, reprinted in TBI 1998)

Changing upper and lower tree-lines and tree-ring chronologies indicate that conditions became increasingly arid (Malamud-Roam et al. 2006). Also, isotopic compositions from estuary sediments indicate increasing

Impacts to Ryer Island and Steamboat Slough are shown below, per BDCP studies which are supposed to be incorporated as part of the Delta Plan...eventually. Less fresh water flow downstreams will result in more saltwater encroachment potentially, depending on timing and water year.

**EFFECT ON RIO VISTA AND RYER ISLAND FROM A 9000 CFS NORTH DELTA DIVERSION**

On July 25, 2012 the state and federal "water lords" announced that there would be a 9000 cfs diversion of Sacramento River water in the North Delta. What they did not discuss was that the effects on the North Delta would be to reduce freshwater flow in natural or historic waterways like Steamboat Slough and Sutter Slough, if one looks at the 2009 effects analysis from the BDCP January presentation.

Here are some screen prints from the BDCP presentation that summarize the diversion and effect on Steamboat Slough fresh water outflow:

*Note: In 2009, the plan modeled was to build twin 33' tunnels to convey 15,000 cfs. In 2012, the plan as proposed is to build twin 33' tunnels to convey 9,000 cfs. In other words, the capacity plan is for 15,000 cfs, but for now lets just talk about 9,000 cfs. Also note there was no mention of stopping the existing exports. Does that mean by pulling water both north and south the reverse flows will be corrected?*

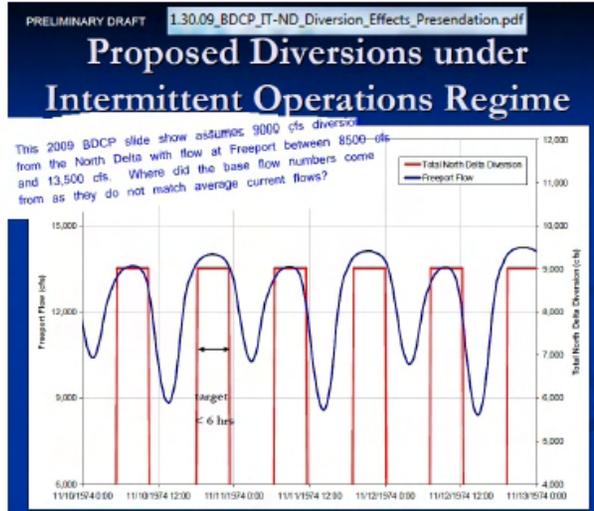
**Projected impacts to Steamboat Slough properties:**

1. Silting in of the waterway, requiring dredging of entire length and also the coves or marinas.
2. Higher salinity could cause deterioration of marina floating docks, which were constructed for fresh water use: saltier water creates erosion issues, and can bring in barnacles or other brackish marine pests for docks.
3. Unnatural or exaggerated high and low tides, as experimented with in 2011-2012, causes excessive damage to levees and lands along the waterway, causing considerable extra costs to businesses and residential lots along the slough.
4. Possible loss of natural vegetation along banks, and loss of landscape vegetation of businesses and residents along slough.
5. Violation of riparian water rights for that time of year when water quality is degraded to higher EC levels.

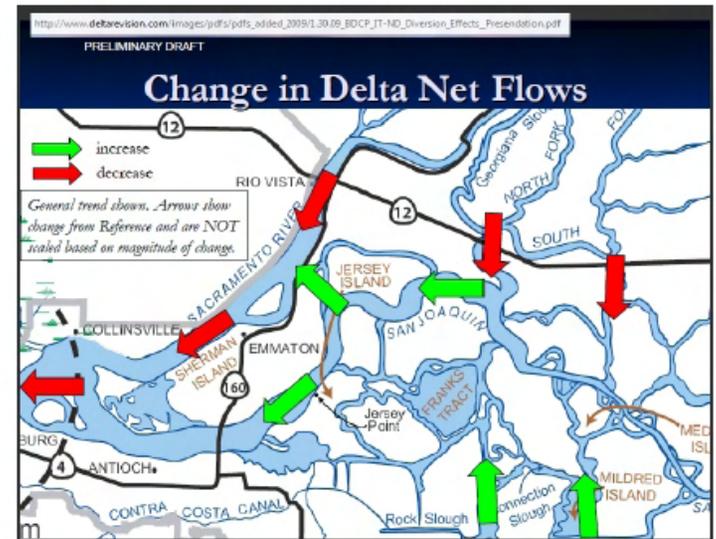
On the other hand, per a CCWD presentation, one way to treat *egeria densa* is to expose it to higher EC water for 6 months of the year

Data compiled by N. Suard, Esq. Snug Harbor Resorts, LLC 7/31/2012

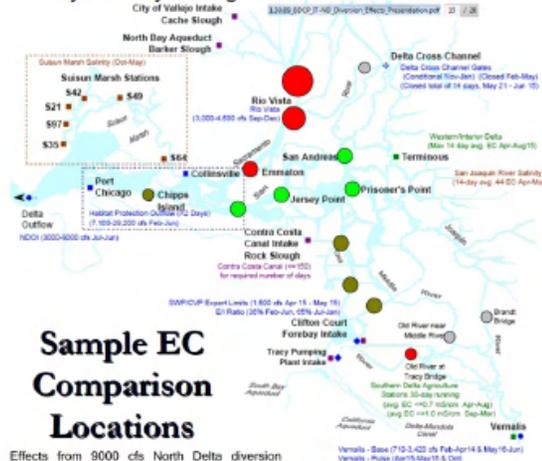
**1. 9000 cfs diverted from Sacramento River in North Delta**



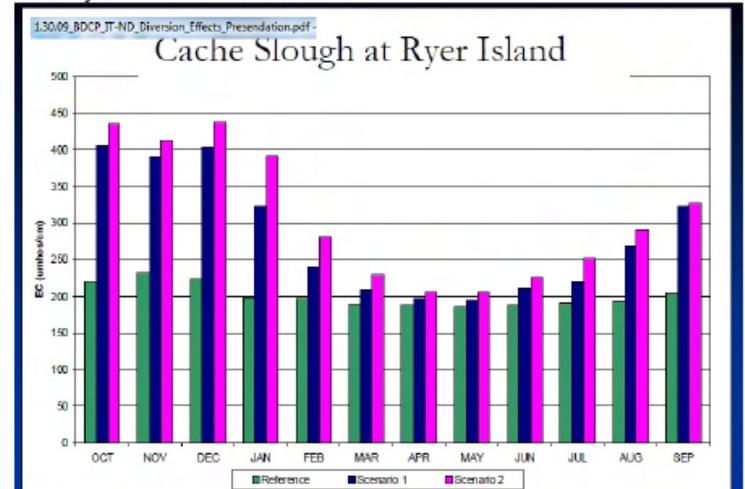
**2. Reduces Flow on Steamboat Slough, Sacramento River, Georgiana, and the Mokelumne, assuming the DCC is closed**

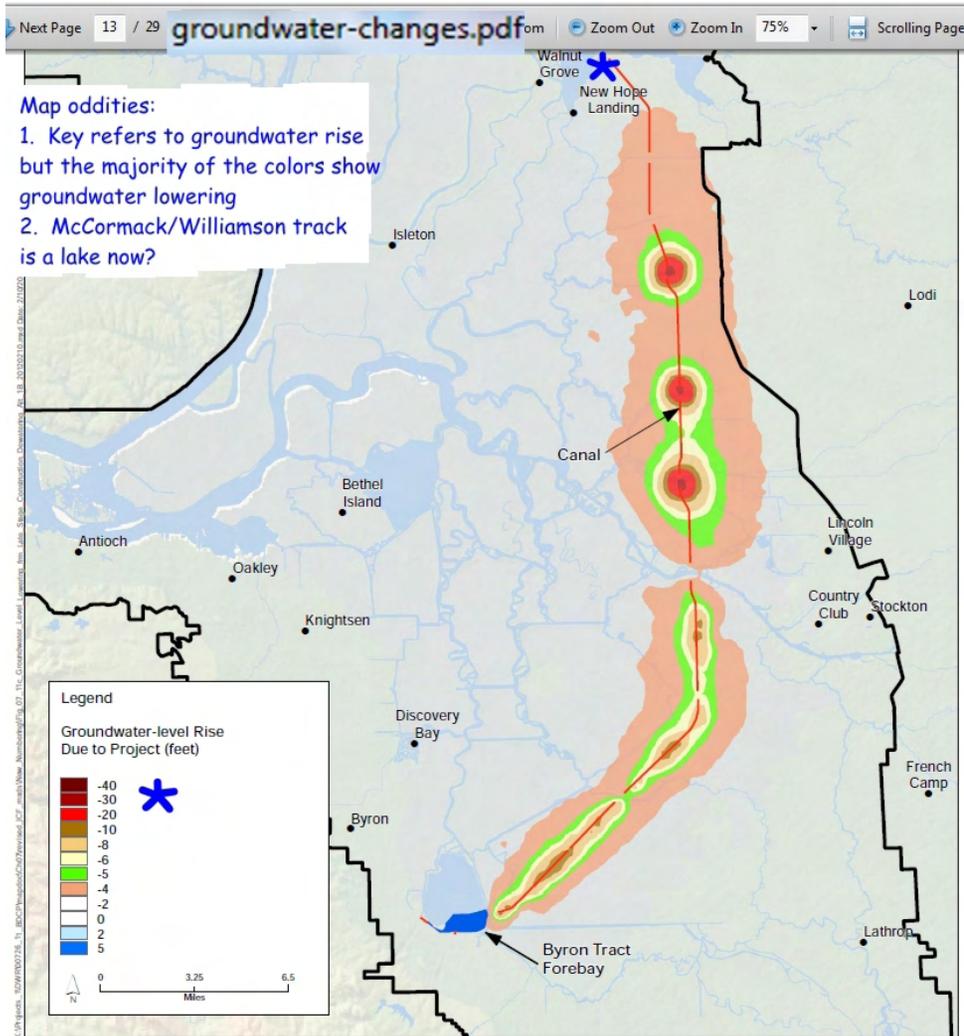


**3. Increase of salinity projected for Rio Vista and Ryer Island area...perhaps ALSO amplified by "hydraulically linking" Suisun Marsh waters?**



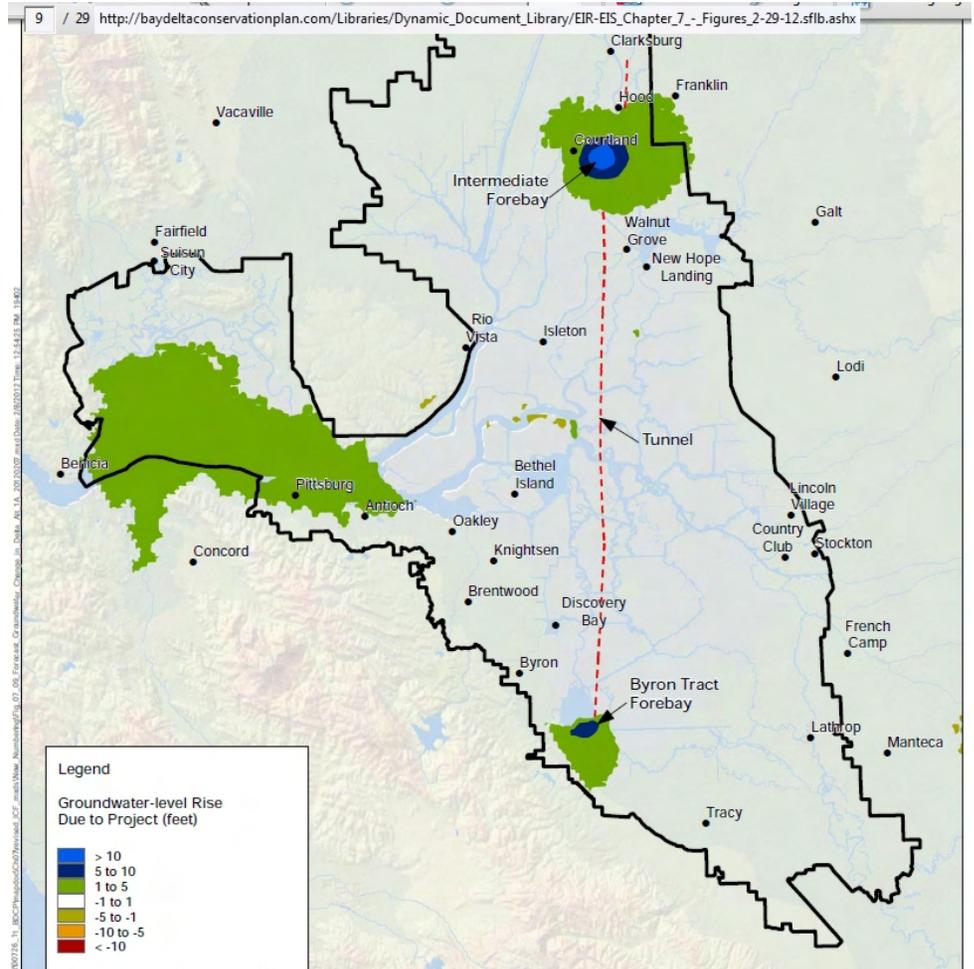
**4. October through January, at a minimum, salinity will increase in the North Delta by as much as 40% to 50%!**





The Delta Plan if implemented will result in a substantial reduction of water flow into the Delta. This will reduce not just the surface water quality but also the water tables. This could negatively impact shallow drinking water wells in the area and this issue is not addressed adequately.

Depending on the location of the chunnel, for some lands, the water table could raise which would negatively impact the septic systems. All farms, ranches, residents and businesses outside of the little Delta towns rely on septic systems and wells for their basic facilities.



Groundwater overdraft is an issue that will affect not just Delta area lands but all of the lower Sacramento River Basin and SF Bay counties over time. The Delta Plan ignores the common sense concept that if the water is diverted to other uses, it will not be available to replenish the aquifer and farmers and cities will begin to pull too much water out.

A current impact example might be the situation in the East side of Napa County, where many wells have gone dry or now have bad drinking water. The wells started to go dry at the same time as DWR started allowing **additional** exports to SoCal and Central Valley corporate farms from the Delta. Solano County and Napa County have had to incur increased costs to deal with the reduced aquifer tables, and those costs should be borne by the water exporters, not the land owners whose water rights are being piped away.

[http://www.water.ca.gov/pubs/groundwater/bulletin\\_118/california's\\_groundwater\\_bulletin\\_118\\_-\\_update\\_2003\\_/bulletin118\\_entire.pdf](http://www.water.ca.gov/pubs/groundwater/bulletin_118/california's_groundwater_bulletin_118_-_update_2003_/bulletin118_entire.pdf)

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### Box C What about Overdraft?

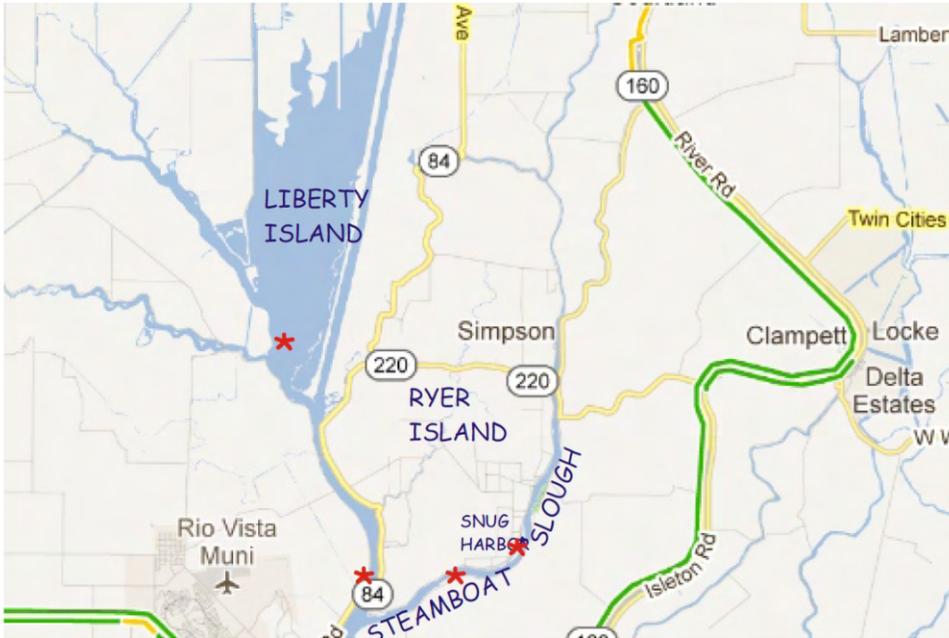
Overdraft is the condition of a groundwater basin in which the amount of water withdrawn by pumping over the long term exceeds the amount of water that recharges the basin. Overdraft is characterized by groundwater levels that decline over a period of years and never fully recover, even in wet years. Overdraft can lead to increased extraction costs, land subsidence, water quality degradation, and environmental impacts.

The California Water Plan Update, Bulletin 160-98 (DWR 1998) estimated that groundwater overdraft in California in 1995 was nearly 1.5 million acre-feet annually, with most of the overdraft occurring in the Tulare Lake, San Joaquin River, and Central Coast hydrologic regions. The regional and statewide estimates of overdraft are currently being revised for the 2003 update of Bulletin 160. While these estimates are useful from a regional and statewide planning perspective, the basin water budgets calculated for this update of Bulletin 118 clearly indicate that information is insufficient in many basins to quantify overdraft that has occurred, project future impacts on groundwater in storage, and effectively manage groundwater. Further technical discussion of overdraft is provided in Chapter 6 of this bulletin.

When DWR and other agencies involved in groundwater began to collect data in the first half of the 20th century, it quickly became evident that there were insufficient funds to install an adequate number of monitoring wells to accurately determine changes in the condition of groundwater basins. Consequently, to create a serviceable monitoring network, the agencies asked owners of irrigation or domestic wells for permission to measure water levels and to a lesser extent to monitor water quality. These have been called “wells of opportunity.” In many areas, this approach has led to a network of wells that provide adequate information to gain a general understanding of conditions in the subsurface and to track changes through time. In some areas, groundwater studies were conducted and often included the construction of a monitoring well network. These studies have gradually contributed to a more detailed understanding of some of California’s groundwater basins, particularly the most heavily developed basins.

Given the combination of monitoring wells of opportunity and dedicated monitoring wells, it might be assumed that an adequate monitoring network in California will eventually accumulate. However, several factors contribute to reducing the effectiveness of the monitoring network for data collection and evaluation: (1) The funding for data programs in many agencies, which was generally insufficient in the first place, has been reduced significantly. (2) When private properties change ownership, some new owners rescind

## A REVIEW OF "RESTORATION" PROJECTS & INVASIVE SPECIES EFFECTS



January 1 2006 was another example of high water at the peninsula which was caused by the backup of flows from the Yolo Bypass.

It is unknown if the planned annual flooding of the Yolo Bypass will result in annual backup onto the peninsula.

There is no doubt that the flooding of the Yolo Bypass will result in sediment deposits at the growing tule beds at the confluence of Steamboat Slough, Cache Slough and the Sacramento River. The Delta Plan and BDCP do not address or acknowledge the impacts to these natural and historic waterways.

The map above shows locations of "restoration" work that is already ongoing on Steamboat Slough, lower Sacramento River and on Cache Slough. Bank shelves were added and tules were planted. The tules capture sediment in the winter flows, which raise the bed of the river in the area of the tules, causing that part of the river to silt in further. The two restoration projects south of Snug Harbor, combined with occasional very high flows on Cache Slough, have resulted in a substantial increase in high water incidents for the properties located waterfront on Steamboat Slough. This increases maintenance costs, damages septic systems, threatens the levees of Steamboat Slough. For example, the peninsula known as "Snug Harbor" since the 1960's has residents who have kept records of the high water events over the years. High water means river water came onto the road called Snug Harbor Drive which runs down the center of the peninsula. It is not rushing water, but rising water, like filling a bathtub, as the water backs up into Steamboat Slough from Cache Slough.

Local records show that the peninsula experienced high water about once every 10 years and only at peak rain & flow years. Since 1998 and the experiments on the Yolo Bypass started, we have had high water every 2.8 years, and in several of those years, two times. DWR and other agencies conducting the Yolo Bypass studies simply ignore this impact and do not compensate for the extra costs to property owners

