

OR87 Nicole Suard

Response to comment OR87-1

Comment noted.

From: sunshine@snugharbor.net
To: comments_EIR@DeltaCouncil
Subject: Comments regarding the Delta Plan, with attachments
Date: Thursday, January 26, 2012 12:28:49 PM
Attachments: [Part_1.pdf](#)
[Part_2-draft1.pdf](#)
[ATTACHMENT A.pdf](#)
[ATTACHMENT B.pdf](#)
[ATTACHMENT-B-2.pdf](#)
[ATTACHMENT-B-3.pdf](#)
[ATTACHMENT-B-4.pdf](#)
[ATTACHMENT-B-5.pdf](#)
[ATTACHMENT-B-6.pdf](#)

Please accept the attached comments to the Delta Plan and the attachments incorporated by reference to my comments. Note that my comments are split into Part 1 and Part 2, and that Part 2 is in draft form, with active links to the references to be added in the final form.

Please confirm that you received Part 1 and Part 2, and attachments A and B with this first email. The additional attachments will also be forwarded by email, but to limit the size of each email, so that the email is not rejected by the server, you should expect to see a total of Parts 1 and 2 plus Attachments A through R. My comments are also available online at <http://snugharbor.net> and go to the "water wars" pages for links.

Respectfully submitted,

Nicole S. Suard, Managing Member, Snug Harbor Resorts, LLC

OR87-1

From: sunshine@snugharbor.net
To: comments_EJB@DeltaCouncil
Subject: attachments to Suard comments on the Delta Plan
Date: Thursday, January 26, 2012 12:39:31 PM
Attachments: [ATTACHMENT-E.pdf](#)

Please add these attachments to the comments and attachments previously sent. These are attachments E which is a large file. Please confirm these were received.

Nicky

} OR87-2

Response to comment OR87-2
Comment noted.

From: sunshine@snugharbor.net
To: comments_EJB@DeltaCouncil
Subject: 3rd try! Attachments to my comments on the Delta Plan Attachments D through H
Date: Thursday, January 26, 2012 12:55:27 PM

Please open and save each attachment linked below as my email server is blocking the sending of these as attachments, probably because some are very large files.

Nicky

<http://snugharbor.net/images2012/DELTACOMMENTS/ATTACHMENT-D.pdf>

<http://snugharbor.net/images2012/DELTACOMMENTS/ATTACHMENT-E.pdf>

<http://snugharbor.net/images2012/DELTACOMMENTS/attachment-F-flows.pdf>

<http://snugharbor.net/images2012/DELTACOMMENTS/ATTACHMENT-F-2.pdf>

<http://snugharbor.net/images2012/DELTACOMMENTS/ATTACHMENT-G.pdf>

<http://snugharbor.net/images2012/DELTACOMMENTS/ATTACHMENT-H.pdf>

OR87-3

Response to comment OR87-3

Comment noted.

From: sunshine@snugharbor.net
To: comments_BFB@DeltaCouncil
Subject: please see attachments J to P to add to my comments on the Delta Plan
Date: Thursday, January 26, 2012 1:01:06 PM

Please click and save each attachment:

<http://snugharbor.net/images2012/DELTACOMMENTS/ATTACHMENT-J.pdf>

<http://snugharbor.net/images2012/DELTACOMMENTS/ATTACHMENT-K.pdf>

<http://snugharbor.net/images2012/DELTACOMMENTS/ATTACHMENT-L.pdf>

<http://snugharbor.net/images2012/DELTACOMMENTS/ATTACHMENT-M.pdf>

<http://snugharbor.net/images2012/DELTACOMMENTS/ATTACHMENT-N.pdf>

<http://snugharbor.net/images2012/DELTACOMMENTS/ATTACHMENT-O.pdf>

<http://snugharbor.net/images2012/DELTACOMMENTS/ATTACHMENT-P.pdf>

OR87-4

Response to comment OR87-4

Comment noted.



January 26, 2012 Comments submitted to: eircomments@deltacouncil.ca.gov

Comments regarding the draft Delta Plan, and the process leading up to the plan.

Submitted by Nicole (Nicky) Suard, Esq., Managing Member, [Snug Harbor Resorts, LLC](#) located on a peninsula called Snug Harbor off [Ryer Island](#) adjacent to [Steamboat Slough](#)

Part 1: Narrative Please see also Part 2 for specific Delta Plan comments, and see Attachments A through R, which can all be found online at <http://snugharbor.net/attachments.html>. In addition, many of the reference maps and documents may be found at <http://DeltaREvision.com> which is an archival website focused on the Delta and California water history.

NARRATIVE:

In order for the reviewer to understand the comments and questions contained in this document, I feel it is necessary to provide a summary of the last 12 years of the process leading up to this new Delta Plan from the viewpoint of a Delta land and business owner who began to research some of the history of the Delta and California's previous water plans and reports after listening to a Delta Vision presentation in August 2008 at the Ryde Hotel. I just wanted to understand the facts based on verified history, or the truth, and not on the media hype of historical revisionists we saw starting with the Jones Tract studies. I also have been an amateur map collector in the past 15 years, and now find that my maps of Northern California and the Delta region have come in handy when comparing what DWR claims as history versus what the older maps show. In any case, below is a narrative summary of the latest attack on Delta land and water rights, from a Delta perspective. Documents, maps and studies can be accessed via the onsite links referenced in this document or in a much more detail timeline [Attachment A](#), or utilize the reference links¹.

My summary of the latest attack on Delta land and water rights: In 1982, a bond proposal to provide for funding of a peripheral canal to divert more Sacramento River water around the Delta was very clearly rejected by the voters of the state² who by an overwhelming margin said NO we do not want a canal around the Delta and do not want taxpayers to pay for it. In the meantime, in 1975 the state had already studies and published a plan for flood protection and improvement of Delta Levees³, which would also improve the reliability of water exports, so the state continued to move

¹ <http://snugharbor.net/images2012/DELTACOMMENTS/ATTACHMENT%20A.pdf>

² <http://www.water.ca.gov/swp/milestones.cfm#1980> and <http://www.ppic.org/main/mapdetail.asp?i=855>

³ http://deltarevision.com/maps/historic/1975_controlled_flood_islands_of_the_delta.jpg or http://deltarevision.com/maps/islands_floods_levees/1975_delta-floods-dwr.pdf

Response to comment OR87-5

This is a comment on the project, not on the EIR.

Response to comment OR87-6

Comment noted.

Response to comment OR87-7

Comment noted.

forward with the 1975 Delta Levees Improvements plan. A very informative survey of the Delta was^{OR87-7} conducted, including a review of the past surveys, which allowed for comparative map data to be added to the "Atwater" survey maps⁴.

"No" does not mean "no" to some people, so land developers and major water export agencies such as MWD and Westlands worked to influence elected decision makers that more water could be exported from the Delta without further ecological decline by revising how the system was operated. In the meantime, the western San Joaquin Valley farm lands (Westlands) continued to irrigate and^{OR87-8} use farmlands with toxic levels of selenium, irrigation water then flowed into drainage ditches for export back up to the Northern California area, with plans to "recirculate" and dump the toxins into the San Joaquin River for dilution within the Delta and San Francisco Bay.

In 1998 a SF Bay Area nonprofit organization funded a study and report produced by the Natural Heritage Institute⁵ which proposed revising existing gates and canals of the Delta to allow for increased diversion of Sacramento River water into the San Joaquin River system, which would provide better fresh water for the export pumps in the South Delta, and also possibly halt the drastic decline in the Delta ecosystem. That 1998 report appears to have greatly influenced an agreement among non-Delta interested parties which resulted in the August 28, 2000 CALFED Record of Decision⁶. The map on the next page should be studied carefully so that the reader (if not familiar with CALFED plans) might understand the rest of this narrative and comments. Oddly, as a land and business owner in the Delta in 2000, I recall no major discussions within the Delta regarding this landmark study that would so substantially affect decisions for the future of the Delta. However, I do^{OR87-9} recall a conversation with the then-spokesperson for Delta recreation, Hal Schell, who mentioned restoration plans for Liberty Island, while I was giving him a boat ride around the just-flooded island. I don't believe Hal ever published his article about Liberty Island levee breaches in 1998, nor articles about CALFED plans for the Delta. Hal was doing research for a major book on the history of the Delta when he passed.

In any case, the CALFED "preferred alternative" listed specific water conveyance improvements to move more Sacramento River water through and around the Delta to the exports pumps, and also listed specific restoration projects that would be necessary to mitigate for the negative impacts to the Delta ecological environment.

Response to comment OR87-8

Comment noted.

Response to comment OR87-9

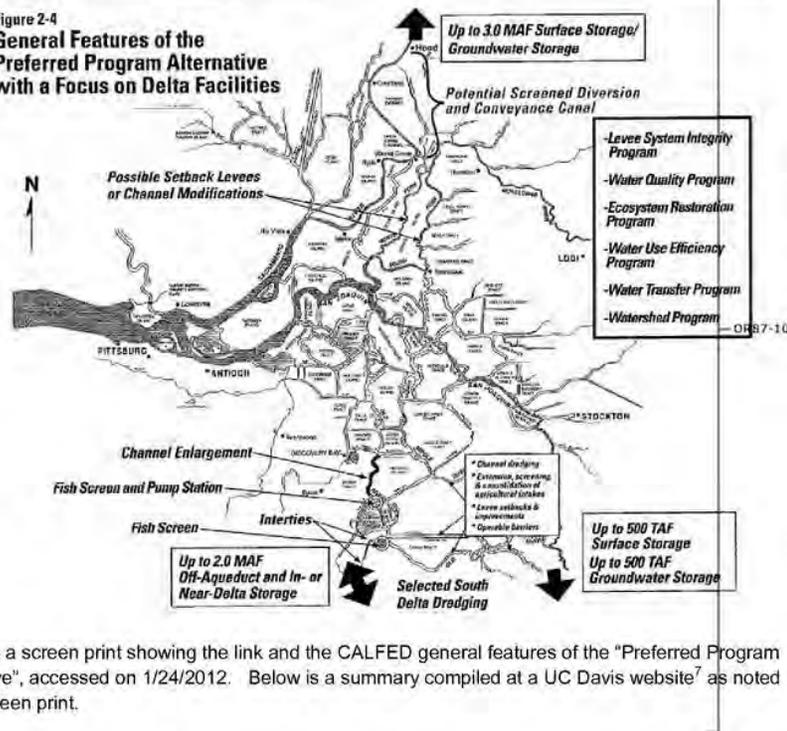
Comment noted.

⁴ http://deltarevision.com/surveys_of_sacramento_san_joaquin_delta.html example map <http://deltarevision.com/maps-surveys/1982-atwater/atwater-1-sacramentoriver.pdf>

⁵ <http://www.n-h-i.org/> or http://deltarevision.com/1990-1999_docs/NHI-Packard_delta_study1998.pdf

⁶ http://www.calwater.ca.gov/content/Documents/library/July2000_EIS_EIR/301/301_chapter2.pdf and for the whole plan: http://calwater.ca.gov/calfed/library/Archive_ROD.html

**Figure 2-4
General Features of the
Preferred Program Alternative
with a Focus on Delta Facilities**



Above is a screen print showing the link and the CALFED general features of the "Preferred Program Alternative", accessed on 1/24/2012. Below is a summary compiled at a UC Davis website⁷ as noted in the screen print.

⁷ <http://deltarevision.com/COMMENTS/calfed-summary.jpg> (UC Davis website no longer displays the document)

Response to comment OR87-10

Comment noted.

Alternatives Description:

All four alternatives involve the Eight Program Elements (below) to address the four critical resource categories (see introduction above). The Eight Program Elements are practical steps to improve the overall Delta conditions and they are inter-related. The alternatives differ on the varying emphasis put on different elements.

The Eight Program Elements:

1. Storage
2. Conveyance
3. Watershed Management
4. Water Quality
5. Water Transfers
6. Levee System Integrity
7. Water Use Efficiency
8. Ecosystem Restoration

Good summary of what is happening in the Delta, and what is already being built or ready to operate.... 2012

Alternative 1: relies primarily on the current configuration of the Delta channels;⁸ fish screen and barrier improvements to the SWP and CVP pumps; off-Delta storage.

Alternative 2: adds improvements to north Delta channels that accompany the south Delta improvements contemplated in Alternative 1. Alternative 2 also sets back levees in the north Delta - Convergence Canal in the north.

Alternative 3: adds a canal connecting the Sacramento River in the north Delta to the SWP and CVP export facilities in the south Delta. Peripheral Canal; northern setback levees; off-Delta storage.

Preferred Program Alternative: includes a screened facility on the Sacramento River and other north Delta improvements, if these features are determined necessary to meet drinking water quality goals and can be operated without adversely affecting fish populations. A mix of Alternative 1 and 2.

In addition, the **No Action Alternative** is included in the impact analysis and comparison.

OR87-11

Response to comment OR87-11

Comment noted.

Response to comment OR87-12

Comment noted.

Response to comment OR87-13

Comment noted.

Response to comment OR87-14

Comment noted.

By 2003 the major water exporters were already pushing to revise the 2000 CALFED ROD to allow for greater flexibility of water transfers, greater possibility of water exports from the Sacramento River, changes to water quality standards for the Delta and more⁸. There is reference to a meeting in Napa, but the revision is called "Monterey Plus" and the decisions were made by water exporters without input or protections for Delta interests. In the meantime, DWR and other state and federal agencies were spending billions of dollars on computer modeling⁹, fish studies¹⁰, transportation planning¹¹ and levee modifications¹².

OR87-12

Beginning in 2004, there was a meeting of "stakeholders" (they seemed to refer to themselves or their actions as the DeltaPact) which was in effect a call to action. Please take the time now to review the MWD slideshow found at their website in 2008, but hard to find now except at http://deltarevision.com/2004_docs/wptf20040408_deltapack.pdf

OR87-13

<http://socialwaterdialogue.org/calendar/papers/04-2-04.pdf> for a 2005 edited copy of the same presentation accessed 1/24/2012 linked from the MWD website¹³

After the "Deltapack" presentation, the CALFED preferred alternative (renamed the Delta Improvements Package), began to have name changes for elements of the **conveyance** project portion of the plan. The above MWD slideshow from 2004 includes the name of a PR firm, (last slide)

⁸ http://www.water.ca.gov/environmentalservices/docs/mntrv_plus/Monterey%20Plus-ExhC_Statement%20of%20Overriding%20Considerations.pdf

⁹ <http://deltarevision.com/computer-modeling.html>

¹⁰ http://deltarevision.com/Delta_maps/Fish_studies.htm

¹¹ http://www.dot.ca.gov/hq/tpp/californiainterregionalblueprint/images/maps/Priority_Reg-Corridors.pdf

¹² http://deltarevision.com/2003_docs.htm

¹³ <http://socialwaterdialogue.org/calendar/papers.html#2011>

OR87-14

and the whole presentation appears to be a call to action, so perhaps this is the point in time when a concerted effort to provide false data, maps and information on the Delta to the public began as well

OR87-14

Response to comment OR87-15

Comment noted.

In any case, the conveyance portion of the CALFED 2000 ROD was renamed to the "Delta Improvement Project" which was split into South Delta Improvements Plan¹⁴ (SDIP) and North Delta Improvements Plan¹⁵ (NDIP). These plans were then further split into regional projects and plans, using names that indicated "restoration"¹⁶ or "flood control"¹⁷. However, the actual function of the "as built" projects continued to be elements of *conveyance*¹⁸.

OR87-15

Response to comment OR87-16

Comment noted.

In the meantime, in 2004, the state moved forward with its field studies¹⁹ for use of Delta Islands as water storage in wet water years. DWR and owners of specific central Delta islands had proposed the public and/or private water storage use of islands, and computer modeling had indicated it was feasible²⁰, but to test the effects, field studies were conducted when Jones Tract levee failed on June 1, 2004 according to the engineer who closed the DCC gate²¹, or on June 3, 2004 according to DWR & the later revised DCC operations log²². In any case, DWR had their practice run of the effects on water quality when a levee breaks, and also the water quality of the stored water that is later diverted to the export pumps. Photos from the Jones Tract incident were used, and continue to be used, as a media tool to give the impression the Delta levees are much more fragile than recent history indicates. The incident also was used to get reported \$90 million in federal "emergency" funding even though the state had received \$3 Billion²³ in water planning/infrastructure project funding in 2003!

OR87-16

Response to comment OR87-17

Comment noted.

Also from 2004 forward, many different flow schematics for the different versions of computer models of the Delta plus Suisun Marsh area were modeled and remodeled. How much water flowed in and out of the Delta in those models depended not necessarily on historical facts, but on who was doing the counting and which water conversion table was being used, the DWR one²⁴ or the more accurate ones used by USACOE and USGS²⁵. CALVIN²⁶, CALSIM²⁷ and CALSIM II²⁸, were the

OR87-17

¹⁴ http://baydeltaoffice.water.ca.gov/sdb/sdip/index_sdip.cfm and

http://baydeltaoffice.water.ca.gov/sdb/sdip/images_pdf/Figure6.2-1.pdf

¹⁵ http://www.water.ca.gov/frankstrack/docs/Delta_Conveyance_Summary_Report_121007.pdf further divided into projects like

<http://www.water.ca.gov/frankstrack/docs/Franks%20Tract%20Final%20VE%20Report.pdf>

¹⁶ <http://deltarevision.com/2012%20docs/construction/2012-ndip-projects-underway.jpg> or

¹⁷ <http://deltarevision.com/2012%20docs/construction/12-calfedupdate12-2011.jpg>

¹⁸ http://deltarevision.com/calfed_name_game_video.html

¹⁹ http://deltarevision.com/2011/Bacon_Island_Jones_Tract_field_studies.pdf or see video at

<http://www.youtube.com/watch?v=274M7dBotEk>

²⁰ <http://www.water.ca.gov/storage/> or <http://www.water.ca.gov/storage/indelta/index.cfm> and

http://www.water.ca.gov/storage/docs/In-Delta%20Project%20Docs/FINAL_Supplemental_In-Delta_Report.pdf

²¹ http://www.waterboards.ca.gov/waterights/water_issues/programs/bay_delta/wq_control_plans/2006wgcp/exhibits/append2/doi/doi-07.pdf

see page 17 that someone saved and submitted to the waterboards website showing the original DCC operations log.

²² <http://www.usbr.gov/mp/cvo/vungvari/Ccgates.pdf> see page 34 for 2004 gate operations (revised log)

²³ <http://deltarevision.com/COMMENTS/2003-over-3-billion-federal-funds.jpg>

²⁴ http://deltarevision.com/Issues/waterflow/video/NorthDelta_vs_NorthDelta/waterflow-graphics-2of3.pdf see slide 9

²⁵ http://deltarevision.com/Issues/waterflow/video/NorthDelta_vs_NorthDelta/waterflow-graphics-2of3.pdf see slide 9

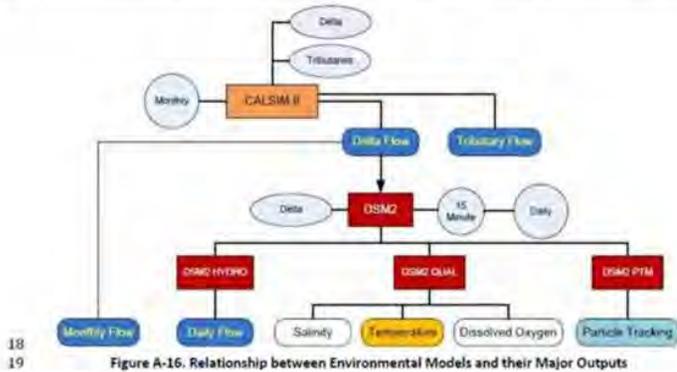
²⁶ http://deltarevision.com/Issues/computer_modeling/2008-futures.jpg

²⁷ http://deltarevision.com/Issues/computer_modeling/calsim-sanjoaquin-schematic.jpg and

http://www.water.ca.gov/floodmgmt/dsmo/sab/drmsp/docs/WaterAnalysis_ITF.pdf page 38

computer modeling programs used to make the decisions regarding conveyance, but other models have also been used, including UnTrim²⁹, Delta Trim3d³⁰, DSM2³¹, UNET³², DICU³³, REALM³⁴, IGSM2³⁵, CVGSM2³⁶, Unet, RMA Delta Model³⁷, and WAM³⁸ to name a few. Notice the change in flow schematics for the different models. A combination of computer models were used for decisions leading up to the Delta Plan as shown in the graphic below:

58 | 81 | http://www.deltacouncil.ca.gov/sites/default/files/documents/files/App_A_Conceptual_Foundation_Analytical_Framework_092511_v_DSP.pdf



OR87-17

Response to comment OR87-18
Comment noted.

From 2005 forward DWR and its allies proposed conveyance projects as regional projects in the names of flood control or restoration. In 2006 DWR and others funded studies at UC Berkeley³⁹ which resulted in publication of documents using incorrect Delta flood history. You might want to

²⁸ http://deltarevision.com/Issues/computer_modeling/calsim_input_waterflow.jpg And http://deltarevision.com/Issues/computer_modeling/calsimIIassumptions-for-modeling.jpg and http://deltarevision.com/Issues/computer_modeling/calsimIImap.jpg
²⁹ http://deltarevision.com/Issues/computer_modeling/UnTRIM_dicu_nodes.jpg and http://www.water.ca.gov/iep/docs/pod/UnTRIM_Calibration_Report.pdf
³⁰ http://deltarevision.com/Issues/computer_modeling/Delta_TRIM-hydrodynamic-model.jpg
³¹ [http://www.water.ca.gov/storage/docs/DSM2%20Docs/Document%20D2%20DW%20Ops%20\(Mierzwa\).pdf](http://www.water.ca.gov/storage/docs/DSM2%20Docs/Document%20D2%20DW%20Ops%20(Mierzwa).pdf) And http://deltarevision.com/Issues/computer_modeling/calibration-o.jpg and http://deltarevision.com/Issues/computer_modeling/DSM2_limits.jpg and <http://www.water.ca.gov/dsm2pwt/>
³² <http://www.safta.org/documents/combined20state20submittalssmall.pdf> page 271 or 574
³³ <http://www.water.ca.gov/bdms/docs/DeltaWithdrawalsReturnsLandUse.pdf>
³⁴ http://deltarevision.com/Issues/computer_modeling/realm-modeling-nodes.jpg
³⁵ See appendix of the Monterey-plus agreement, page 197 of 208
³⁶ <http://www.water.ca.gov/floodmgmt/dsmo/sab/drmsp/docs/LRAT-TechMemo2004-01-12.pdf>
³⁷ [http://www.water.ca.gov/frankstract/docs/\(B\)RMA-Calibration%20Report.pdf](http://www.water.ca.gov/frankstract/docs/(B)RMA-Calibration%20Report.pdf)
³⁸ http://www.water.ca.gov/floodmgmt/dsmo/sab/drmsp/docs/WaterAnalysis_ITF.pdf page 16
³⁹ http://deltarevision.com/2006_docs/2006-berkeley-envisionings.pdf And <http://deltarevision.com/images/pdfs/2006ReEnvisioningDelta.pdf> and http://deltarevision.com/2006_docs/2006_DWR_delta_charterette.pdf and

OR87-18

Response to comment OR87-19

Comment noted.

review some of the different reports and studies produced in 2006⁴⁰, gathered on one page for easy access, or you can try to find the articles at their original publication sites. In 2007 the Delta Vision process was quietly started⁴¹, utilizing the incorrect maps and data generated, apparently during the 2006 UC Berkeley process. In August 2008 the Delta Vision group did a presentation at the Ryde Hotel, at which time myself and many other Delta land owners were told what others envisioned for the Delta. Even at that meeting it became clear that some of the data used in the planning process was not correct, based on Delta historical facts. This started my personal quest to understand the truth or facts based on historical documents, not based on media hype or fancy computer-generated studies⁴². The decision to revise the Delta was made in 1998, agreed to by non-Delta stakeholders in 2000, and only starting in 2008 were the stakeholders most negatively impacted by the 1998 decisions allowed to even know about sections the planning process! 2009 brought legislative changes⁴³ and more meetings, and the construction of sections of the conveyance plans moved forward.

Flood Control or restoration may have been a portion of the proposal, but the *function* of the overall projects resulted in additional conveyance of Sacramento River water away from its former Delta flow pattern. Hence, diversion of water away from the Sacramento River using the Folsom South Canal was labeled "flood control" but it actually can divert up to 100 million gallons per day⁴⁴ into the Mokelumne River system to reach the export pumps. Purchase of the McCormack/Williamson Tract was labeled as "restoration", but the planned modifications to the adjacent waterways⁴⁵ and Dead Horse Island⁴⁶ will facilitate additional Sacramento River water exports. Installation of "fish screens" while new and more powerful water pumps were also installed⁴⁷ was labeled as "restoration" projects, but the function is to create new additional water export from the Sacramento River. Modifications to the levees on Boudin Island, Staten Island and along the Mokelumne River have been labeled "flood control" but the function is to allow additional freshwater flow for exports⁴⁸. And then we saw the "regional projects" that were local joint efforts, like the Freeport Regional project⁴⁹ that installed a new export pump on the Sacramento River to provide new sources of fresh water for EBMUD (SF Bay Area), and the Stockton Empire Tract water siphon⁵⁰, also labeled as a regional project but the function is new Sacramento River exports. We also hear about "reoperation" of the Delta Cross Channel gates⁵¹, which may be enlarged or permanently closed, depending on which final plan is built. There was also the new Victoria Tract water siphon⁵² built as a

⁴⁰ http://deltarevision.com/2006_delta_docs.htm

⁴¹ http://deltarevision.com/2007_docs.htm and

http://deltarevision.com/images/pdfs/2007_Aug_DVC_Item_2C_Addendum_to_SCG_Report.pdf

⁴² <http://deltarevision.com/2008links.htm>

⁴³ http://deltarevision.com/2009_documents.htm

⁴⁴ <http://deltarevision.com/2012%20docs/construction/folsom-south-diversion.jpg>

⁴⁵ <http://deltarevision.com/2012%20docs/construction/2012-ndjp-projects-underway.jpg>

⁴⁶ <http://deltarevision.com/2012%20docs/construction/12-calfedupdate12-2011.jpg>

⁴⁷ <http://deltarevision.com/2012%20docs/construction/2-calfedupdate12-2011.jpg>

⁴⁸ <http://deltarevision.com/2012%20docs/construction/superlevee-12.jpg>

⁴⁹ <http://deltarevision.com/2012%20docs/construction/6-calfedupdate12-2011.jpg> or <http://www.freeportproject.org/>

⁵⁰ <http://deltarevision.com/2012%20docs/construction/7-calfedupdate12-2011.jpg>

⁵¹ <http://deltarevision.com/2012%20docs/construction/thru-delta-plan-uses-freeport-intake-2007.jpg>

⁵² <http://deltarevision.com/2012%20docs/construction/8-calfedupdate12-2011.jpg>

regional project for CCWD, and currently under construction several new export pumps (labeled restoration due to the fish screens) north of Sacramento, one at Verona⁵³ and one planned for the Woodland/Davis new exports. Clearly, very substantial funds have been spent on the conveyance portion of the CALFED 2000 ROD, such that it appears by the end of 2013 or 2014 Sacramento River flow into the North Delta could be reduced⁵⁴ by more than 50% or down to perhaps 4,000 cfs of flow between the Freepoint pumps and Ida's island or the southwest end of Grand Island. However, the flow gate at Rio Vista may indicate addition flow because of the increase in flow proposed for the Yolo Bypass area⁵⁵.

OR87-19

Which restoration projects have been done or are in process? In 1998 the levees of Liberty Island were breached to create a new wetland area. Studies are ongoing. The Yolo Bypass had been proposed for expansion, and the modifications to some of the levees have already been approved and have been under construction since approximately 2010⁵⁶. These restoration elements of the CALFED ROD also received regional project names even though the function continues to be part of the CALFED 2000 ROD. Examples of ongoing regional construction projects under construction or nearing completion in January 2012: Natomas⁵⁷, Yolo Bypass levee modifications⁵⁸, Folsom South, West Sac⁵⁹ and bypass modifications⁶⁰ to divert water into the Yolo Bypass and also prevent flooding in protected areas of Sacramento.

OR87-20

While conveyance and restoration construction plans moved through the approval process as regional plans, DWR, water exporters and their media allies conducted a campaign of distribution of false and misleading information about the current condition of the Delta levees, about Delta history, and even about the physical location of the Delta islands themselves. For example DWR and its media allies added Suisun Marsh islands to the Delta to inflate supposed flood history, counted island floods in areas where flood control *is the purpose* of the island, and counted floods from times before levees existed on the islands in an effort to inflate Delta flood history. Often quoted by DWR and media is that the Delta has flooded over 160 times in the last 100 years⁶¹. This is false. Look at the historical data⁶². Look also at the timeline below⁶³, noting that two thirds of the floods of the Delta in the last 100 years happened **before** the first joint effort at Delta levee improvements.

OR87-21

⁵³ <http://deltarevision.com/2012%20docs/construction/veronapumps-fishscreen.jpg> and

<http://deltarevision.com/2012%20docs/construction/2-calfedupdate12-2011.jpg>

⁵⁴ http://deltarevision.com/Delta_maps/maps/water_flow_use/ss-reduce_flow.JPG

⁵⁵ http://deltarevision.com/sacramento_river_and_yolo_bypass.html

⁵⁶ http://www.yolobasin.org/bypass_strategy.cfm?useFigures=true

⁵⁷ <http://www.safta.org/documents/combined20state20submittalsmall.pdf>

⁵⁸ <http://deltarevision.com/2012%20docs/construction/yolobypass-egberttrace-2012construction.jpg> and

<http://deltarevision.com/2012%20docs/construction/egberttraction2012improvements-saftaplans.jpg>

⁵⁹ <http://deltarevision.com/2012%20docs/construction/westsidelevees.jpg>

⁶⁰ <http://deltarevision.com/2012%20docs/construction/bypass-dec2011.jpg>

⁶¹ http://deltarevision.com/Delta_maps/Floods-Islands-Levees.htm

⁶² http://rverisland.com/images/floods/delta_floods_final.pdf http://deltarevision.com/2011/historic-timeline/historic_maps/timeline_delta_levee_failures.pdf

⁶³ http://deltarevision.com/issues/delta_floods_timeline.jpg

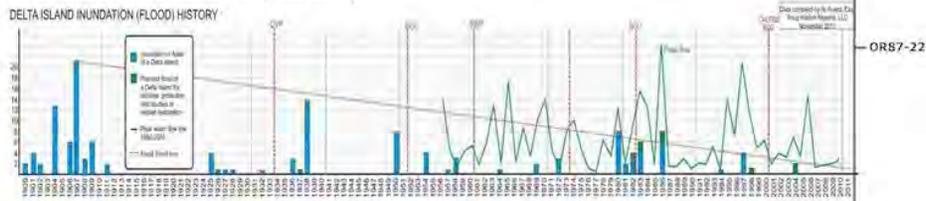
Response to comment OR87-20

Comment noted.

Response to comment OR87-21

Comment noted.

After the levee improvements proposed by DWR during Governor Brown's last tenure as leader of the state, there have been only a handful of unexplained or accidental floods, not counting the controlled flooding of islands, as shown by the declining flood incident trend line from 1900 to 2010: (below is a small section of **Attachment B series** ⁶⁴)



When DWR decided to add the Suisun Marsh to the Delta studies, it created confusions when combining data for reports, which was manifested in the DRMS Phase 1 Final Report published in 2008⁶⁵, and corrected two times in 2009⁶⁶, but the Delta Plan decisions are based on the incorrect data found in the technical studies of DRMS Phase 1. The various versions of the studies, and examples of corrections⁶⁷, are still available online. Even the draft Delta Plan utilizes data from DRMS Phase 1 that has been shown to be incorrect.⁶⁸

As another example of the campaign to falsify and confuse Delta history, one of DWR's allies has been the prominent online mapping service. This particular online mapping service has the contract to provide mapping services to state and federal government agencies, and for some unexplained reason starting in 2005 the online mapping service began to confuse the location of Delta Islands⁶⁹ and waterways; the problem persists even today. One of the effects of online mapping services confusing Delta Islands and waterways is that scientists and their published reports which also relied on the veracity of the online maps, ended up using false island data, which leads to false or at least

⁶⁴ <http://snugharbor.net/images2012/DELTACOMMENTS/ATTACHMENT%20B.pdf>
<http://snugharbor.net/images2012/DELTACOMMENTS/ATTACHMENT-B-6.pdf>
<http://snugharbor.net/images2012/DELTACOMMENTS/ATTACHMENT-B-2.pdf>
<http://snugharbor.net/images2012/DELTACOMMENTS/ATTACHMENT-B-3.pdf>
<http://snugharbor.net/images2012/DELTACOMMENTS/ATTACHMENT-B-4.pdf>
<http://snugharbor.net/images2012/DELTACOMMENTS/ATTACHMENT-B-5.pdf>

⁶⁵ http://www.science.ca.water.ca.gov/drms/drms_irp.html
⁶⁶ http://www.water.ca.gov/floodmgmt/dsmo/sab/drmsp/phase1_information.cfm go to the bottom of the page to note the March 2009 revision and the bottom of the page to note the December 2009 page. However what was revised is left to the view to decide.

⁶⁷ http://rverisland.com/images/smalls/drms-using_maps_to_hide_mistakes.jpg
⁶⁸ <http://snugharbor.net/images2012/DELTACOMMENTS/ATTACHMENT-B-6.pdf>
⁶⁹ http://deltarevision.com/2011videos/wrongmaps/2005Mount_study_grand-rver.jpg and
http://deltarevision.com/2011videos/wrongmaps/noaa_sacramento_river_wrong.jpg
http://deltarevision.com/Issues/wrong_maps_data/mwd-dwr-drms/DELTAVISION/delta_vision_wrong.JPG
http://deltarevision.com/2011videos/wrongmaps/snugharbor_on_sevenmile_slough.jpg and
http://rverisland.com/images/maps/gm_wrong_rver_tyler.jpg and
http://deltarevision.com/Issues/wrong_maps_data/missing_rivers3.jpg and
http://deltarevision.com/Issues/wrong_maps_data/missing_84_220_imac.jpg and
http://deltarevision.com/2011videos/wrongmaps/2004_DWR_missing_Rver.JPG
http://deltarevision.com/2011videos/wrongmaps/sacramento_river_2003-dwr.jpg
http://deltarevision.com/2011videos/wrongmaps/sacramento_steamboat_switch2006.jpg

Response to comment OR87-22

Comment noted.

Response to comment OR87-23

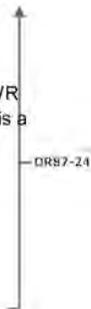
Comment noted. This is a comment on the project, not on the EIR.

Response to comment OR87-24

Comment noted.

faulty results. For a collection of wrong maps of the Delta produced by different scientists and DWR contractors, go to <http://deltarevision.com/wrong-maps-of-the-delta.html>. In the meantime below is a classic wrong map of the Delta that came from the "Flooded Islands Feasibility Study" of 2005 referenced in Delta Plan materials, a study used to validate plans for In-Delta storage.

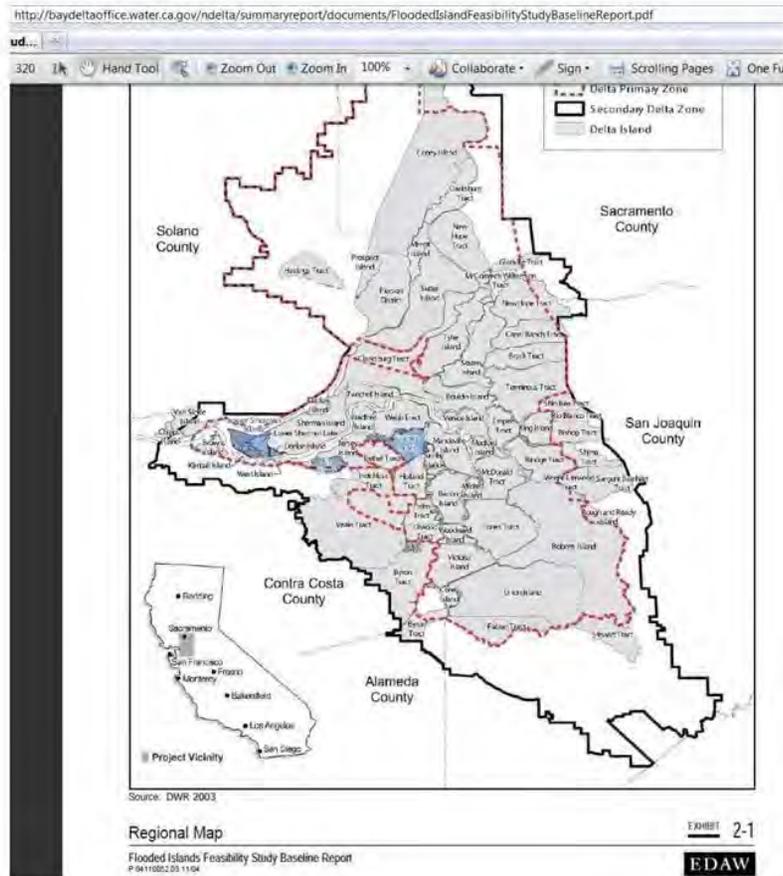
(see next page)



No comments

- n/a -

If the scientists do not know which islands they are studying and proposing for flooding, how can one even consider acting on their proposal? (And for those who do not know the correct Delta island names and locations, the map below is incorrectly lists the location for Pierson District, Ryer Island, Coney Island, Merritt Island, Sutter Island, Grand Island, New Hope Tract, Clarksburg Tract, Brannen Island and Andrus Island.)



OR87-25

Response to comment OR87-25

Comment noted. The island names on maps included in the Delta Plan and the Draft Program EIR have been changed from the map included in this comment.

The Delta Plan was drafted using the same process as the CALFED 2000 ROD. The decisions were made long ago by those not interested in protecting Delta landowner rights, and by persons not concerned about the long term negative impacts to Northern California aquifers and natural environments. And now, in January 2012, after most of the conveyance sections of the CALFED preferred plan have already been approved as regional projects and have been built or are under construction, we are given the "opportunity" to comment. My comments (see Part 2) will be based on a review of past DWR publications and the conflicts in data used to develop the new Delta Plan. Since I believe the Delta Plan is silent or does not address some important logical long term effects to the Delta and Northern California, I will also comment on what is NOT included in the Delta Plan. Actually what is not included is more important than what is. My comments are based on topics or themes with reference to specific applicable clauses or data of the Delta Plan if available.

Response to comment OR87-26

This is a comment on the project, not on the EIR.

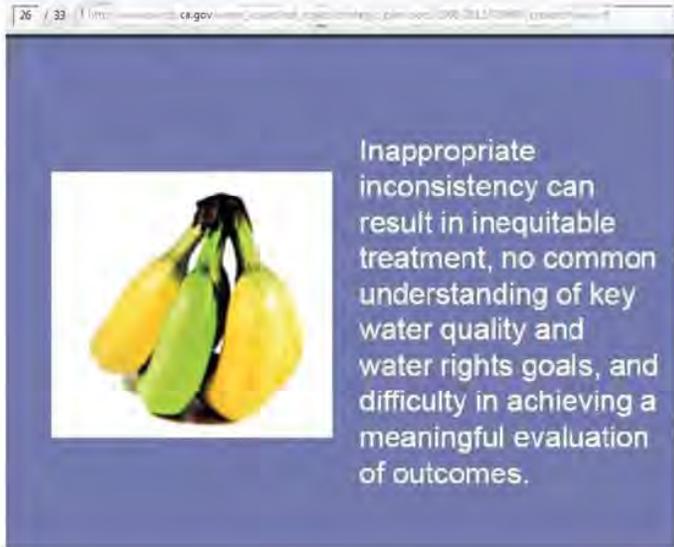
Please go to Part 2

Response to comment OR87-27
Comment noted.

SPECIFIC COMMENTS SUBMITTED TO THE DELTA STEWARDSHIP COUNCIL REGARDING THE DELTA PLAN ... PROCESS AND USE OF DATA

COMMENTS submitted by Nicole (Nicky) Suard, Esq., Managing Member, Snug Harbor Resorts, LLC
<http://snugharbor.net> sunshine@snugharbor.net

The following general and specific comments and suggestions are submitted regarding the Draft Delta Plan, Program Environmental Impact Report as it appeared online in November 2011, and on the CD handed out by the DSC at meetings, and including the 5th Staff Draft Delta Plan and sections of the BDCP, as both are incorporated by reference to the Draft Delta Plan EIR/EIS. I find there are substantial inconsistencies between data used in the Delta Plan and BDCP drafts, which should be resolved *prior to* enactment of a Delta Plan¹. Please note the following statement by a state agency representative as shown on the slide below: ***"Inappropriate inconsistency can result in inequitable treatment, no common understanding of key water quality and water rights goals, and difficulty in achieving a meaningful evaluation of outcomes."***



OR87-27

¹ <http://snugharbor.net/images2012/DELTAComments/ATTACHMENT-C.pdf>

Response to comment OR87-28

This is a comment on the project, not on the EIR.

Comments and suggested solutions are provided by topic rather than a chronological order of Delta Plan chapters, with a focus on how the Delta Plan uses inconsistent data which will result in inequitable treatment of Delta land owners and businesses, and which has resulted in no common understanding of key water quality and historical water rights. The inconsistency continues to make it difficult for anyone to make a meaningful evaluation of the projected outcomes. See Attachment E² which will be referred to below for more graphical examples of inconsistent use of data by the Delta Plan and/or BDCP drafts.

Comments & Solutions:

1. **Salinity compared:** 1 ppt and x2 (Delta Plan Section....)

To avoid inconsistency and inequitable treatment of Delta land owners, The Delta Plan should require that the BDCP and others related to water quality refer only to the historic Salinity standard of less than **1 ppt** for water quality standards for in-delta use should be included in the Delta Plan, with specific incorporating reference to the NDWA contract. (See [Attachment E](#), first four pages) The Delta Plan should specify minimum water quality and minimum water flow *for each natural or original waterway* of the North Delta or Sacramento River watershed within the Delta, as the watershed was defined prior to 1995. Water quality monitors should be placed at the location where salinity intrusion is most likely to initiate based on managed flows and/or drought conditions and/or breach of a Delta island for water storage or restoration. All waterway and monitoring data must be easily accessible to the public and posted online. No new contracts for any diversions from the Sacramento River watershed should be allowed if such contract would reduce in-delta flows below the minimum allowed on any natural waterway. Natural Delta waterways are defined as Sacramento River courses that were navigable in 1852 to 1860s, per the maps and descriptions of the first official survey of the Sacramento River from below Rio Vista to Sacramento, and including Steamboat Slough, "Old River" Sacramento and Sutter Slough. See [Attachment H](#)³ for sections of original maps and Attachment D⁴ for the importance of the waterways).

Delta Dimensionality Considerations-2-dimensional flow model is needed to be applied during low flows in certain reaches when gravitational circulation might be carrying more saline water and nutrients upstream along the channel bottom on a net tidal cycle basis. If there are no monitors located at the confluences of Steamboat Slough with Cache Slough, and Sacramento River south of Ida's Island (Viera's) saline water may encroach without detection and begin to cause damage to the aquifer of this area, degrading the drinking water for this area of the Delta. In addition, encroachment of saline water into the North Delta is a breach of the NDWA contract. . Restoration projects that could create the possibility of salinity encroachment above 1 ppt north of Rio Vista should be prohibited due to the impact on prime farm lands of the Delta. These natural waterways

² <http://snugharbor.net/images2012/DELTA/COMMENTS/ATTACHMENT-E.pdf>

³ <http://snugharbor.net/images2012/DELTA/COMMENTS/ATTACHMENT-H.pdf>

⁴ <http://snugharbor.net/images2012/DELTA/COMMENTS/ATTACHMENT-E.pdf>

should also be maintained for navigation per previous plans and legislation passed or approved between 1880 and 1990⁵.

OR87-28

Response to comment OR87-29

Comment noted.

2. **Sacramento River historical flows compared:** 15,000 to 21,000 TAF (Delta Plan Section ...)

When one reviews the water plans of the past, and the reports and studies leading up to this new Delta Plan, inconsistencies in how water volume is calculated is seen. Specifically, DWR flow modeling uses a different flow conversion chart than USGS and other scientific agencies, which results in an inflation of water available for export, leaving less water available to flow through the North Delta waterways of Steamboat Slough, Sutter Slough, and a portion of the lower "Old River" Sacramento. Since the new Delta Plan was conceived and planned over the last ten years, and well before the 2009 documents the Delta Plan uses as reference, the inconsistencies found in water calculations and computer modeling used by DWR for CALSIM and CALSIM II should be reconciled and corrected to reflect volume calculations based on standard conversion tables, if accuracy is a goal of the Delta Plan. This issue was brought to the attention of the ISB in 2010 and reference material are included in this comment/statement; see **Attachment F⁶** and **F-2⁷** and if interested in the details, see the documents and video presentation at the following links:

http://deltarevision.com/it_depends_on_who_is_counting.html

http://deltarevision.com/Issues/waterflow/video/NorthDelta_vs_NorthDelta/waterflow-graphics-2of3.pdf

(map next page)

OR87-29

⁵ <http://snugharbor.net/images2012/DELTAComments/ATTACHMENT-E.pdf>

⁶ <http://snugharbor.net/images2012/DELTAComments/attachment-F-flows.pdf> and

⁷ <http://snugharbor.net/images2012/DELTAComments/ATTACHMENT-F-2.pdf>

Sacramento-San Joaquin Delta

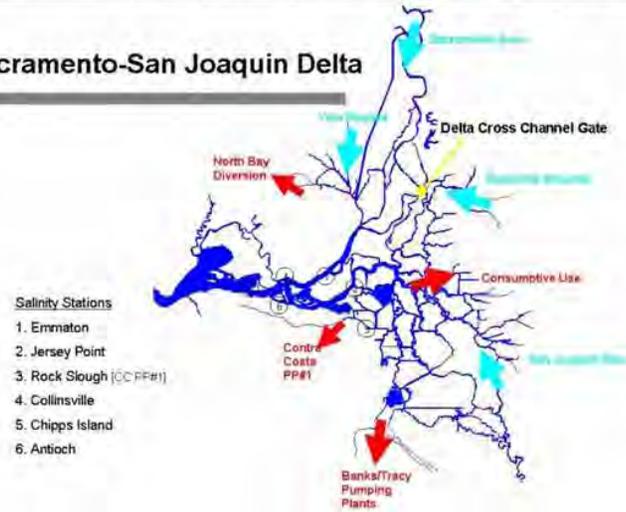


Figure 3-1 Sacramento-San Joaquin Delta

Map above show the past actual physical flow and modeling schematic for that flow. After 2007 the computer modeling schematic was altered so that just on paper the Yolo Bypass flows are counted as part of the Sacramento River flow in the North Delta, even though the water does not physically flow that way. This change was most likely done to inflate Sacramento River flow in order to validate export percentage flows. (personal opinion)

OR87-29

3. Sacramento Valley, Delta and Bay Area aquifer recharge: Delta Plan Section ...

According to the "system reoperation" summary flow map, flow on the Sacramento River through the Delta is proposed to average 15,070 Thousand Acre Feet (TAF) including the Yolo Bypass flows of 4,000 TAF or more per year. That means, in effect, where the North Delta historically received 18,000 to 21,000 TAF per year of fresh Sierra water, the North Delta will instead receive 11,000 TAF at most. That amounts to substantially higher percent of flow reduction on the Sacramento River in the North Delta region than what was previously reported or modeled. It would mean the North Delta waterway flows might equal what would be experienced in drought times like the late 1970s⁸, but for this area it would a sustained "drought" due to the sustained diversion of Sacramento River water. The Delta Plan indicates average flow into the San Francisco Bay will be 15,000 TAF on average per year, but the plan fails to address the fact that

OR87-30

⁸ http://snusharbor.net/images2012/DELTAComments/ATTACHMENT_E.pdf go to the pages on California aquifers, pages 5-8

Response to comment OR87-30

This is a comment on the project, not on the EIR.

the quality of the water flowing on the Sacramento and San Joaquin Rivers through the Delta will be substantially degraded, once the recycled water from NorCal communities and the salt and selenium concentrated Westlands runoff are "recirculated" into the Delta. In effect the Delta and bay receive not just a drastic reduction in fresh water flow, but also a substantial assumed reduction in water quality, which will eventually effect the aquifers of the entire area. Section 3 of the Delta Plan assumes "no long term significant effects" on the NorCal aquifers, but provides no clear data proving their assumption, and no mitigation measures should the Sacramento Valley, Delta and SF Bay aquifers show quality decline and salinity encroachment due to actions of the Delta Plan or thereafter. Common sense says that if you had a full glass of clean drinking water and you poured out 1/3 of the water and replaced the water with treated sewage water and water with high concentrations of salt and selenium, that the glass of water could no longer be used for human consumption. The same common sense applies to a small glass in the same way it should apply to a large aquifer. In summary, the long term impacts to Sacramento Valley, Delta and SF Bay area aquifers are not adequately addressed in the Delta Plan.

OR87-30

4. Definitions used in the Delta Plan: Inconsistencies create confusion...

Any new or revised meanings must be stated within the narrative of the document, and must also provide the former definition of the same word or phrase. For example, if the definition of a flooded island has been revised to include scour holes when in former documents scour holes were not included, the revised definition and the reason for the revision must be stated within the narrative description. Another example is the confusion caused by the Delta Plan's renaming of historic waterways, such as was found on page 8, section 8 of the Delta Plan. The photo below is actually of Ryer Island with Steamboat Slough the waterway on the left and the Sacramento Ship Channel/Cache Slough on the right. The caption included in the Delta Plan gives the waterways different names, but does not provide reference as to how, when or why the waterways are proposed to be renamed. Given that the drafters of the Delta Plan have closely studied the Delta lands and waterways, the caption can not be a mistake but an intentional renaming of a historic waterway. The Delta Plan should give plausible reasons for renaming common land and water features prior to publication and use. Given the long term history of both Ryer Island and Steamboat Slough, I am opposed to the renaming of both of these locations in the Delta. (screen print below)

OR87-31

Response to comment OR87-31

This is a comment on the project, not on the EIR.

1 **Figure 8-6**

2 **Aerial View of Agricultural Land**

3 *The photograph shows the confluence of Elk Slough (left) and the Sacramento River (right), looking south. This*
4 *provides a sense of the various textures and color schemes provided by agricultural land in the Delta. Note the right*
5 *angles, concentric line series within agricultural plots, and the variation of greens and browns, indicating fields at*
6 *different production stages.*

7 *Source: Photograph taken by EDAW (now AECOM) in 2009*



OR87-31

No comments

- n/a -

If the viewer is interested in seeing the wrong maps of the draft BDCP, see Attachment J⁹ and Attachment C¹⁰ for the Delta Plan maps reviewed

(please go to the next page)

⁹ <http://snugharbor.net/images2012/DELTACOMMENTS/ATTACHMENT-J.pdf>

¹⁰ <http://snugharbor.net/images2012/DELTACOMMENTS/ATTACHMENT-C.pdf>

Another inconsistency and certainly an irony is that the Delta is often referred to as the “hub” of California’s water system, but the map showing the groundwater basins of California fails to define the Delta area. If this is a “DELTA Plan, shouldn’t there be consistency in recognition of the location of the subject of the plan?



ORS7-32

Response to comment OR87-32

The hydrologic areas and groundwater basins presented in the Delta Plan and the EIR are based upon the hydrologic basins used by the Department of Water Resources in 2009 Water Plan Update.

Response to comment OR87-33

In response to this comment, please see text change(s) in Section 5 in this FEIR.

Response to comment OR87-34

This is a comment on the project, not on the EIR. Delta Plan Policy DP P2 requires that public lands are considered first in selecting sites for ecosystem restoration projects.

5. **Delta Transportation and Access** (Section 19 of Delta Plan):

Section 19 reviews major roads of the Delta, but is silent regarding impacts to the more minor roads, and long term impacts to Delta through flow of traffic. Elimination of islands and roadways will have a negative impact on transportation and access, which in turn will have a residual negative impact on recreation and overall income from agriculture and recreation due to the increased cost associated with driving further distances around inaccessible areas. Navigation is a valid and historic¹¹ form of transportation in the Delta and Bay Area, and actions taken under the Delta Plan have the potential to severely limit both navigation and road travel in the Delta not just during construction time but also thereafter. For example, permanent closure or blockage of the Delta Cross Channel gates will limit boater navigation between the Sacramento River and Mokelumne River, which was possible prior when California first became a state and is still possible when the DCC gates are open and its low tide. Continued navigation on all historical waterways of the Delta should be protected, and use of county and levee roads that have been open to the public should also be protected. In addition, as a mitigation measure, the Delta Plan should suggest that permanent road signs be placed at all Delta road intersections, and that large size junction signs with solar lighting also be placed in higher traffic areas of the delta and at the road entrance to each public accessible island of the Delta. The sign should include the name(s) of the roadways at the junction as well as the island being approached or entered. DWR should also encourage the repair or replacement of the Real McCoy Ferry, that has not been operating since September 2012, which has caused substantial transportation hardship for North Delta residents who regularly used the ferry. And please note that contrary to the Delta Plan statements, CalTras online data indicated the former Real McCoy Ferry carried 400 or more vehicles per day on average and up to 700 on week ends, per CALTRANS online reporting. ATTACHMENT N. The reduced numbers reflected in the Delta Plan are due to the fact the older ferry kept breaking down and the new ferry, which replaced the old ferry, breaks down even more!

OR87-33

6. **Use of existing public lands within the Delta:** The Delta Plan should clearly direct that Conveyance or Restoration projects must be planned and completed using only public lands first and on nonprofit owned or managed lands, second, if public funding was used to purchase the nonprofit-owned land. For example, Public funds were reported to be used to purchase Staten Island, so Staten Island should be one of the locations targeted for restoration or conveyance as determined by studies and planning, so long as such use does not negatively impact other private property uses within the Delta. In addition, restoration projects that could create the possibility of salinity encroachment above 1 ppt north of Rio Vista should be prohibited due to the impact on prime farm lands of the Delta. No privately-owned lands should be condemned for use in conveyance or restoration projects until all public land use has been exhausted, and additional land use becomes necessary. In addition, if any private lands are sought through condemnation proceedings, the state can only utilize the property for the specific purpose stated, and the original property owners shall have the right to retain mineral rights for the lands claimed via eminent

OR87-34

¹¹

domain proceedings. Creation of this rule within the Delta Plan would help to assure landowners that the target of an eminent domain proceeding is truly for the stated purpose and not for an underlying purpose like capture of mineral rights that attach to the property unless stated otherwise.

OR87-34

7. **Recognition of negative impacts due to restoration or conveyance actions:** (See Attachment K) An example set by the restoration projects on Steamboat Slough, off Grand and Ryer Islands. The Delta Plan does not seem to address actual possible impacts of restoration actions already built and under study. The Delta Plan should assure that the BDCP, when incorporated fully into the Delta Plan, recognizes and mitigates for actual physical negative impacts to land owners affected by the restoration or conveyance projects. For example, all of the land owners along the Snug Harbor peninsula have seen an increase of high water incidents on our lands over the last 10 years. Prior to the Liberty Island flooding and the DCC closure experiments, we might have had one "high water" event every 10 years, and it always coincided with record rain flows. High water incidents at Snug Harbor is defined as standing water on the access road of the peninsula, and between six and 12 inches of river water encroaching into the lower yards of some areas of the peninsula, during one high tide period at least one day. The water here simply rises like a bath tub being filled up-its not rushing flood waters as portrayed in the media. However, since 1998 we've experienced a high water incident approximately every 2.8 years which is about triple the number of high water incidents based on local historical records. One of the main causes of the back up of water seems to be the "bottle neck" effect created by the Grand Island restoration project south of Snug Harbor, coupled with the levee berm added to Ryer Island on Steamboat Slough, south of Snug Harbor also. The two projects combined to reduce the width of Steamboat Slough to 150 feet, half of its former width in that area. While land owners who live on the river know to expect and prepare for floods, it is not right for DWR to intentionally or negligently cause rising waters on private properties in the name of "restoration". If the repeated flooding of Snug Harbor about every 2.8 years is planned to continue, DWR should also plan for mitigation measures that would pay for clean up of properties after the floods, and also repair damages caused by the excess back up of waters. In addition, the BDCP should include in its planning for setbacks of levees in the area mitigations for impacts to the landowners that could be further affected by the BDCP plan to convert at least portions of Steamboat Slough and/or Sutter Slough to shallow habitat for a portion of the year.

OR87-35

8. **"Use of Eminent Domain actions for lands needed for conveyance or restoration:** The Delta Plan could establish a "Value added to others" measure of value for privately-owned lands targeted for eminent domain under the Delta Plan. In order to discourage planning for unnecessary take of private lands, the Delta Plan should state that compensation to private land owners should be no less than 250% of the highest established market value of the land. Highest value time period can range from 1998 to the time of an actual eminent domain process instigation by the responsible state agency. The "Value Added to Others" rule would apply to privately owned lands needed for conveyance, restoration and any buffer zones, if the buffer zone restricts use of the private lands. The higher valuation method is proposed to recognize and help compensate the families who will lose family homesteads and lands that have been family-owned

OR87-36

Response to comment OR87-35

This is a comment on the project, not on the EIR. Regarding the relationship of BDCP to the Delta Plan, please see Master Response 1.

Response to comment OR87-36

This is a comment on the project, not on the EIR.

for many generations, a special class of ownership that carries sentimental value as well as economic value. In any case, land owners shall retain the mineral rights if such existed with the property, as is the case with many Delta properties that remain in the same family for many generations. Other alternatives to consider when privately-owned lands are needed for conveyance or restoration, could include the offer to "trade" lands of like kind and use, and would necessarily include the requirement that family homes and historic or sentimental structures would be moved to new "trade" site, with all expenses covered by the state or implementing agencies. Legislative changes to tax laws would be requested by the DSC such that there would be no tax impact to Delta private land owners who agree to the "trade" of lands instead of undergoing eminent domain process, even if the net result is a benefit of newer or better housing and lands for the displaced Delta land owner.

OR87-36

Response to comment OR87-37

Comment noted.

Response to comment OR87-38

Comment noted.

9. **Preserve Delta History:** Delta history has been revised several times in last few years, with important facts omitted. For example, the first section of the Delta Plan fails to recognize that the state SOLD the lands of the Delta specifically to be reclaimed to be used for irrigation. Another example is the lack of historic details that PGE and its related power companies over the years have played in the development of dams that prohibit water flow into the Delta, and the impacts of PGE actions on the Delta, including the use of McDonald Island for natural gas underground storage, and the possible impacts of additional withdrawal of natural gas which can cause further subsidence of Central Delta islands. The Delta Plan should direct that a detailed summary of Delta history be compiled by DPC or a consultant, to be reviewed and approved by delta area land owners, validated with corroborative independent maps and publications, and then published, and all subsequent reports that refer to the Delta will be required to use the verified Delta History and refer to the document. Note that I have a collection of incorrect Delta maps and Delta data published by DRW, its consultants or scientists, and the state should make an effort to notify the publishers of incorrect data to make corrections. You might start with DWR and PPIC and those who still refer to the original DRMS Phase 1 Report published in 2008, containing false data regarding Delta Island flood history, Delta seismic risk, and Delta elevations in some areas, which was partially corrected in December 2009, but many writers even as late as December 2011 continue to use the incorrect data from the DRMS technical attachments.

OR87-37

10. **Delta Recreation and Agriculture:** Delta Plan Section ...

The Delta should be recognized on the state travel website as a unique defined destination recreation and agriculture area of historical significance. The Delta is the cornerstone of state's water supply system, navigation history, prime farm lands and has maintained its rural charm. One of the best ways to promote the Delta recreation and agriculture is to consistently recognize the area in state literature and at public shows and displays. For example, the state display at the most recent fishing & boating show in Sacramento, last week end, did not recognize the existence of the Delta at all. Instead, the focus of the DWR display was lakes located in other areas of the state, when the Delta Region is within two miles of the boat show! Obviously the state says one thing, but does another when it comes to Delta recognition and promotion. The effort to designate the Delta as a National Heritage Area is still not clear on how it will help promote the Delta as a unique destination.

OR87-38

11. **Mitigation for Invasive Species:** Delta Plan Section ...

See Attachment G. Inadequate mitigation for effects of low water flow that lead to the growth of non-native aquatic species: The Delta Plan does not adequately recognize the long term effect of reduction of fresh water flow in the North Delta, which will increase the infestation of egeria densa along the banks of navigable waterways and will clog sloughs and areas that once were good fish spawning habitat. Lower water flow, especially in summer and fall months, will expedite the increased growth of non-native aquatic species, and the Delta Plan provides neither mitigation nor funding sources to take care of this long term problem. Below is a photo taken in fall 2011 at the "meadows" area boat launch. Attachment G provides other recent photos of egeria densa, duck weed and other invasive aquatic species at the Decker Island restoration area, along Steamboat Slough, and other water weeds in other areas of the Delta. Increased water exports will further exasperate the situation without adequate plan for mitigation, an issue basically ignored by the Delta Plan cost estimates, not just the proposed actions.



The spreading problem of invasive aquatic species in the Delta may be one of the major factors limiting the effectiveness of the proposed channel shelf berms or projects because the submerged area intended to be a refuge for smaller fish will instead be infested with aquatic weeds, thereby limiting access to the small fish. Most locals say the egeria densa along the banks of Steamboat Slough and the Sacramento River, in the

Response to comment OR87-39

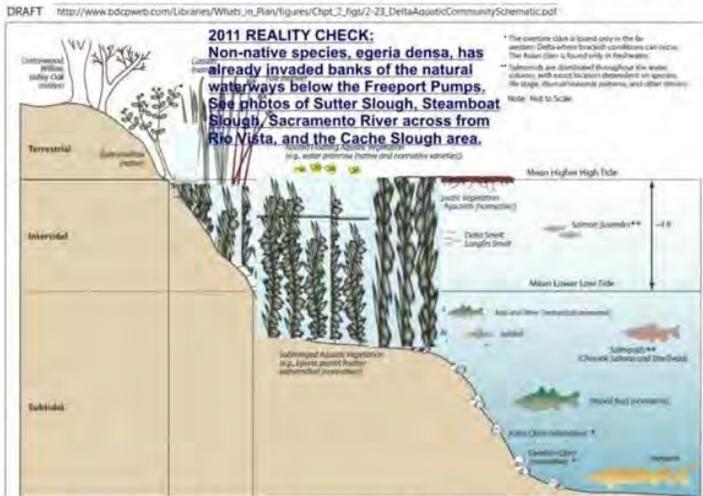
Mitigation Measure 4-1 addresses the potential invasive species-related impacts of projects under the Delta Plan and specifies that "An invasive species management plan shall be developed and implemented for any project to ensure that invasive plant species and populations are kept below preconstruction abundance and distribution levels." The mitigation will thus be refined and made more specific at the project level.

OR87-39

Meadows area, on Snodgrass Slough and along smaller tributaries of the San Joaquin River, and in Franks Tract (until treated) is the worst condition of infestation in anyone's memory. The increase in *Egeria densa* seems to coincide with the increase in exports to other areas of California. Perhaps its time to add 10% to the cost of the exported water to pay for Delta waterway clearing programs that will be needed due to the extra exports?

No comments

- n/a -



During a

“drought” period MWD was able to store up extra water at the same time as invasive aquatic species grew substantially, and fish populations declined dramatically. Has the BDCP addressed this connection?



11. **Discrimination:** The Delta Plan as written discriminates between one class of persons for the benefit of another class of persons. If one of the coequal goals is to assure a reliable drinking water supply, that goal should be achieved equally within the Delta watershed as without. If too much fresh water is exported, the result will be provision of fresh water to non-Delta residents at the expense and detriment of in-Delta residents, who hold original water rights. OR87-40

12. **Revising the legal Delta Region to include the Suisun Marsh area:** The Suisun Marsh area has been the subject of planning and restoration through two SF Bay Area organizations, the BCDC and the SF Estuary Project. Until a few years ago, the Suisun Marsh was never listed as part of the Delta region, and it was not legislatively included in the legal Delta region when the region was defined and approved. To make changes now by adding the Suisun Marsh to the Delta appears to be an intentional creation of confusion and conflict for an unknown long term purpose. If approved in the Delta Plan, there will be overlap and duplication or conflict of planning between the BCDC, SF Estuary Project, and the BDCP and Delta Plan. There is no stated logical purpose to include the Suisun Marsh area as part of the Delta at this time. OR87-41

13. **Matters of silence:** One cannot comment on important facts or considerations that are not in the Delta Plan. For examples: Why does the Delta Plan ignore the impact of subsidence due to extraction of natural gas below the Delta? Will drilling for oil in the Antioch area be allowed and how will this impact the area water quality? Why does the Delta Plan ignore the impact of the PGE-owned/managed dams north of the Delta which most likely contribute greatly to the loss of fish spawning areas and provide only enough energy for conveyance of water to Southern California? Why doesn't the Delta Plan acknowledge and list all the interim conveyance projects, flood control projects and restoration projects already underway or nearing completion which are basically pre-approved under the Delta Plan? Why does the Delta Plan ignore the fact that many of the farms held by the same families for many generations hold mineral rights to the property and the state wants to own those mineral rights, so have targeted Delta lands for "conveyance or restoration" if they have known oil and natural gas reserves below, so the state can validate eminent domain of those properties? Why doesn't the Delta Plan provide accurate elevation data for the targeted areas, when such data is available? Finally, why does the Delta Plan drafters (and BDCP, incorporated by reference) intentionally misrepresent the location of Steamboat Slough and the property owned by this commenter? (see attachment J) What reasonable purpose does this serve? OR87-42

(go to next page)

Response to comment OR87-40

This is a comment on the project, not on the EIR.

Response to comment OR87-41

The Delta Plan and the EIR have included both the legal Delta and the Suisun Marsh in the "Delta" in accordance with the Delta Reform Act (Water Code § 85058).

Response to comment OR87-42

This is a comment on the project, not on the EIR.

Response to comment OR87-43
Comment noted.

In summary, the Delta Plan was determined long ago before there was opportunity for meaningful input by the "stakeholders" who will be most negatively affected by the plan. In any case, at the meetings I attended, and the agency representatives I've met with, I have simply asked that the public be provided with verified facts about the Delta, not just the media hype. The Delta Plan might be a good time to start correcting the false data disseminated by DWR and its allies over the last 8 or more years. Taking action to revise the Delta based on false data will certainly result in liability for those agencies and individuals who intentionally ignore the incorrect data.

Please go to <http://snugharbor.net/comments.html> for the final draft of this document, which will be submitted by 2/2/2012 and also posted online.

OR87-43

Respectfully submitted,

In summary, the Delta Plan was determined long ago before there was opportunity for meaningful input by the "stakeholders" who will be most negatively affected by the plan. In any case, at the meetings I attended, and the agency representatives I've met with, I have simply asked that the public be provided with verified facts about the Delta, not just the media hype. The Delta Plan might be a good time to start correcting the false data disseminated by DWR and its allies over the last 8 or more years. Taking action to revise the Delta based on false data will certainly result in liability for those agencies and individuals who intentionally ignore the incorrect data.

Please go to <http://snugharbor.net/comments.html> for the final draft of this document

Nicole S. Suard, Esq.

Nicole S. Suard, Managing Member, Snug Harbor Resorts, LLC

Incorporated by reference are all links and attachments.

ATTACHMENT A TO DELTA PLAN COMMENTS

Last update 1/25/2012 DELTA TIMELINE	
<p>A REVIEW OF DELTA HISTORY 1840 to 2011 using links to ORIGINAL MAPS and DOCUMENTS of the past 160+ YEARS</p>	
<p>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 http://deltarevision.com. Many of the historic Delta maps are found at http://www.deltarevision.com/Delta_maps/Delta_Maps.htm. If you don't know about the Sacramento San Joaquin Delta region, here's a short video you might want to see first: http://www.youtube.com/watch?v=ht.mpvV3bc9M or go to</p>	<p>Data compiled by N. Suard, Esq. Published January 2012 by Snug Harbor Resorts, LLC a peninsula off Ryer Island by Steamboat Slough in the Sacramento San Joaquin Delta region of Northern California.</p> <p>For Educational uses only. Copyright January 2012</p> <p>—OR87-44</p>
<p>Jan 2012</p> <p>CURRENT DOCUMENTS IN EIR/EIS COMMENT PERIOD & THE CONSTRUCTION PROJECTS UNDERWAY IN AND AROUND THE DELTA RIGHT NOW</p> <p>(Note: While people talk, the CALFED "Preferred Alternative" of a central conveyance through the Delta, and also portions of the "Dual Conveyance" option are being built...the projects are called different names. Ignore the names and look at the function of the Projects http://deltarevision.com/2012_delta_construction.html.)</p>	<p>DESCRIPTION</p>
<p>http://www.deltacouncil.ca.gov/delta-plan-draft-eir go down the page to get to the important documents...comments accepted through 2/2/2012</p>	<p>New plan for the Delta</p> <p>—OR87-45</p>
<p>http://www.deltacouncil.ca.gov/sites/default/files/documents/files/Fifth_Staff_Draft_Delta_Plan_080211.pdf</p>	<p>New plan for the Delta incorporated into the EIR by reference so must be read with Delta Plan</p>
<p>http://www.safca.org/documents/combined20state20submittalsmall.pdf (work being done now) for a map showing the work being done at Egbert Tract per the SAFCA.org website or see http://deltarevision.com/2012%20docs/construction/yolobypass-egberttrace-2012construction.jpg and http://deltarevision.com/2012%20docs/construction/egberttractian2012improvements-safcaplans.jpg and http://deltarevision.com/2012%20docs/construction/bypass-dec2011.jpg</p>	<p>Yolo Bypass changes, weir modifications, new intakes with fish screens north of Sacramento</p> <p>—OR87-46</p>
<p>http://www.water.ca.gov/cvfmip/docs/2012_CVFPP_FullDocumentLowRes_20111230.pdf work being done now in areas like Boudin Island off Hwy 12...map:</p>	<p>2012 Central Valley Flood Protection Plan, which is different than...</p>
<p>http://www.water.ca.gov/cvfmip/docs/SPFCDescriptiveDocumentNov2010.pdf</p>	<p>State Plan of Flood Control Description Document (2010)</p>

Response to comment OR87-44

Comment noted.

Response to comment OR87-45

Comment noted.

Response to comment OR87-46

Comment noted.

	http://deltarevision.com/2012%20docs/construction/12-calledupdate12-2011.jpg http://deltarevision.com/2012%20docs/construction/2012-ndip-projects-underway.jpg http://deltarevision.com/2012%20docs/construction/intakes1.jpg http://deltarevision.com/2012%20docs/construction/intakes2.jpg http://deltarevision.com/2012%20docs/construction/folsom-south-diversion.jpg	Note that most of the "building blocks" of the CALFED 2000 plan have been built or are under constructions...intake on the Sacramento River, revision to Mokelumne River conveyance, modifications to McCormack-Williamson Tract, etc.	
	http://bdcweb.com/Library/Documents/LandingPage/BDCPPPlanDocuments.aspx also incorporated into the Delta Plan if/when decisions are made	Bay Delta Conservation Plan	
	http://www.baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/First_Amendement_BDCP_MOA_Redline_Edits_12-16-11.sflb.aspx	2012 BDCP Memorandum of Agreement done without prior to public input.	
	http://www.dot.ca.gov/hq/tpp/californiainterregionalblueprint/images/maps/Priority_Reg_Corridors.pdf http://www.dot.ca.gov/hq/tpp/californiainterregionalblueprint/images/maps/Statewide_Gap_Map.pdf http://www.mtc.ca.gov/planning/2035_plan/FINAL/72035_Plan-Final.pdf http://www.sacramentoohipchannel.org/ http://www.zeo.ucdavis.edu/CTP/Consultation%20Meeting/CTP%20Addendum%20Final%20Draft%204_9_07W/070707a.pdf http://www.sacregionblueprint.org/sacregionblueprint/the_project/maps/counties/sacramento/delta/scenariosmap.html	California Transportation Planning	OR87-46
	http://www.water.ca.gov/floodmgmt/dsmo/sab/drmsa/phase2_information.cfm	DRMS Phase 2...posted but not for comment	
	http://deltarevision.com/wrong-maps-of-the-delta.html	A smattering of the maps used for the plans for the Delta....you will see that some of these planners do not know the Delta they are revising!	
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	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1840delta.jpg http://www.deltarevision.com/2011/historic-timeline/historic_maps/1850_mining_districts.jpg	John Sutter settled in Sacramento: He considered the proximity of two mighty rivers the American and Sacramento a significant benefit to the fledgling settlement.	OR87-47
1852	http://www.davidrumsey.com/luna/servlet/view/search?QuickSearch=QuickSearch&q=1852+sacramento+river&sort+Pub_List_No+InitialSort%2CPub_Date%2CPub_List_No%2CSeries_No&search+Search http://www.deltarevision.com/2011/historic-timeline/historic_maps/1852_steamboat-middle_fork_travel.pdf http://www.deltarevision.com/2011/historic-timeline/historic_maps/1850map.jpg http://ccrm.berkeley.edu/resin/pdfs_and_other_docs/background_in/EarlyReclamationandAbandonmentofDelta.pdf	Short video recounting the first official survey of the Sacramento River by Commander Caldwell in 1852: http://www.youtube.com/watch?v=kS2Tieuc4&feature=mfu_in_order&list=UL or http://snugharbor.net/old_sacramento_river_video.html	
1853	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1853_sac_delta.jpg	Explorations	OR87-48

Response to comment OR87-47

Comment noted.

Response to comment OR87-48

Comment noted.

	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1853_blake_geology_map.jpg	Geologist Blake map	
1854	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1854_sacramento_river.jpg	Closer look at Rio Vista area	
1854	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1854official_map_of_california.jpg	Official county map of California...but the county lines later change (See Solano and Sacramento)	
1855	http://www.deltarevision.com/2011/historic-timeline/historic_maps/san_joaquin_river_1860.jpg http://www.deltarevision.com/2011/historic-timeline/historic_maps/hutchings_sacramento_san_joaquin_steamboat_routes1860s-5.jpg http://www.deltarevision.com/2011/historic-timeline/historic_maps/1849_sacramento.jpg http://www.deltarevision.com/2011/historic-timeline/historic_maps/photos/794px-Yosemite%20%28%20wheel%20near%20Galbraith%20dock.jpg http://smugharbor.net/images/2010/steamboat_slough_defined.jpg	Sacramento River floods & what the area looks like in sketches	
1855	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1855_california_survey.jpg	Public survey but it appears some of the delta area is not surveyed	
1862	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1860_steamboat_travel_steamboat_slough.jpg http://www.deltarevision.com/2011/historic-timeline/historic_maps/ferry_landing_grand.jpg http://www.deltarevision.com/2011/historic-timeline/historic_maps/1850s_steamboat_races2.jpg http://www.deltarevision.com/2011/historic-timeline/historic_maps/1850s_steamboat_races1.jpg http://www.deltarevision.com/2011/historic-timeline/historic_maps/1856_river_landings.jpg http://www.deltarevision.com/2011/historic-timeline/historic_maps/hutchings_california_magazine.jpg http://www.deltarevision.com/2011/historic-timeline/historic_maps/1867_california_steam_navigation_co_route_up_steamboat_slough.jpg	Quote about Steamboat Slough from Hutchings Sketch of farm on Grand Island Description of life on a steamboat Travel times Mr. Hutchings California Magazine	OR87-48
1860's	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1860s_stagecoach_travel_routes.jpg http://www.deltarevision.com/2011/historic-timeline/historic_maps/1865_steamboat_sacramento_routes.jpg http://www.deltarevision.com/2011/historic-timeline/historic_maps/1865_rr_map.jpg	Overland routes. RR travel A look at the seaports. By 1868...American River Rechannelized: In an effort to create faster flows that might scour out mining debris, Sacramento officials straightened the last two miles of the American River. When the project was completed in 1868, the American joined the Sacramento River about a mile upstream of its old location.	
1860s	http://smugharbor.net/images/historic/delta_banks1860s.jpg	May be miners slough or steamboat/sutter? Shows silting	OR87-49

Response to comment OR87-49
Comment noted.

1866	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1866land_grants.jpg	Map of land grants	
1867	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1867topo.jpg		
1869	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1865delta.jpg	Lands of the Tidelands Reclamation Company	
1871	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1871_sacano_county.jpg	Notice sac river	
1871	http://www.deltarevision.com/1848-1989_docs/1871salmon_steamboat_slough_floating.pdf	Detailed description of how many salmon are found at the confluence of Steamboat Slough, Sacramento River and Cache Slough area	
1873	http://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~1635~180047-Map-Of-The-San-Joaquin-Sacramento-	Often used map. Shows the "overflowed lands" to be irrigated. Look at map key. Shows existing channels	
1873	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1873_sacramento_san_joaquin_tulare_map.jpg	Often used map at drv. Land sold to persons to farm and improve	
1875	http://www.deltarevision.com/1848-1989_docs/Amis_1875_1877.pdf	\$2 per acre to be reclaimed	
1876	http://snugharbor.net/images-historic/1875hd_map.jpg	Example of survey and deed	
1876	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1876_nrcal_rr.jpg	Railroads, ownership and counties. Note delta waterways	CR 87-49
1880		Illustrated Wasp Sketch as shown at Sacramento Historic Society website revised per 2002 copyright notice-original sketch was reflective of political push to get mining debris out of Steamboat Slough and "Old River" Sacramento Hall Plan for Flood Control of the Sacramento and Delta region	
1886	http://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~207679~3003423:California-State-Engineering-Depart?sort=Pub_List_No_InitialSort%2CPub_Date%2CPub_List_No%2CSeries_No&view=sacramento%2Bsan%2Bjoaquin%2Bdelta-sort=Pub_List_No_InitialSort%2CPub_Date%2CPub_List_No%2CSeries_No&:RUMSEY~8~1&ms=3&ts=4 http://snugharbor.net/images/2010/steamboat_slough_old_shipwrecks.pdf http://snugharbor.net/images/2011/deltaatuff/1887-delta.jpg Section of very large Hall map, showing the area we call the "legal Delta" today	Hydraulic mining fills up the ravines and delta main channels: Sac Bee graphic, other info 1880 First Comprehensive Flood Control Plan: In response to the 1878 flood, State Engineer William Hammond Hall developed an integrated, comprehensive flood control plan for the Sacramento Valley. The plan subsequently came to include a system of levees, weirs and bypass channels to protect existing population centers.	
1892	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1892_california.jpg	State trade board: counties and roads/rr	
1894	http://www.deltarevision.com/1848-1989_docs/1894steamboatSloughChannel.pdf	About steamboat slough and how its silted in	
1985	http://deltarevision.com/1848-1989_docs/sacramento_shipwrecks1.pdf	Dwr shipwrecks summary	

No comments

- n/a -

1895	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1895_randmically_saccountvoff.jpg	Solano vs sacramento	
1895	http://www.deltarevision.com/2011/historic-timeline/historic_maps/old_norcal_bikemap.jpg	Biking trails!	
1896	http://www.deltarevision.com/2011/historic-timeline/historic_maps/ryer1896.jpg	Ryer and Longpoint	
	http://www.spk.usace.army.mil/projects/civil/Delta/index.html http://www.spk.usace.army.mil/projects/civil/Delta/Docs/Plate1.pdf	USACE description and links	
1901		State population is 1.6 million. The Federal Reclamation Act is passed, passed on the Hall Plan from 1886 and influenced by the Marshall plan	
1906	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1908delta_survey_cover.jpg http://www.deltarevision.com/2011/historic-timeline/historic_maps/1908_map_chart.jpg http://www.deltarevision.com/2011/historic-timeline/historic_maps/1908_san_joaquin_survey_sample.jpg	Delta survey shows the island names as they are today & levees and subsidence of that time. Also show modern Delta map that will be base map for Delta Videos	
1906		SF earthquake...no levee fails	
1908	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1908_ca_board_of_trade_ship_routes.jpg http://www.deltarevision.com/1848-1989_docs/steamboat_slough_old.pdf	Map shows shipping channels, use of Steamboat Slough	OR87-50
1911		State Reclamation Board is formed	
1912	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1912ca_atlas.jpg	Counties seem set. Steamboat main channel	
1913	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1913Ryer-sh.jpg	Shows ferry landing and other landings	
1913	http://deltarevision.com/1848-1989_docs/1913_delta_floods_summary.pdf	Summary of delta flooding	
1914		Surface Water Rights Law is revised	
1917		Congress authorizes Sacramento Flood Control System: After a series of violent floods between 1902 and 1909, the Comprehensive flood control project envisioned by Hall gained federal financial authorization in 1917.	
1923	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1921_steamboat_slough_navigation.JPG	Report to congress to improve delta navigation	
1925	http://deltarevision.com/1848-1989_docs/1925_report_to_congress_Delta_river_navigation.pdf.pdf	First section of Delta floods timeline-focus	
1927		St. Engineer Hayatt begins a study of the Central Valley Project (CVP) influenced by the Marshall Plan	
1927	http://snugharbor.net/imagos-maps/1927delta.jpg	Delta king and Queen route	
1927	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1927_dwr_bulltin.jpg	State planning but it becomes a federal project	

Response to comment OR87-50
Comment noted.

1929	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1929_delta.jpg	Soundings and planning	
1929		Market crash & the start of the Great Depression nationwide	
1930	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1930_CalWaterPlan.pdf	Copy of the water plan	
1930	http://www.deltarevision.com/2011/historic-timeline/historic_maps/delta_timelines.pdf	Flood timeline look at period before 1930 Delta Salinity investigation begins. Measure is 1 ppt, which is a very low level of brackish water)	
1933	http://deltarevision.com/1890-1999_docs/1933Sanloazuin.jpg	CA voters approve CVP; Federal Authorization of Central Valley Project & Dredging of Stockton Deep Water Channel (can bring in salt water at low fresh water flows)	
1935	http://deltarevision.com/images/historic/1935soils.jpg	Soil survey and navigation	
1935		President Roosevelt releases emergency funds to CVP to build it, creating jobs for California. USBR is the builder	
1936	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1936_delta_uplands.jpg	North Delta is uplands	
1937	http://www.jhc.ca.gov/studies/activestudies/watergovernance/MilliganUn09.pdf http://www.spk.usace.army.mil/organizations/co/spk-co/regulatory/program.html http://www.spk.usace.army.mil/organizations/co/spk-co/regulatory/section10text.html http://www.spk.usace.army.mil/organizations/co/spk-co/regulatory/ca_waterways.html http://www.usbr.gov/history/cvpintro.html	Quote about 1937 Rivers and harbors act-page 6 Nations most valuable resource More on the codes Rivers and harbors of California Usbr history	OR87-51
	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1940sacriver_flood_farmers.jpg	Photo of floods	
1940s	http://byydelatoffire.water.ca.gov/DeltaAtlas/03-Waterways.pdf	Delta atlas from dwr docs	
1940		Export begins via Contra Costa Canal	
	http://www.deltarevision.com/california_delta_1930s_to_1980s.htm	Documents from 1930-1970s	
1941	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1941_california_gill_and.jpg_map_ad.jpg http://www.deltarevision.com/1848-1989_docs/Soil%20Survey%201936%20Issued%2007-1941.pdf	Construction, pipes, dams, etc Soil survey report	
1944	http://www.safca.org/history.html	Shasta Dam and Reservoir construction also Folsom	
1945	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1945_paw_water_resources.jpg http://www.deltarevision.com/2011/historic-timeline/historic_maps/1945_swo_survey_plans.jpg	Dams for power and flood control and recreation Central canal shown	
1948		Contra Costa Canal system completed	
1949	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1949_central_valley_project_cover.jpg	Central canal proposed...same as the "fresh water	OR87-52

Response to comment OR87-51

Comment noted.

Response to comment OR87-52

Comment noted.

	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1951_dwr_planning.pdf huge doc to open http://www.deltarevision.com/1848-1989_docs/sac_river_deep_water_ship_channel_project_1949_07.pdf	corridor" and "central conveyance" and other current planning names	
1949	http://deltarevision.com/1848-1989_docs/dwr_1949_port_channel_hydro_analysis.pdf http://deltarevision.com/1848-1989_docs/sac_river_deep_water_ship_channel_project_1949_07.pdf	Analyzing sac ship channel	
1951	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1951_dwr_planning.pdf	Delta-Mendota Canal and Delta Cross Channel initial units of CVP completed	
1952		Delta-Mendota Canal completed - 4,6000 cfs from Tracy Pumping Plant delivers 3,210 cfs to Mendota canal	
1952	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1952_usgs.JPG	Topo of the delta waterways	
1954			
1955	http://www.deltarevision.com/1848-1989_docs/ceerps_oma_manual_for_fremont_weir_to_sac_weir.pdf	Yolo bypass weirs	
1956	http://deltarevision.com/images/historic/reclaimed_islands.jpg		
1959	http://deltarevision.com/1848-1989_docs/Pacific%20Historian1959_delta_history.pdf	Dr. John Thompson on the Delta...note his map of Sac river	
1959	http://www.water.ca.gov/pubs/dwrnews/dwr_news_people_fall_2010/news-people-fall2010.pdf 2010 summary included	Burns-Porter Act and Delta Protection Act	
1960	http://www.water.ca.gov/swp/history.cfm	Voters approve State Water Project financing, launching the State Water Project (SWP) & Sacramento River Flood Control Project completed. See 110 year flood timeline	
1961	http://www.water.ca.gov/swpao/docs/wsc/ACFC_O_C.pdf	Zone 7 water rights	
1960	http://www.deltarevision.com/2011/historic-timeline/historic_maps/ca_water_development_map.jpg	Modern map showing history of development of water projects	
1963	http://www.deltarevision.com/1848-1989_docs/Physical%20Environment%20and%20Agriculture%20of%20Sacramento.pdf	Soil survey of Delta	
1963		Sacramento Deep Water Channel construction	
1965	http://www.deltarevision.com/1848-1989_docs/1965-66_canal_proposal.pdf	Central canal proposal and Interagency Delta Committee report recommends Peripheral Canal	
30-66	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1930-1966_flooding-dwr.jpg	DWR flood map and Flood timeline-second section	
1966	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1966fish_studies.jpg	Fish studies ongoing	
1967		Adoption of ag salinity standards of Water Right 1275-	

Response to comment OR87-53
Comment noted.

OR87-52

OR87-53

		water rights for the SWP Oroville Dam & Fish Hatchery and Delta Pumping Plant & fish facility	
1968		Adoption of Resolution 68-17, a water quality policy for the Delta D-1379?	
1968	http://snugbarber.net/images/2010/webcam/steamboat_slowly_1968.jpg	Delta boating on ss	
1971	http://www.waterrights.ca.gov/hearings/decisions/WRD1379.PDF	Delta Water Rights D-1379: conditions o operation of CVP and SWP to protect fish & wildlife	
1972	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1973_delta_boating.pdf http://www.deltarevision.com/2011/historic-timeline/historic_maps/1972_delta_soils.JPG	Delta recreation Delta soils	
1973		Adoption of Resolution 73-16 re State water quality control for the Bay/Delta. California Aqueduct completed to Southern California & Way Bill-Delta Levee maintenance	
1973	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1973_ryer_island_soils.jpg	Soil surveys and planning for dredging	
1974		North Delta Water Agency forms to represent North Delta land owners, which result in the NDWA contract & water quality and flow protections. 1980 contract — OR87-53	
1975	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1975_central_valley_project_water_distribution.jpg http://www.deltarevision.com/2011/historic-timeline/historic_maps/1975_central_valley_project_water_distribution.jpg http://www.deltarevision.com/2011/videos/waterflow/1976.jpg	Good maps showing how/where water is delivered	
	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1975_delta_flooding-dwr_Page_3.jpg http://www.deltarevision.com/2011/historic-timeline/historic_maps/1975_delta_flooding-dwr_Page_2.jpg http://deltarevision.com/maps/islands_floods_levees/1975_delta_floods-dwr.pdf http://deltarevision.com/maps/historic/1975_controlled_flood_islands_of_the_delta.jpg	Controlled flooding in 1975 DWR issue plan for Delta Levee Improvements and Brian Atwater and crew begin Delta map studies	
1975	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1_delta_timeline_dwr.pdf	DWR review of the Delta population and recreation facilities	
1977	http://snugbarber.net/images-historic/1977SNUG_SOIL_SURVEY.jpg http://www.deltarevision.com/images/pdfs/1977SacDelta_report.pdf	Sample of a soil survey of the delta Water policy history paper	
1977	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1977_delta_monitoring_stations.jpg http://www.deltarevision.com/2011/historic-timeline/historic_maps/diversions.pdf http://www.deltarevision.com/2011/historic-timeline/historic_maps/maxsalt_21to43.pdf http://deltarevision.com/1848-1989_docs/Pacific%20Historian1959_delta_history.pdf	Monitoring water quality	
1977	http://www.deltarevision.com/1848-1989_docs/1965-66_canal_proposal%2021.pdf http://www.deltarevision.com/1848-1989_docs/Turrentine-Jackson-1977.pdf	New approach to p canal Review of water policy	OR87-54

Response to comment OR87-54
Comment noted.

1978	http://www.water@its.ca.gov/hoarings/decisions/WRO1485.PDF	SWRCB issues Water Rights decision: D-1485. Adoption of 1978 WQCP -Delta & Suisun Marsh
1980	http://www.water.ca.gov/swp/milestones.cfm	Senate Bill 200 specifies Peripheral Cana
1980		State reviews old deeds and land grants in the Delta...notes if mineral rights were reserved...or not, because state is leasing out rights for natural gas wells on state properties
1981	http://northdw.com/Documents/NDWA%20Contract.pdf http://deltarevision.com/1848-1989_docs/1981_NDWA%20Contract.pdf	Ndwa contract to assure water quality
1981	http://riverland.com/images/maps/pooja/usgs_lowpoint.jpg	Other ryer named
1982	http://www.water.ca.gov/swp/milestones.cfm#1980	Voters overwhelmingly defeat Proposition 9, the Peripheral Canal
1982	http://www.deltarevision.com/2011/historic-timeline/historic_maps/1982_atwater_survey_of_the_delta_isleton_dh.jpg http://www.deltarevision.com/2011/historic-timeline/historic_maps/1982_atwater_survey_of_the_delta_kv.jpg	Atwater maps compare levee locations in 1852 to current. Bond act turned down.
1983		Record rain year with substantial Delta flooding-some Delta residents feel flooding was unnecessary and an intentional "punishment" for opposition to the peripheral canal
1984	http://www.deltarevision.com/1848-1989_docs/1982_dwr_delta_flood_history.pdf	1984 review of floods
1985	http://aquadoc.typepad.com/waterwored/2009/10/video-presentation-loyd-g-carter-on-californias-water-mess.html	Selenium is recognized as a toxin runoff from areas of Westside Water Agency, lower Central Valley
1985	http://www.smithsonian.gov/images-historic/Pacific%20Historian1958_delta_histov.pdf	Dr. John Thompson, often quoted in DWR docs, did summary for Pacific Historian
1986		Coordinated Operating Agreement between State and feds to determine the respective water supplies of the CVP and SWP while allowing for a negotiated sharing of Delta excess outflows and the satisfaction of in-basin obligations between the projects
1986		SWP 4-pumps agreement with DWR and FWS for offsetting adverse fishery impacts by diversions
1986		Record waterfowl-Delta flooding-see time line. CVP/SWP Coordinated Operation Agreement & DWR-DFG fishery mitigation agreement

No comments

- n/a -

OR87-54

1986	http://www.deltarevision.com/2011/historic-timeline/historic-maps/1986-california-earthquake-locations.jpg	Seismic study of California	
1986	http://deltarevision.com/1948-1989_docs/1986-tyler_island_flood.pdf	100 year flood in the Delta. Look at who flooded... Record Flood: The February 1986 storm dumps 10 inches of rain on Sacramento in 11 days. The American River dumps more water into Folsom than it is designed to handle. After 2 days of releases at the design level, (115,000 cubic feet per second (cfs)), officials boost releases to 134,000 cfs. Folsom performance downgraded to about a 60-year storm.	
1988		North Bay Aqueduct and Suisun Marsh salinity control gates & Senate Bill 34 to rebuild Delta Levees: Delta Food Protection Act of 1988 South Delta Control barriers-temp	
	http://www.deltarevision.com/2011/historic-timeline/historic-maps/1980s_doc_studies.jpg	Uplands and lowlands	
1988	http://www.deltarevision.com/maps/Delta_historic_maps/1980s_delta_wetlands_storage.jpg	Delta wetlands or ids. In-Delta water storage -select Delta islands proposed by the corporate land owners of those islands	
	http://www.deltarevision.com/maps/salinity-toxins/maxsalt_44to90.gif http://www.deltarevision.com/maps/salinity-toxins/maxsalt_21to43.gif	Wq measured as 1000 parts chloride per million parts water	OR87-55
1990	http://www.deltarevision.com/maps/salinity-toxins/1990salt.jpg	State population is 30 million. Improvements to Delta levees begin to be implemented regionally. Report map shows how water flows in the Delta	
1991	http://www.deltarevision.com/maps/salinity-toxins/1991_usgs.jpg http://www.deltarevision.com/maps/salinity-toxins/delta_salinity.jpg	USGS hydraulic region for Sacramento included part of the Delta	
1991		Four new pumps added to Banks Delta Pumping Plant. Adoption of 1991 WQCP for Salinity for Bay & Delta. EPA disapproval	
1992		D 1630-interim water rights terms and conditions for CVP and SWP: Delta Protection act of 1992 & Federal CVP Improvement Act (CVPIA)(PL 102-575) & Governor's Water Policy-Bay-Delta Oversight Council	
1992		Mandated changes to the CVP for the protection, restoration and enhancement of fish and wildlife	
1993		Governor requests SWRCB to cease work on D-1630 and develop long-term standards. USFWS issues biological opinion for Delta Smelt under Endangered Species Act	
1993		FWS BO for Delta Smelt and Sacramento Spittail	

Response to comment OR87-55
Comment noted.

1994		NOAA issues biologic opinion for winter-run Chinook salmon. Bay-Delta Accord, Delta WQ standards & CALFED Bay-Delta Program funding	
1994	http://www.water.ca.gov/environmentalservices/docs/mintry_plus/FEIR.pdf page 124	Summary of Monterey Agreement-SWP transfers and allocation of water rights	
1995	http://calwater.ca.gov/content/Documents/Library/SFBayDeltaAgreement.pdf http://www.water.ca.gov/swbao/docs/bulletin/95/view/figures/fig1-1.htm http://www.waterboards.ca.gov/waterights/water_issues/programs/bay_delta/wq_control_plans/1995wqcp/docs/1995wqcpb.pdf	SWRCB issues water quality control plan for bay & Delta (1995 Bay-Delta Plan); adopts Water Right Order 95-6 to amend permits for CVP & SWP	
1995		Monterey Agreement	
1990s	http://www.deltarevision.com/1990-1999_docs/delta_wetlands_project1995.jpg	Waterflow timeline showing exports. Waterflow timeline showing fish decline.	
1995	http://www.water.ca.gov/iep/newsletters/1995/EPNewsletterSummer1995.pdf	page 10 usgs page 12	
1995	http://riverisland.com/imaget/ev.pdf/seismic/1995soil_sample_map.jpg	Other river island soils samples: Gas and Oil explorations in the Suisun Marsh area	
1996	http://www.deltarevision.com/1990-1999_docs/1996-CALFED_fish_species_report.pdf	Fish problems	
1997		High precipitation winter results in flooding of some areas of the Delta: See flood time line for 110 years Record Flood: The fifth record flood in 46 years occurs over the New Year's holiday. Unprecedented flows from rain and melted snow surge into the Feather and the San Joaquin. Sacramento is spared when the fury of the storm hits 40 miles north in the Feather River. Levee failures flood Olivehurst, Arboga, Willon, Manteca, and Modesto...with some controlled flooding of Delta islands and waterways	OR87-56
1997	http://www.water.ca.gov/iep/newsletters/1998/Winter/Red%20Tide%20in%20Berkeley%20Marina%20Raise%20Concern%20for%20Toxic%20Bloom%20in%20Central%20Bay.pdf	calfed influenced 1997	
1998	http://www.deltarevision.com/1990-1999_docs/NHI-Packard_delta_study1998.pdf http://www.deltarevision.com/1990-1999_docs/1988Diversion_Effects_on_Fish_1.pdf	Report by Packard Foundation & National Heritage Institute Recommends a through-Delta canal as the preferred alternative, utilizing Mokelumne River & DCC reoperation, with barriers. Liberty Island flooded, to be used for Smelt studies.	
1998	http://www.ppic.org/main/about.asp	An organization called PPIC begins publishing studies funded by several major nonprofit organizations which promote the diversion of more Delta water	

Response to comment OR87-56
Comment noted.

1998	http://www.deltarevision.com/1990-1999_docs/1998fed-reg.pdf http://www.deltarevision.com/maps/restoration_plans_experiments/2006eco-crocent_milldo_river_conveyance.jpg	Notice of meeting referring to preferred alternative
1998	http://www.deltarevision.com/1990-1999_docs/1998-calfed-levee-history.pdf	Note the number of islands used for studies and mapping up until this time
1998	http://www.spk.usace.army.mil/projects/civil/folsom/index.html	Expansion of Folsom Dam outlets to divert water away from Sacramento River system in the Delta go to bottom of page
1999	http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/decision_1641/index.shtml http://www.waterboards.ca.gov/waterrights/board_decisions/adopted_orders/decisions/d1600_d1649/wrd1641.pdf http://www.waterboards.ca.gov/waterrights/board_decisions/adopted_orders/decisions/d1600_d1649/wrd1641_1999dec29.pdf http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/decision_1641/exhibits/exhibitlist.pdf	SWRCB adopts Decision 1641 to implement objectives of 1995 WQCP (X2 standards Feb thru June for habitat) Measure used to be 1 ppt. Docs refer to 2 ppt, in effect changing wq standards substantially!
2000	http://www.waterboards.ca.gov/waterrights/board_decisions/adopted_orders/decisions/d1600_d1649/wrd1641_1999dec29.pdf	SWRCB revised water right decision 1641 to provide for operations of the CVP and SWP to protect Delta water quality
2000	http://calwater.ca.gov/content/Documents/ROD.pdf http://www.deltarevision.com/2011/calfed/Recent%20Delta%20History%20and%20the%20CALFED%20Record%20of%20Decision.pdf http://calwater.ca.gov/content/Documents/new_final_framework.pdf	Very important to review to understand the actions taken 2000 to 2011: CALFED Record of Decision Video updating status in 2010
2000	http://www.water.ca.gov/floodmgmt/dsmo/sabi/drmisp/docs/CALFED_ROD_Levee_Plan.pdf http://www.water.ca.gov/floodmgmt/dsmo/sabi/drmisp/docs/CALFED_ROD_Levee_Plan.pdf	Flood timeline-third section & whole timeline focus CALFED ROD map
2000	http://www.calwater.ca.gov/content/Documents/library/July2000_EIS_EIR/301/301_chapter2.pdf http://calwater.ca.gov/calfed/library/Archive_ROD.html	CALFED Record of Decision: Through-Delta canal with restoration for mitigation plan adopted CA Dept Health adopts plan to require most ground wells to chlorinate to avoid bacteria, even if no bacteria exists in the water system. Requires even small public water systems, like a restaurant using a well and private campgrounds to have a Certified Water Operator & to report water use.
2000	http://www.deltarevision.com/maps/restoration_plans_experiments/canal_building_blocks_2012.jpg http://calwater.ca.gov/content/Documents/library/plan_of_action.pdf	Planning maps for central canal Recirculation study Calfed building blocks

Response to comment OR87-57
Comment noted.

	http://www.deltarevision.com/maps/conveyance-canals/thru_delta_conveyance.jpg http://deltarevision.com/2000_docs/Cal_Fed_report_FINAL_2000.pdf	Controlled flooding using McCormac and Statter	
2000	http://pubs.usgs.gov/circ/circ182/pdf/11Delta.pdf http://www.deltarevision.com/2000_docs/2000_breach_study_using_1992_flow.txt	Usgs "sinking heart of the state" notes subsidence slowing down	
2000	http://www.cdph.ca.gov/programs/Pages/DWP.aspx http://modeling.water.ca.gov/hydro/model/calsim-doc/index.html http://modeling.water.ca.gov/hydro/model/ http://modeling.water.ca.gov/delta/studies/validation2000/map.html	CA drinking water program expands DWR changes how water flow is calculated and reported, which creates conflicts with how other organizations, like USBR and USACE calculate flow.	
2000	http://www.water.ca.gov/iep/newsletters/2000/2000winter.pdf		
2000	http://sfestuary.org/userfiles/2000_EstuaryIntro.pdf	Link from ABAG website has good summary of the estuary, including the Delta	
2001	http://www.deltarevision.com/Delta_maps/Delta_Maps.htm	Water used to produce energy map of usa and many, many other maps by year!	
2001	http://www.deltarevision.com/2011/historic-timeline/historic_maps/2001_oil_gas_delta.jpg http://www.deltarevision.com/maps/2001delta_wetlands_project.jpg	Minerals map of California...gas and oil in Delta region Delta wetlands project	
2001		CVPIA ROD implemented provisions of CVPIA including allocating 800,000 acre-feet of CVP yield for environmental purposes	OR87-58
2001	http://www.deltarevision.com/2001_docs/delta_channel_depletions_salinity.jpg http://www.deltarevision.com/2001_docs/2001CALFED_scrutinize_cross_channel.pdf http://www.deltarevision.com/2001_docs/2001delta_meeting.pdf http://www.deltarevision.com/2001_docs/DPC_SUMMARY_OIF_PROJECTS_.pdf	Delta Cross Channel gates "reoperation" for fish protection and water flow planning	
2001	http://www.deltarevision.com/2001_docs/ChinookSalmonFryOutmigrantPilotStudy.pdf http://www.deltarevision.com/maps/fish/usfw_fish_monitoring_map.jpg	Salmon studies	
2001	http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/bay_delta_plan/water_quality_control_planning/docs/060611wrkshp/usfws.pdf	As more water is diverted, salmon populations decline. NMFS BO for spring-run Chinook salmon and steelhead established criteria for operations to protect the runs	
2002	http://www.deltarevision.com/2011/videos/waterflow/sacramentoriverflowdiagram.jpg http://www.deltarevision.com/2011/videos/waterflow/methodology-flow-2001.jpg http://www.deltarevision.com/Delta_maps/maps/water_flow_use/banks_8500_mediation.jpg http://www.deltarevision.com/Delta_maps/maps/water_flow_use/usbr_flow_map.jpg	See links to original documents, which show on the maps linked to the left. Computer modeling for flow, floods, particle tracking, levee breach effects, water quality, etc In-Delta storage studies (Surface Storage Investigations) Increased water exports	

Response to comment OR87-58
Comment noted.

2003	http://www.water.ca.gov/environmentalservices/docs/mintry_plus/Monterey%20Plus-ExhC_Statement%20o%20verriding%20Considerations.pdf http://www.water.ca.gov/environmentalservices/docs/mintry_plus/FEIR.pdf	Summary of "Monterey Plus" agreement-page 4-5 FEIR-page 126 transfers KFE property
2003		Group of Delta area businesses and residents petitions the state travel commission to recognize the Delta as its own tourist region. At Sacramento hearing, no commissioner bothers to show up to hear the requests of over 100 Delta-area businesses and local representatives of the Delta towns. (check date-may have been 2002 hearing)
2003		Gov Gray Davis recall..Gov AS voted in
2003		AS promotion of a "hydrogen highway" in California
2003		DOI provides over 3.4 Billion for Central Valley and Delta projects and studie
2003	http://www.deltarevision.com/maps/in-Delta_storage/statten_repairst.jpg http://www.deltarevision.com/maps/in-Delta_storage/2004in-delta_storage.jpg http://www.deltarevision.com/it.htm	Land ownership Statten use In-Delta storage proposals-Bacon Island, Webb Tract, etc
2003	http://www.deltarevision.com/computer_modeling_the_delta.html http://www.deltarevision.com/2011videos/waterflow/1995_delta_in-out_flows.jpg http://calwater.ca.gov/content/Documents/Amended_and_Restated_MOU_9-03.pdf	Transition to computer modeling for effects analysis: In-Delta surface storage studies conclude field study OR87-59 (2/2004) Yolo Bypass planning and Suisun Marsh restoration possibly as mitigation
2003	http://deltarevision.com/COMMENTS/2003-over-3-billion-federal-funds.jpg	Over \$3 billion for California Delta comprehensive basin study provided by the federal government!
2003	http://www.water.ca.gov/deltainit/	Delta maps are removed from public access from the Library of Congress in Washington D.C. (It is later learned the official survey maps were being digitized, or scanned, to eventually be published online.
2004	http://www.deltarevision.com/2004_docs/wpt20040408_deltapack.pdf http://www.deltarevision.com/timeline.htm http://www.deltarevision.com/2011/Bacon_Island_Jones_Tract_field_studies.pdf http://www.waterplan.water.ca.gov/docs/meeting_materials/analytical/05_24_04/CALSIM%20WTT.pdf	Delta pact call to action on called "Stakeholders" meet and agree to modification of 2000 ROD plan. Surface Storage field study conducted- Jones Tract Levee failure June 1 or June 3. Independent Science board for Delta Improvement Plan (DIP) formed. Plan later splits into North Delta (NDIP) and South Delta (SDIP) project and called "restoration projects" even though they are conveyance per CALFED.
2004	http://modeling.water.ca.gov/delta/reports/ansrpt/2005/2005c13.pdf http://avgbarbor.net/images/2010/misc/dcc-16-1-2004.pdf	Computer modeling Jones Tract incident and timing.

Response to comment OR87-59
Comment noted.

	http://www.waterplan.water.ca.gov/docs/meeting_materials/analysis/V05.24.04/CAISM_%20WTT.pdf http://baydeltaoffice.water.ca.gov/modeling/hydrology/hydrogroup.html http://baydeltaoffice.water.ca.gov/modeling/hydrology/HDG_04/HDG%20Sacramento%20Levels%20Oct08-04.pdf http://baydeltaoffice.water.ca.gov/modeling/hydrology/HDG_04/HDG%20Sacramento%20Proposals%2016Nov04.pdf http://baydeltaoffice.water.ca.gov/modeling/deltamodeling/presentations/2003P1_CALFEDSci.pdf http://baydeltaoffice.water.ca.gov/modeling/hydrology/HDG_04/DSM2_ModelDependencies.pdf http://baydeltaoffice.water.ca.gov/modeling/hydrology/HDG_04/HDG%20Hydrology%20Development%20for%20the%20Sacramento%20Valley%20ADrapers%20Oct08-04.pdf http://baydeltaoffice.water.ca.gov/modeling/hydrology/HDG_04/HDG%20Sacramento%20Proposals%2016Nov04.pdf	Slide 22-"gaming" water transfers and computer modeling	
2004	http://www.water.ca.gov/floodmgmt/dsmo/sab/ndp/ http://www.deltarevision.com/2004_docs/2005_motive_for_delta_water_trab.pdf http://www.water.ca.gov/franktract/docs/Delta_Conveyance_Summary_Report_121007.pdf	Ndip	
2004	http://www.deltarevision.com/Delta_maps/In_Delta_water_storage.htm http://www.deltarevision.com/2004_docs/JT7Jones-Bacon.jpg http://www.deltarevision.com/2011/2011videos/2004_Mount_Twiss_Levee_Report_dec.pdf_or.go.to http://www.water.ca.gov/floodmgmt/dsmo/sab/dmisp/docs/Mount_Twiss_Levee_Report.pdf shows how this report influenced subsequent decisions..follow how to get to it http://www.deltarevision.com/2004_docs/ISB_packet_public_meeting_092104_v2.pdf http://www.deltarevision.com/2004_docs.htm http://www.deltarevision.com/2004_docs/2004_levee_facts_finding_team.pdf	<p>Mount & Twiss are assigned as the Delta flood history persons</p> <p>ISB for CALFED accepts Mount & Twiss paper without final review</p> <p>Mount & Twiss white paper published with false flood history for the Delta</p>	— OR87-60
2004		B&M Gates Foundation funds UC Davis Rice studies, promoting use of Delta lands to grow rice. Google website/foundation promotes growing rules to reduce carbon footprint.	
2004	http://www.youtube.com/watch?v=274M7dBotE&feature=mfu_in_order&list=UL	Video about Bacon Island planned use for in-delta storage, after the "field test" of Jones Tract in 2004	
2005	http://ryerisland.com/images/smalls/2004_flooded_islands-wrong_islands_map.jpg	Classic example of how wrong some of the planning documents-maps-can be...shows the lack of quality, oversight and independent review of DWR's "best available science".	
2005	http://www.deltarevision.com/2011videos/waterflow/calsim-modeling_schem.jpg http://www.deltarevision.com/2011videos/waterflow/sacramentoriverflowdiagram.jpg how the water physically flows.	<p>"Stakeholders" begin implementation actions per the 2004 "Napa Alternative and "Monterey Alternative"</p> <p>Freeport project plans to divert water away north of the Delta</p>	

Response to comment OR87-60
 Comment noted.

2005	http://baydeltaoffice.water.ca.gov/delta/summaryreport/documents/FloodedIslandFeasibilityStudyBaselineReport.pdf http://www.water.ca.gov/frankstrait/docs/14/Flooded%20Islands%20Baseline%20Report.pdf page 24 of 320 http://www.deltarevision.com/wrong-maps-of-the-delta.htm http://www.riverisland.com/wrong-maps-of-river-island.htm http://snugharbor.net/delta_confusions.html	Example of wrong Delta names Google confuses Delta Island names: wrong Delta maps page	
2005	http://www.ccwater.com/files/DeltaRegion.pdf page 11 249		
2005	http://baydeltaoffice.water.ca.gov/sdb/sdip/index_sdip.cfm http://www.water.ca.gov/floodmgmt/dsmo/docs/white_paper.pdf 2000 paper listing conveyance improvements proposed	South Delta Improvements (SDIP) North Delta Improvements (NDIP)	
2006	http://deltarevision.com/Delta_maps/Floods-Islands-Levees.htm	Review of delta levee history	
2006	http://www.youtube.com/watch?v=QXhZ7wtSrk&noredirect=1	UC Berkeley : water speakers & studies hosts summer program regarding "Reinvisioning" the Delta. Maps from URS use the false flood data. UC Davis conducts computer effects modeling	
2006	http://www.water.ca.gov/floodmgmt/dsmo/sab/dmisp/docs/Comparison_of_Major_Levee_Breaks_in_Delta.pdf	Jones Tract 2004 levee failure not included...because it was a field study?	
2006	http://www.deltarevision.com/maps/salinity-toxins/delta_islands.JPG http://www.waterboards.ca.gov/water_issues/programs/tmdl/records/state_board/2006/ref765.pdf	Monitoring stations	— OR87-61
2006	http://baydeltaoffice.water.ca.gov/DeltaAtlas/06-FloodControl.pdf	From 2011 online-delta atlas section-flood history	
2006	http://www.waterboards.ca.gov/water_issues/programs/tmdl/docs/303dlists2006/ena/r5_06_303d_reqtmdls.pdf http://www.waterboards.ca.gov/water_issues/programs/tmdl/records/state_board/2006/ref625.pdf http://www.waterboards.ca.gov/water_issues/programs/tmdl/docs/303dlists2006/swrcb/r5_final303dlist.pdf http://www.waterboards.ca.gov/water_issues/programs/tmdl/docs/303dlists2006/swrcb/staffreport/v3r5_final.pdf http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/wqccp/ol_plans/2006wqccp/docs/rev2006wqccp.pdf	delta pages 5-8	
	http://baydeltaoffice.water.ca.gov/modeling/deltamodeling/AR2007/2007_Annual_Report	Salinity modeling	

Response to comment OR87-61
Comment noted.

	t_Final.pdf	
2007	http://baydeltaoffice.water.ca.gov/sdb/tba/deltaoverview/delta_visionview.pdf http://www.deltavision.ca.gov/BlueRibbonTaskForce/Sept2007/Handouts/Item_3.pdf	Example of wrong waterways, islands, but good example of island flood history Delta Vision group summary
2007	http://www.water.ca.gov/floodmgmt/dsmo/sab/drmisp/docs/DRMS_Presentation-DWR_Public_Mtg_062607.pdf	.DRMS presentation
2007	http://socialwaterdialogue.org/calendar/DeltaMaps-Actions_Bourne_6-27-07.pdf	Delta Vision discussion maps
2007	http://bios.dfg.ca.gov/ http://www.dor.ca.gov/hq/env/bio/files/ppt_mcdmtg4.pdf http://www.pribo.org/calrif/pdfs/riparian_v2.pdf	3 year closure of salmon fishing in the Delta starts at the same time as the acoustic tagged fish studies are conducted Delta aquatic ecosystem shows dramatic decline while water exports continue to increase
2007	See 2008 Phase 1 final (revised several times to a new "final" Dec 2009) http://www.science.calwater.ca.gov/drms/drms_irs.html http://www.science.calwater.ca.gov/pdf/drms/DRMS_Risk_Report_section_07.pdf wrong data regarding Ryer Island flooding; wrong data for several other islands-inflates flood history by counting floods before levees were improved and by counting floods of islands used for "controlled flooding" meaning they MEANT to flood the island. Upper & Lower Jones Tract 2004 listed, even though it was part of the "field studies" for the In-Delta Storage planning	DRMS study for DWR by USR attempts to revise Delta history by publishing false and misleading data. Intake facility approved by Freeport-construction begins (EBMUD). Intake facility on Victoria Canal (CCWD) planned. Levee improvements begin along the pathways of the "central canal" or CALFED preferred alternative.
2007	http://www.ccwater.com/aip.asp http://snugharbor.net/images/2011/deltastuff/conveyance-2011-update.jpg http://www.waterrights.ca.gov/application/PetNot/docs/20245_aip_ccwd_petition.pdf http://www.spk.usace.army.mil/pub/outgoing/co/reg/pn/200500537.pdf https://www.communicationsmer.com/projects/osvaqueros/docs/2_background.pdf http://deltawatersupplyproject.com/ http://www.reedconstructiondata.com/building-types/water-treatment/california/projects/1000821853/ http://www.ccwater.com/	CCWD new water intake at Victoria Canal is constructed to provide fresh water that will no longer be available at the original CCWD intakes closer to Sherman Island and Suisun Bay area. Intake at Empire Tract planned-referred to as a Stockton water project
2007	http://www.water.ca.gov/environmentalservices/docs/mntty_plus/comments/Contra%20Costa%20Water%20Dist.pdf	Monterey Amendment reference
2007	http://www.water.ca.gov/floodmgmt/dsmo/sab/drmisp/bphase1_information.cfm published 2008 http://www.deltarevision.com/Delta_maps/Floods-Islands-Levees.htm one of the challengers to DRMS flood history http://www.ryerisland.com/images/floods/delta_floods_final.pdf http://www.deltarevision.com/deltafloodtimeline.html	DRMS Phase 1 report public copy is released and is highly challenged by many. Some of the false information is corrected by December 2009. August-Delta Vision meetings in the Delta is the first time Delta area residents are told of the planned revisions to the Delta. Delta Vision documents use the false data found in the DRMS Phase 1 report.

Response to comment OR87-62
Comment noted.

2007	http://www.ppic.org/content/pubs/report/R_207ILR.pdf	Limits on water exports imposed to protect endangered fish species of the Delta region. PPIC releases a report to influence decisions, but its based on DRMS Phase 1 unverified and highly criticized data.	
2007	http://calwater.ca.gov/content/Documents/meetings/FTDDCCTDF/Feb15_07_Meeting/TD_FDDCFT_Feb07.pdf	Barrier-gates, Franks Tract and changes to McCormack/Williamson Tract are proposed as "restoration" projects but were originally listed as "conveyance" projects in CALFED ROD	
2007	http://www.deltavision.ca.gov/Context_Memos/Recreation/Recreation_Memo_Interation_1.pdf	Memorandum prepared for Delta Vision review recognizes over 14 million total user days per year for boating in the Delta.	
	http://www.waterplan.water.ca.gov/docs/cwpu2009/0310final/vtc05a02_cwp2009.pdf	References to other context memorandums	
2008	http://www.swrcb.ca.gov/board_reference/docs/summary_strategic_plan_2008-2012.pdf http://www.swrcb.ca.gov/water_issues/hot_topics/strategic_plan/docs/final_draft_strategic_plan_update_090208.pdf http://www.swrcb.ca.gov/water_issues/hot_topics/strategic_plan/docs/073008_appendix_4_water_rights.pdf http://www.swrcb.ca.gov/water_issues/hot_topics/strategic_plan/docs/2008_2012/020608_presentation.pdf	lots of maps PAGE 26..INAPPROPRIATE INCONSISTENCIES	OR87-63
2008	http://www.spn.usace.army.mil/projects/o&m/PinoleShoalM10_PinoleShoalMStudy_O&M.pdf http://www.spn.usace.army.mil/projects/pinoleshoalmanagement&m.html	USACE Delta sediment planning	
	http://www.deltarevision.com/Delta_maps/maps/water_flow_use/usbr_delta_standards_summary.jpg	Proposed revised water quality standards	
2008	http://calmap.gisc.berkeley.edu/resin_public_docs/DRMS_phase1_sections/Risk_Report_Section_7_Final.pdf http://ryerisland.com/images/floods/Risk_Report_Section_13_Final.pdf http://rdhs.org/Documents/June%202008.pdf http://www.water.ca.gov/floodmgmt/dsmo/cab/drmsp/docs/Geomorphology_TM.pdf http://ryerisland.com/images/floods/DRMS1_wrong_on_Ryer.pdf	DRMS report on floods incorporates islands not in the Delta in order to inflate statistics. Pages 80 and 81 show supposed historical Delta floods-URS/DWR is wrong.	
2008	http://www.deltarevision.com/maps/salinity-toxins/usbr_delta_standards_summary.jpg	Proposed salinity standards	
	http://www.deltarevision.com/maps/salinity-toxins/delta_islands.JPG http://www.deltarevision.com/maps/salinity-toxins/2005_dwr_monitor_sites.jpg	Map of monitoring stations	
2008	http://www.water.ca.gov/floodmgmt/dsmo/cab/drmsp/timeline.rtf	As of January 2012, the DRMS Phase 1 timeline still	

Response to comment OR87-63

Comment noted.

Response to comment OR87-64

Comment noted.

		showing at DWR website would lead to confusions, like the Delta Plan of 2012 quoting 2008 DRMS false data.	OR87-64
2008	http://www.scimco.calwater.ca.gov/pdf/drms/IRP_DRMS_Review_main_plus_appendices.pdf http://www.deltarevision.ca.gov/BlueRibbonTaskForce/Sept2007/Handouts/Item_9_Handout_1.pdf http://www.science.calwater.ca.gov/pdf/drms/DRMS_memo_TFFin12_092107.pdf http://www.water.ca.gov/floodmgmt/dsmo/sab/drmsp/docs/IRP_DRMS_Review_main_plus_appendices.pdf http://www.water.ca.gov/floodmgmt/dsmo/sab/drmsp/docs/Risk_Report_Section_0_Final.pdf	The October 2008 "Independent review" that highly criticizes the DRMS Phase 1 data does not stop the DRMS Phase 1 "Final" release in December 2008; many other agencies and scientists use the technical data that was wrong regarding Delta island levee and flood history, wrong regarding elevations, etc.	
2008	http://watershed.ucdavis.edu/pdf/ComparingFutures_PPIC2008/708FHR_appendix8.pdf http://www.ppic.org/content/subs/other/708FHR_appendixB.pdf http://www.ppic.org/content/data/Analysis%20of%20the%20Economic%20of%20Delta%20Levee%20Repairs%20and%20Upgrades.xls	UC Davis and PPIC reports on Delta uses DRMS data from 2007	
2008	http://www.deltarevision.ca.gov/BlueRibbonTaskForce/August2007/Item_9_Attachment_2.pdf	Delta Vision process & meetings	
	http://www.spk.usace.army.mil/projects/civil/Delta/Docs/FINAL_Delta_Strategic_Plan_Report.pdf http://www.deltarevision.com/maps/large-owner-axis.JPG	USACE strategic plan for the Delta Large owner axis	
2008	http://www.water.ca.gov/floodmgmt/dsmo/sab/drmsp/phase1_information.cfm http://ryerisland.com/ryer_flood_history_email.jpg http://ryerisland.com/DRMS_wrong_on_ryer_island.htm http://ryerisland.com/images/maps/google12-28-08ryer.jpg http://ryerisland.com/images/maps/mount_wrong_ryer.jpg http://ryerisland.com/images/floods/2008_comparing_futures_tec_appendix.pdf http://ryerisland.com/images/maps/DV_wrong_on_ryer.JPG http://ryerisland.com/images/maps/wm_wrong_ryer.jpg http://ryerisland.com/images/maps/google-tyerisland.jpg http://ryerisland.com/images/maps/wm_wrong_ryer.jpg http://ryerisland.com/seismic_map_compare.htm	Drms-wrong on Ryer Island. DRMS Phase 1 "Final" published by DWR December 2008 is revised several times. Go to the bottom of the DWR website to note the last revision was Dec 2009. Usually when a "final" report is revised, one would see a summary of what was changed called "erratum". Not so with the DRMS Phase 1 report. Perhaps it is because Ryer Island is a targeted island, based on false data of the DRMS Phase 1 report? Google wrong on Ryer location (Google notified) but still listing the other Ryer at least half the time in 2012!	OR87-65
2008	http://ryerisland.com/images/floods/delta_floods_final.pdf http://www.deltarevision.com/deltafloodtimeline.html http://www.deltarevision.com/Issues/delta_floods_timeline.jpg http://www.deltarevision.com/2011/historic-timeline/historic_maps/timeline_delta_levee_failures.pdf http://www.deltarevision.com/Delta_maps/Floods-Islands-Levees.htm	Delta flood history-all sources Delta flood timeline (updated 2011)	

Response to comment OR87-65
Comment noted.

2008	http://ryerisland.com/images/floods/DRMS1_wrong_on_Ryer.pdf	Really review this one showing the mistakes of DRMS Delta Vision documents published utilizing false data of DRMS report	OR87-66
2009	http://www.youtube.com/watch?v=ht.mpVV3bq9M	Where and what is the Delta?	
2009	http://www.baydeltaconservationplan.com http://www.deltarevision.com/Delta_maps/Restoration_BDCP.htm	Bay Delta Conservation Plan unveiled to the public	
2009	http://www.assembly.ca.gov/acs/committee/c26/Publications/PAB%201.pdf http://www.assembly.ca.gov/acs/committee/c26/Publications/PAB%202.pdf http://www.assembly.ca.gov/acs/committee/c26/Publications/PSB%201.pdf http://www.assembly.ca.gov/acs/committee/c26/Publications/PSB%202.pdf http://www.assembly.ca.gov/acs/committee/c26/Publications/PSB%203.pdf	State legislation authorizing Delta Stewardship Council with authority to develop a new Delta Plan including export of more Sacramento River Water	OR87-67
2009	http://ryerisland.com/images/smalls/drms-using_maps_to_hide_mistakes.jpg http://ryerisland.com/images/gov-pdfs/floods/2_Rivers_floodinga.pdf http://ryerisland.com/images/floods/delta_floods_final.pdf http://snavgharbor.net/images/2011/deltastuff/DRMS_figure2-5_compared.JPG http://www.water.ca.gov/floodmgmt/dsmo/sab/drmisp/docs/Risk_Report_Section_7_Final.pdf	DRMS corrects challenge to Ryer Island data, but does not correct the rest of the data. 2-3 versions show online to this day, correct timeline of Delta floods, including controlled flood areas of the Delta	
	http://www.water.ca.gov/floodmgmt/dsmo/sab/drmisp/docs/Risk_Report_Section_7_Final.pdf	Notice pages 81 and 82 the maps regarding flood history have changed but DWR does not notify anyone of the correction.	
2009	http://www.spk.usace.army.mil/projects/civil/Delta/index.html http://www.spk.usace.army.mil/projects/civil/Delta/Delta%20Initiatives%20-%20State%20of%20Estuary%20Conf%202009.pdf http://www.usbr.gov/mp/intortie/docs/FEIS%20Webfile/DMC-CA-Intertie_FinalEIS_Vol_1_MainReport_Nov2009.pdf page 9 ryer confusion	Usace summary of initiatives	
	http://www.deltarevision.com/maps/salinity-toxins/delta_monitoring.jpg	Governor's drought	
	http://www.deltarevision.com/Delta_maps/maps/water_flow_use/ss-reduce_flow.JPG http://www.deltarevision.com/calFed_home_page.html	BDCP confusions	OR87-68
2009	http://science.calwater.ca.gov/pdf/reviews/BOR_appendices/Appx_C_100_Design_Plans_10-19-09.pdf http://www.waterplan.water.ca.gov/docs/cwpu2009/1009orf/3-rr_d_pre-final.pdf_13oct09.pdf http://www.spk.usace.army.mil/projects/civil/Delta/Delta%20Initiatives%20-%20State%20of%20Estuary%20Conf%202009.pdf		
2009	http://baydeltaoffice.water.ca.gov/modeling/deltamodeling/AR2009/2009_Annual_Report	Salinity modeling	

Response to comment OR87-66

Comment noted.

Response to comment OR87-67

Comment noted.

Response to comment OR87-68

Comment noted.

	t Final.pdf		OR87-68
2010	http://www.dot.ca.gov/hq/top/californiainterregionalblueprint/ http://www.dot.ca.gov/hq/top/californiainterregionalblueprint/Documents/cib_progress_report/CIB_Update_FactSheet_v6.pdf http://www.ice.ucdavis.edu/CTP/Consultation%20Meeting/CTP%20Addendum%20Final%20Draft%204_9_07WOTrckg.pdf http://www.mtc.ca.gov/planning/2035_plan/Supplementary/T2035_Goods_movement_update.pdf http://www.sacregionblueprint.org/sacregionblueprint/the_project/discussion_draft_preferred_scenario.cfm http://www.sacramentohipchannel.org/ http://www.marad.dot.gov/ships_shipping_landing_page/mhi_home/mhi_home.htm http://www.mtc.ca.gov/planning/2035_plan/Supplementary/T2035_Goods_movement_update.pdf http://www.mtc.ca.gov/planning/2035_plan/FINAL/T2035_Plan-Final.pdf	Transportation plans for the future are unveiled to the public	OR87-69
2010	http://www.saica.org/Programs/Folsom_Dam.html	More water diversions from Folsom Dam	
2010	http://www.deltacouncil.ca.gov/interim-plan http://www.deltacouncil.ca.gov/	Delta Stewardship Council forms and approves and Interim Delta Plan based on CALFED ROD, influenced by the Delta Vision publication, and using the false data from DRMS Phase 1 Report. Chair of DSC was chair of Delta Vision process. DSC Interim Delta Plan	OR87-70
2010	http://www.water.ca.gov/lep/docs/MLAG_agenda_9_22_11_Dsmelturb.pdf		
2010		Push for National Heritage area Delta Conservancy Formed	
2010	http://www.waterboards.ca.gov/board_info/agendas/2010/oct/100510_5.pdf http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/deltaflow/docs/final_rpt080310.pdf page 28 list of projects http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/deltaflow/docs/final_rpt080310.pdf page 41 net delta outflow taf		OR87-71

Response to comment OR87-69

Comment noted.

Response to comment OR87-70

Comment noted.

Response to comment OR87-71

Comment noted.

2010	http://www.water.ca.gov/wa/docs/FinalPOD2010Workplan12610.pdf	workplan NOAA website live example
2010	http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/deltaflow/docs/final_rpt080310.pdf	Flow criteria for Delta ecosystem
2010	http://snugharbor.net/images/2010/media/2010-players.pdf http://snugharbor.net/images/2011/deltaauff/media/2010-players.JPG	Study of historical data spreadsheet. Media ownership study
2010	http://www.deltarevision.com/wrong-maps-of-the-delta.html http://www.deltarevision.com/more_wrong_maps_of_the_delta.html	Examples of wrong or incorrect maps of the Delta used for the last 6 years of planning and studies
2010		Water siphon on Empire track begins construction at the exact location proposed for CCWD intake in previous maps
2010	http://www.epa.gov/region9/mediacenter/impaired-waters/ http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml http://www.waterboards.ca.gov/water_issues/programs/water_quality_goals/index.shtml	
	http://www.deltarevision.com/issues/waterflow/video/north_delta_low_flow_effect.jpg	How the water in the Delta physically flows
2010	http://www.water.ca.gov/swp/docs/SWPmap.pdf	State Water Project Map found online. DCC shows, but the Sacramento River and its tributaries between Sacramento and the Suisun Bay are eliminated. The path of the Sacramento River has been revised to connect with what may be the former Sacramento Ship Channel. The Delta is not recognized.
2011	http://www.waterboards.ca.gov/resources/data_databases/#rights http://www.waterboards.ca.gov/water_issues/programs/water_quality_goals/docs/wq_goals_text.pdf	Water quality rights review
2011	http://deltarevision.com/calfed_name_game_video.html http://deltarevision.com/calfed_videodocs3.html	Video-CALFED 2000 ROD update-the name game
2011	http://www.water.ca.gov/floodmgt/dmo/sab/drms/phase2_information.cfm	DRMS Phase 2 released. Based on false data of Phase 1. Addresses Delta transportation proposals, infrastructure changes, waterway pathway modifications, levee setbacks and more. It is based on phase 1 false data.
2011	http://rees.org/resources/3527 http://www.recordnet.com/apps/phcs.dll/article?AID=720110830/A_MEDIA03/110829886/0/A_NEWS02	Report from UCLA levee failure study re earthquakes DSC white papers & IDS
2011	http://www.water.ca.gov/system_reop/docs/system_reop_phase1_plan_of_study_6-2011.pdf	System reoperation plan...look at the "major facilities" maps re conveyance and notice what is missing

Response to comment OR87-72
Comment noted.

OR87-72

2011	http://www.deltarevision.com/issues/waterflow/bdcp_sacramento_river_minimum_flow_criteria.jpg http://www.deltarevision.com/Delta_maps/maps/water_flow_use/ss-ss.jpg	BDCP meetings, subcommittees, interest groups, etc do NOT agree on restoration plans	OR87-73
2011	http://www.deltarevision.com/issues/waterflow/video/sacramento_river_future.jpg http://www.deltarevision.com/issues/waterflow/video/north_delta_low_flow_effort.jpg	New Delta Plan proposed-sketch based on 1880 Illustrated Wasp sketch shows North Delta impacts Method for measuring water flow changes again	OR87-74
2011	http://www.deltarevision.com/sacramento-river-waterflow.html http://www.deltarevision.com/issues/waterflow/video/2011-sacriverflow.jpg http://www.deltarevision.com/issues/waterflow/exports_value-2000-2009.jpg http://www.deltarevision.com/sacramento-river-waterflow.html	DWR changes how water flow is calculated...again!	
2011	http://snugharbor.net/images/2011/deltastuff/observations6-29-2011mwd-meeting.pdf http://www.deltarevision.com/issues/waterflow/bdcp_sacramento_river_minimum_flow_criteria.jpg	Metropolitan Water District storing water & BDCP diversion summary	
2011	http://www.waterboards.ca.gov/board_info/agendas/2011/jun/06/2111_5.pdf		
2011		Delta Economic Sustainability Plan-notice how the recreation section quotes quite different data from the 2007 memo to the DSC	
2011	http://www.swrcb.ca.gov/waterrights/water_issues/programs/bay_delta/deltaflow/index.shtml http://www.waterboards.ca.gov/centralvalley/ http://geotracker.waterboards.ca.gov/gama/	Water tracking websites	
2011	http://www.water.ca.gov/floodmgmt/dsmo/docs/NOI_NOP.pdf http://www.planningdocuments.saccounty.net/viewprojectdetails.aspx?projectId=527 http://www.freeportproject.org/nodes/explore/intake/ http://www.bbinfrastructureinc.com/docs/FolsomSouthCanalConnectionProject07-07.pdf http://baydeltaoffice.water.ca.gov/delta/TDF/ http://baydeltaoffice.water.ca.gov/ndelta/TDF/documents/Through%20Delta%20Facility%20Final%20VE%20Report.pdf http://www.water.ca.gov/engineering/docs/NBA%20AIP%20Scoping%20meetings%20Powerpoint%20Presentations.pdf see page 9 http://www.bbinfrastructureinc.com/projects/water/sacramento.htm http://www.usbr.gov/mp/nega/nega_projdetails.cfm?Project_ID=783 http://www.water.ca.gov/engineering/Projects/Current/NBA/ http://www.water.ca.gov/floodmgmt/dsmo/sab/ndp/documents/ http://baydeltaoffice.water.ca.gov/sdb/tbo/index_tbp.cfm http://www.yolobasin.org/bypass_strategy.cfm?useFigures=true http://snugharbor.net/images/2011/deltastuff/intakes/2-calledupdate12-2011.jpg http://snugharbor.net/images/2011/deltastuff/intakes/4-calledupdate12-2011.jpg http://snugharbor.net/images/2011/deltastuff/intakes/8-calledupdate12-2011.jpg http://www.esassoc.com/projects/stockton-delta-water-supply-project http://www.esassoc.com/projects/davis-woodland-water-supply-project	Intake and diversion projects <i>completed</i> or under construction by 2011, all of which divert more water from the Sacramento River: Folsom South Canal 200 million gallons per day Freeport RWA 185 million gallons per day = 177,047 af per year Elkhorn Diversion 210 cfs capacity Sanky Diversion 434 cfs Woodland-Davis Project 46,000 af year North Bay Aquaduct 240 cfs Yolo Bypass annual inundation approx. 4000 taf year Suisun Marsh-Cache Slough hydraulic link Sacramento Water Intake project 160 million gallons per day Thru-Delta reoperation adds another 1000 cfs diversion capacity or 723,970 taf Hood TDF 4000 cfs Georgiana Slough	OR87-75

Response to comment OR87-73

Comment noted.

Response to comment OR87-74

Comment noted.

Response to comment OR87-75

Comment noted.

			OR87-75
	Summary compiled at http://snugharbor.net/New-sacramento-river-intakes-2011.html		
2011	http://www.deltacouncil.ca.gov/draft-eir http://www.deltarevision.com/issues/waterflow/2011-proposed_sacriver_exports.igp	DSC releases new Delta Plan for public review (11/4/2011) DRMS Phase 2 published, using some of the false data of DRMS P1 Record rain year but NO substantial Delta flooding as the water is diverted elsewhere. Water siphon under construction Empire Tract. Levee sitebacks for Dead Horse Island and dredging work along Mokelumne River system begins. Intertie per CALFED completed	OR87-76
2011	http://www.water.ca.gov/environmentalservices/docs/mintry_plus/Appendices%20-%20Volume%202/Appendix%20F%20-%20Docs%20Incorporated%20by%20Reference.pdf	Just one of the documents to review for current eir processes.. 3588 pages! Page 1172. "salinity control is necessary"-good simple statement	
2011	http://socialwaterdialogue.org/calendar/ppt/2011/5%20-%20Deven%20-%20Southern%20California%20Water%20Dialogue%20102611.pptx	MWD manages to store up extra water during a "drought" ...	
2011	http://www.waterplan.water.ca.gov/waterpie/	Quick link area to the different state and federal agencies helping to split up the "water pie".	
2011	http://www.youtube.com/watch?v=bq2SxcHsko4&feature=mfu_in_order&list=UL http://www.youtube.com/watch?v=AFHvo92fs&feature=mfu_in_order&list=UL http://www.youtube.com/watch?v=i2s2ssOKyVw&feature=mfu_in_order&list=UL	Video on flow effects under new Delta Plan Video looking at the value of the extra water exports, estimated	OR87-77
201	http://www.water.ca.gov/system_reop/docs/system_reop_phase1_plan_of_study_6-2011.pdf	System reoperation will reduce Sacramento River flows to 15,000 TAF including the Yolo Bypass annual flows.	
Jan 2012	(see below)	Links to the different documents all posted for review and comment within 1 month of each other. Each series of documents is not by itself a whole plan for California Water, but taken together it could be construed that way. In the meantime, documents that Delta-area residents were given the opportunity to have input seem to be largely ignored.	
2012	http://www.deltacouncil.ca.gov/sites/default/files/documents/files/Final_Interim_Plan_Revised_100827.pdf	Delta Interim Plan (2010 but in effect and construction projects for conveyance and in-delta storage proposed for action in 2012-2013)	
2012	http://www.deltacouncil.ca.gov/delta-plan-draft-eir	Delta Plan	
2012	http://www.deltacouncil.ca.gov/sites/default/files/documents/files/Fifth_Staff_Draft_Delta_Plan_080211.pdf	5 th Staff Draft of Delta Plan and Appendix (first published in August 2010 but incorporated into Delta Plan so must	OR87-78

Response to comment OR87-76

Comment noted.

Response to comment OR87-77

Comment noted.

Response to comment OR87-78

Comment noted.

	http://www.deltacouncil.ca.gov/sites/default/files/documents/files/Fifth_Staff_Draft_Delta_Plan_080211_Appendices_0.pdf	be reviewed with Delta Plan, if possible	
2012	http://www.baydeltaconservationplan.com/Library/DocumentsLandingPage.aspx http://www.baydeltaconservationplan.com/Library/DocumentsLandingPage/BDCPPlanDocuments.aspx	BDCP is releasing sections of the "conservation plan" for review, but its not the official comment period yet. However, since the Delta Plan incorporates BDCP by reference, it must be reviewed and what is available considered.	OR87-78
2012	http://baydeltaconservationplan.com/Libraries/Whats_in_Plan/Pages%20from%20Draft_BDCPReport_11292010_ClickableLinks7-Ch_3.pdf http://www.bdcoweb.com/Libraries/Whats_in_Plan/figures/Chtp_3_figures/3.8_Distribution_Inland_Dune_Scrub_Lands.pdf http://www.bdcoweb.com/Libraries/Whats_in_Plan/figures/Chtp_3_figures/3.2_Restoration_Opportunity_Areas%20Areas%20ROAs%29.pdf	Chapter 3 re conservation zones ROA – Restoration Opportunity Areas	
2012	http://www.baydeltaconservationplan.com/Library/DocumentsLandingPage/EIR/EISDocuments.aspx	EIR/EIS Docs	
2012	http://bdcoweb.com/Libraries/Dynamic_Document_Library/Chapter_3_-_Figures.sflb.aspx	Possible "conservation" alternatives after most of the Sacramento River water flow is diverted, so state agencies and the water exporters have to decide what to do with what's left...	OR87-79
2012	http://bdcoweb.com/Libraries/Dynamic_Document_Library/Chapter_15_-_Figures.sflb.aspx http://bdcoweb.com/Libraries/Dynamic_Document_Library/Chapter_19_-_Figures.sflb.aspx	Recreation facilities by county...misses a few transportation	
2012	http://www.baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/First_Amendement_BDCP_MOA_Redline_Edits_12-16-11.sflb.aspx	Gang up on the Delta	
2012	http://www.resources.ca.gov/docs/Highlights_of_the_BDCP_FINAL_12-14-10_2361.pdf	Summary from 2010	
2012	http://www.water.ca.gov/floodmgmt/dsmo/sab/drmsp/phase2_information.cfm http://www.water.ca.gov/floodmgmt/dsmo/sab/drmsp/phase1_information.cfm	DRMS Phase II Look at this! DRMS Phase 1 data used in Phase II and BDCP even though there were sections that were entirely wrong	
2012	http://www.water.ca.gov/cvfmj/docs/FCSSRD2011_FullDocument.pdf_2008 http://www.water.ca.gov/floodmgmt/dsmo/sab/drmsp/timeline.cfm	Flood control system status report, which is different than...	
2012	http://www.water.ca.gov/floodmgmt/dsmo/sab/drmsp/timeline.cfm	As of 2012 the DRMS Phase 1 false Ryer Island data shows online and given the failure of DWR to notify drafters of the Delta Plan of DRMS data corrections, the wrong data continues to be used and sited in 2012.	OR87-80
2012	http://www.water.ca.gov/cvfmj/docs/2012_CVFPF_FullDocumentLowRes_20111230.pdf	2012 Central Valley Flood Protection Plan, which is	OR87-81

Response to comment OR87-79

Comment noted.

Response to comment OR87-80

Comment noted.

Response to comment OR87-81

Comment noted.

		different than...	
2012	http://www.water.ca.gov/cv/mp/docs/SPFCDescriptiveDocumentNov2010.pdf	State Plan of Flood Control Description Document (2010)	
2012	http://www.water.ca.gov/floodmgmt/docs/map_sac&sj_designflows.pdf	Map of flood control plan in 2012...compared to the original flood plan of the 1950's...notice the diversion of all Mokelumne River water as if its part of San Joaquin River flow? Hence the changes to the hydraulic regions of California as shown by the revised maps...	
2012	http://deltarevision.com/sacramento-river-waterflow.html http://deltarevision.com/computer-modeling.html	Hydraulic regions then and now and how it affects water flow in and out of the Delta	
2012	http://www.water.ca.gov/floodmgmt/docs/map_sac_sj_schematic.pdf	System schematic then and now.	
2012 constr	http://www.water.ca.gov/floodmgmt/dsmo/docs/NDFEIR.pdf (2010 Ier-2012 construction) http://www.water.ca.gov/floodmgmt/dsmo/sab/ndp/ http://www.water.ca.gov/floodmgmt/dsmo/docs/Directors_Decision_Memo(DDM).pdf http://www.water.ca.gov/floodmgmt/dsmo/docs/NDFEIR.pdf	North Delta Improvement Project...conveyance planning using restoration wording. Note that in the 2000 CALFED ROD all of this was part of the "conveyance" plan. Drive around the Delta in 2012 to see the construction underway! http://deltarevision.com/2012_delta_construction.html	
2012	http://www.dot.ca.gov/hq/top/offices/osp/cto2025_files/CTP_2006.pdf http://www.dot.ca.gov/hq/top/index_files/ctp_2030_oct_2007.pdf http://www.dot.ca.gov/hq/top/offices/osp/cto.html	California Transportation plan and addendum	OR87-81
2012	http://www.dot.ca.gov/hq/top/californiainterregionalblueprint/images/maps/Map_3_SAC_OG_02092010.pdf	Sacramento County reference to Blueprint	
2012	http://www.dot.ca.gov/hq/top/californiainterregionalblueprint/images/maps/Statewide_Gap_Map.pdf	Goods movement plan-no Sac Ship Channel	
2012	http://www.dot.ca.gov/hq/top/californiainterregionalblueprint/images/maps/Focus_Route_Dev_Strat-1998-2020.pdf		
2012	http://www.dot.ca.gov/hq/top/californiainterregionalblueprint/images/maps/Priority_Reg_Corridors.pdf http://www.dot.ca.gov/hq/top/offices/osp/cto2025_files/cto13.pdf http://www.dot.ca.gov/hq/top/offices/osp/cto2025_files/cto16.pdf http://www.dot.ca.gov/hq/top/offices/osp/cto2025_files/cto16.pdf http://www.dot.ca.gov/hq/top/index_files/ctp_2030_oct_2007.pdf	Seaports and good movement corridors	
	http://www.co.solano.ca.us/depts/rm/planning/general_plan.asp	Solano County General Plan Update 2008	
	http://www.cityofwestsacramento.org/generalplan2030/pdf/wsgpu_br_7reccult.pdf http://www.cityofwestsacramento.org/generalplan2030/pdf/wsgpu_altsnews.pdf	West Sacramento planning	
	http://www.sacgp.org/MasterEIR.html http://www.sacgp.org/documents/04_Part2.05_Utillities.pdf		
	http://www.sacreionblueprint.org/sacreionblueprint/the_project/scenariomap_region.h	Sacramento County Blueprint, including the Delta islands	

OR87-82

Response to comment OR87-82
Comment noted.

tml http://www.sacregionblueprint.org/implementation/pdf/blueprint-book.pdf http://www.sacog.org/2035/ http://www.sacog.org/2035/2011/11/draft-mtpsc-released/	of the county	
http://www.sacog.org/2035/files/Draft-mtpsc/appendices/E-3%20Land%20Use%20Forecast%20Background%20Documentation.pdf	See page 71 for the projection for unincorporated Sacramento County residential units, which includes Grand Island area...	
http://www.deltarevision.com/issues/waterflow/exports_value-2000-2009.jpg		
http://www.acwa.com/		
http://www.water.ca.gov/floodmgmt/dsmo/docs/Fluvial_Process_Optimization.pdf		
http://www.mwdh2o.com/mwdh2o/pages/yourwater/supply/delta/background.html	Metropolitan Water District –Los Angeles, etc	— ORS7-32
http://westlandswater.org/wwd/default2.asp?cwide=1402	Westlands Water District-Kern County, etc	
http://www.zone7water.com/index.php?option=com_content&task=view&id=47&Itemid=218	Zone 7 Pleasanton, Livermore, San Ramon, etc	
http://www.saic.com/eeandj/projects/bay-delta-conservation-plan.html	SAIC one of the main consultants	
http://articles.sfgate.com/2006-03-15/business/17284592_1_levee-repairs-urs-division-urs-corp http://www.water.ca.gov/floodmgmt/dsmo/sab/drmisp/docs/Risk_Report_Section_0_Final.pdf	URS consultant for DRMS I & II	
http://www.n-h-i.org/hc/programs/ecosystem-restoration/delta-restoration.html?sword_list%5B%5D=delta	Driving force on restoration, it appears	
http://www.water.ca.gov/nav/nav.cfm?loc=t&id=100 http://www.waterboards.ca.gov/waterights/ http://caselaw.findlaw.com/ca-court-of-appeal/1538571.html	DWR website pages related to the Delta-just a few of them...and the waterrights site	

No comments

- n/a -

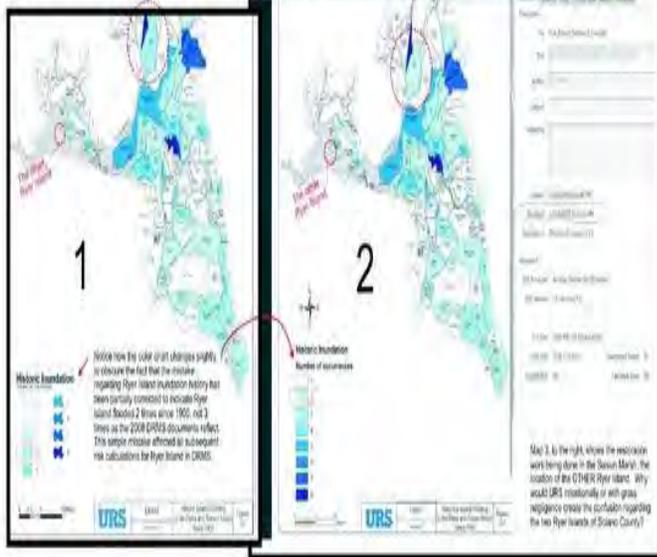
ATTACHMENT B-3 TO DELTA PLAN COMMENTS

N. Suard, Esq 1/28/2012

Using maps to intentionally mislead the viewer:

Map 1 below comes from DRMS 2009 Phase 1 Final Report, Section 2, Figure 4. River island is circled in red by the reviewer. Note there are two river islands in Solano County. The second river island does not show on the map, but it is the subject of a restoration project in the Suisun Bay area. Map 2 to the right, is a revised version of the same DRMS report, section and figure, apparently modified on 1/23/2009 after DWR updated their data regarding Delta Island restoration history was incorrect. DWR was notified by N. Suard in August 2008, and several times in 2009 that the data used for DRMS report was false.

When it is appreciated that DWR heavily corrected portions of the DRMS report, it appears to have been done in an intentionally misleading way and no notice of the corrections was provided to the hundreds of scientists still relying on the report, data in much regarding Delta Island. Historical and current data regarding Delta islands is being used to determine Island Metrics. So using correct data is important.



Response to comment OR87-85

This is a comment on the project, not on the EIR.

OR87-85

Go to http://snugarbor.net/images2011/deltastuff/DRMS_figure2-5_compared.JPG to view full size version of this poster.

Mail address:
 Snug Harbor Resorts, LLC
 1145 Townsend St.
 Vallejo, CA 94592
 Phone: (916)745-1445
 Fax: (916)745-1445

Resort location:
 Snug Harbor Resorts, LLC
 1145 Townsend Drive
 (Daly City) Vallejo, CA
 Vallejo, CA 94592
 Phone: (916)745-1445

Web site:
<http://www.snugharbor.net>

2001 Bert Small Park

SH
 Snug Harbor Resorts, LLC

Mr. Paul Dabbs
 California Department of Water Resources, Strategic Water Planning
 Statewide Integrated Water Management
 P.O. Box 942836
 Sacramento, CA 94236-0001

November 19, 2009

RE: California Water Plan Update 2009-Objection to use of Delta Risk Management Strategy Phase 1, Final Report data and/or as a reference prior to publication of pending revision to correct false Delta Islands data referenced in DRMS.

Dear Mr. Dabbs,

I am writing to object to the reference and/or use of **Delta Risk Management Strategy Phase 1, Final Report (DRMS)** as a reference in the California Water Plan Update 2009. Beginning in 2008, DWR representatives were notified of *incorrect* Delta Island inundation historical data found in DRMS Phase 1, Final Report. At a minimum, incorrect data is found in Sections 4, 7, 9 and 13. DWR representatives have acknowledged the mistake as of October 15, 2009, and written verification can be provided upon request. Specifically, DRMS Phase 1 reported both false and inflated inundation history for Ryer Island (bordered by Steamboat Slough, Cache Slough and Miner's Slough), and the false information was thereafter utilized to calculate important resource planning matters such as flood risk, seismic risk and levee stability. Publishing false information regarding Ryer island has a measurable detrimental effect on all residents, farmers and businesses of this large and productive Solano County island. One might also assume that if DRMS is incorrect as to the only island records I reviewed, it may be incorrect as to other island inundation records as well.

Out of respect for the persons involved in gathering and publishing the incorrect DRMS Island data, I have waited a month for confirmation that corrections are/will be made and notice sent out to all appropriate agencies, as indicated by the DWR representatives. One would assume that the agency and/or consultants responsible for publishing the incorrect information would take immediate steps to revise the report to avoid additional incidents of publication of false data. However, I received yesterday afternoon an email from a representative of the responsible agency/office indicating the state does not have the funding to correct the DRMS Phase 1 Final Report, even though DWR acknowledges it is wrong. ***I therefore request that all reference to DRMS Phase 1, Final Report, and all data regarding Delta Island history and the risk calculations thereof be removed from the California Water Plan Update 2009 until such time as a corrected DRMS Phase 1 Report has been published.***

Continued next page

COVERED BERTHS * WATERFRONT RV SITES * BOAT LAUNCH * STORES * GAS DOCK * GUEST DOCK * DRY STORAGE

No comments

- n/a -

Page 2: Comments California Water Plan Update 2009

Given the fact that the California Water Plan Update utilizes data from DRMS Phase 1 Final Report, and references the report extensively, I am also requesting an extension of the public comment period until January 15, 2010, to give me time to review the complete report and provide you with a complete list of instances where reference to DRMS Phase 1 Final Report and/or data should be removed from the California Water Plan Update 2009.

As a general comment, I object to any proposed revisions to levees, water flows, conveyance, salinity and infrastructure that would detrimentally affect current uses of Delta Islands *without first completing accurate scientific assessments*, and second, consulting directly with the land owners affected by proposed revisions to determine appropriate mitigation of impact on the land owners and businesses of the Delta. Please note that I do *not* object to reasonable use of Delta water resources for transport elsewhere if such reasonable use does not negatively impact the lands, historic river towns, people, businesses, recreation and other permitted existing uses of the Delta today.

Thank you for your attention to this important matter.

Respectfully submitted,



Nicole S. Suard, Esq., Managing Member, Snug Harbor Resorts, LLC

Attachments:

DRMS Phase 1 Final Report Ryer Island data:

http://ryerisland.com/images/floods/DRMSf1_wrong_on_Ryer.pdf

DWR confirmation of incorrect data:

[Http://ryerisland.com/ryer_flood_history_email.jpg](http://ryerisland.com/ryer_flood_history_email.jpg)

Cc by email:

"Paul Marshall" <marshall@water.ca.gov>,

"Bagheban, Sean" <seanb@water.ca.gov>

"Mike Floyd" mfloyd@water.ca.gov

Jgrinstead@usbr.gov

No comments

- n/a -

The attached maps and tables provide examples of incorrect data contained in the **Delta Risk Management Strategy (DRMS) Phase 1, Final Report**

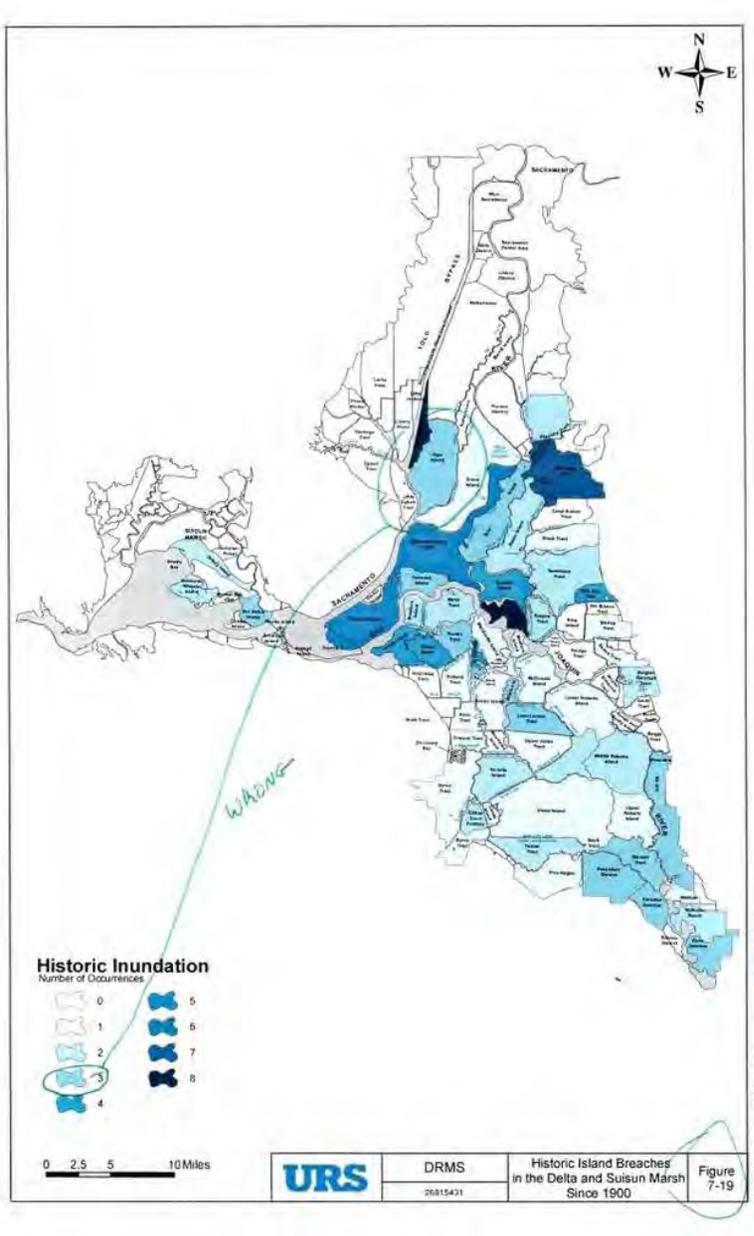
Wrong data was found in **Sections 4, 7, 9 and 13** regarding island inundation history. Other sections that utilize the incorrect island data to calculate other risk factors may also be incorrect due to use of false base data.

Examples compiled and submitted to DWR various agencies, 2008 through November 2009; as of 11-19-09 corrections have not been made although DWR acknowledged the incorrect data.

OR87-86

Response to comment OR87-86

Comment noted.



Response to comment OR87-87

Comment noted.

OR87-87

Response to comment OR87-88

Comment noted.

Table 7-9b Chronologic List of Flooded Islands Since 1900

Island Flooded	Year	Island Flooded	Year
TERMINOUS	1907	HOLLAND	1980
CLIFTONCOURT	1907	LITTLE MANDEVILLE	1980
SARGENT BARNHART	1907	LOWER JONES	1980
STATEN	1907	WEBB	1980
VICTORIA	1907	DEAD HORSE	1980
FRANKS	1907	PROSPECT	1980
RYER	1907	LITTLE FRANKS	1981
TWITCHELL	1907	PROSPECT	1981
TYLER	1907	LITTLE FRANKS	1982
BETHEL	1907	MC DONALD	1982
BRANNAN-ANDRUS	1907	VENICE	1982
BOULDIN	1907	EDGERLY	1983
JERSEY	1907	SHIMA (2)	1983
NEW HOPE	1907	FAY	1983
VENICE	1907	GRIZZLY WEST	1983
BETHEL	1908	BRADFORD	1983
BOULDIN	1908	VAN SICKLE (2)	1983
BRANNAN-ANDRUS	1909	LITTLE FRANKS (U)	1983
BETHEL	1909	MILDRED (U)	1983
BOULDIN	1909	VAN SICKLE	1983
SHERMAN	1909	PROSPECT (2)	1983
VENICE	1909	RIVER JUNCTION	1983
MOSSDALE RD17	1911	GLANVILLE	1986
BETHEL	1911	RYER	1986
MIDDLE ROBERTS	1920	SHIN KEE	1986
PARADISE JUNCTION	1920	DEAD HORSE (2)	1986
RD 1007	1925	LITTLE MANDEVILLE	1986
BIG BREAK	1927	PROSPECT	1986
NEW HOPE	1928	MC CORMACK-WILLIA (2)	1986
VENICE	1932	NEW HOPE	1986
MEDFORD	1936	TYLER (2)	1986
FRANKS	1936	LITTLE MANDEVILLE (U)	1994

OR87-88

WADING

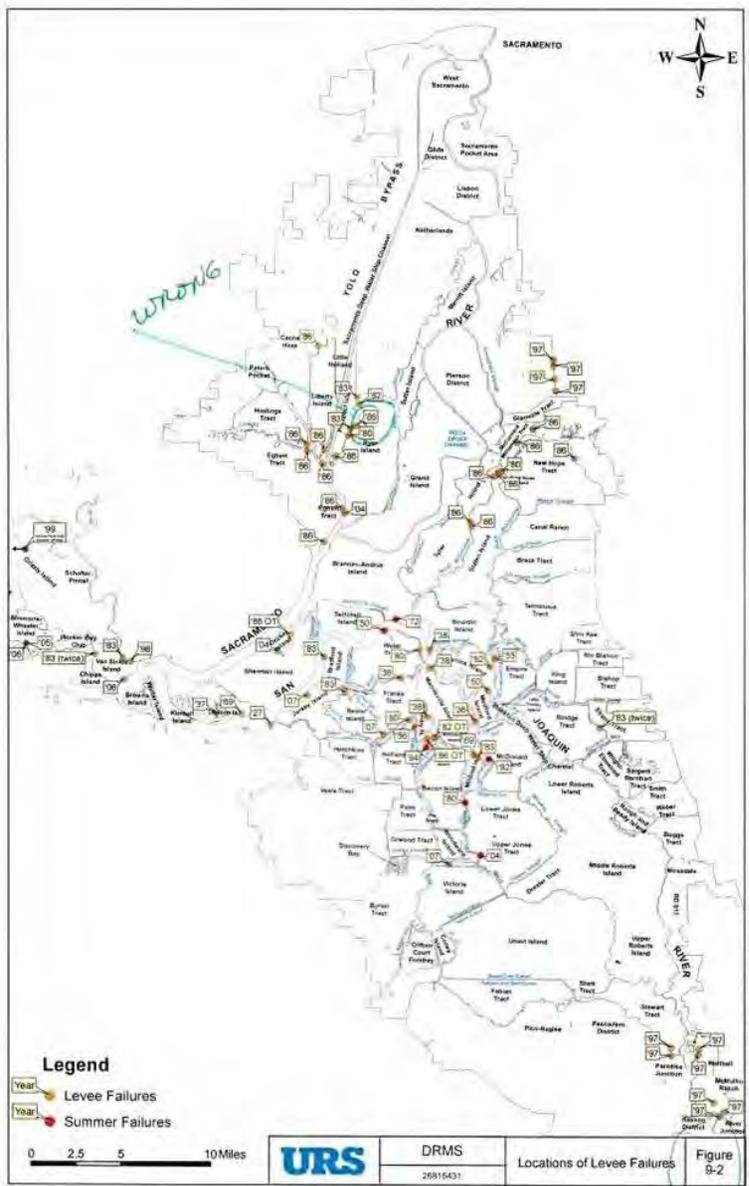
Response to comment OR87-89

Comment noted.

Table 7-9a Islands/Tracts Flooded Since 1900

	Location		Years	No. Of Failures
1	Bacon	Island	1938	1
2	Big Break	Island	1927	1
3	Bishop	Tract	1904	1
4	Brack	Tract	1904	1
5	Byron	Tract	1907	1
6	Coney	Island	1907	1
7	Donlon	Island	1937	1
8	Edgerly	Island	1983	1
9	Grand	Island	1955	1
10	Holland	Tract	1980	1
11	Little Holland	Tract	1963	1
12	Lower Roberts	Island	1906	1
13	Mandeville	Island	1938	1
14	Mc Donald	Island	1982	1
15	Medford	Island	1936	1
16	Palm	Tract	1907	1
17	Rd 1007	Tract	1925	1
18	Shima	Tract	1983	1
19	Union	Island	1906	1
20	Upper Jones	Tract	2004	1
21	Upper Roberts	Tract	1950	1
22	Walthall	Tract	1997	1
23	Wetherbee	Lake	1997	1
24	Bradford	Island	1950-1983	2
25	Cliftoncourt	Tract	1901-1907	2
26	Empire	Tract	1950-1955	2
27	Fabian	Tract	1901-1906	2
28	Fay	Island	1983-2006	2
29	Glanville	Island	1986-1997	2
30	Ida	Island	1950-1955	2
31	McMullin Ranch	Tract	1997-1950	2
32	Middle Roberts	Island	1920-1938	2
33	Rhode	Island	1938-1971	2
34	Sargent Barnhart	Tract	1904-1907	2
35	Staten	Island	1904-1907	2
36	Terminus	Tract	1907-1958	2
37	Victoria	Island	1901-1907	2
38	Webb	Tract	1950-1980	2
39	Little Mandeville	Island	1980-1986-1994	3
40	Ryer	Island	1904-1907-1986 WRONG	3
41	Franks	Tract	1907-1936-1938	3

OR87-89



OR87-90

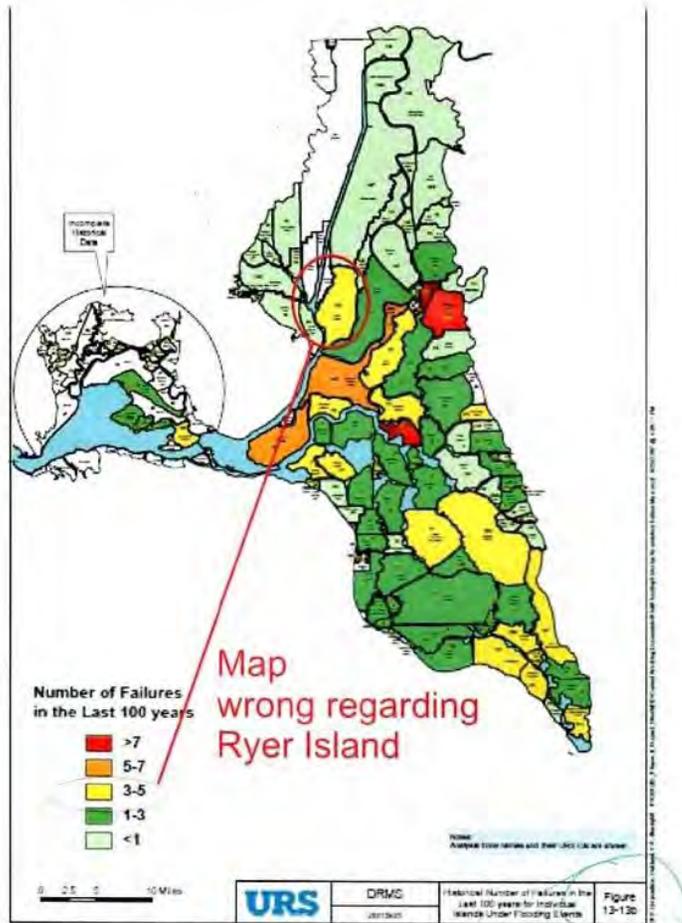
Response to comment OR87-90

Comment noted.

From DWR Risk report, section 13:
If correct data had been used, Ryer Island would be in dark green category or light green instead of the yellowish-green color. Note that per DWR levee improvements, Ryer Island was not improved until AFTER the 1904 and 1907 floods, so the CORRECT inundation figure for Ryer Island should be "0".

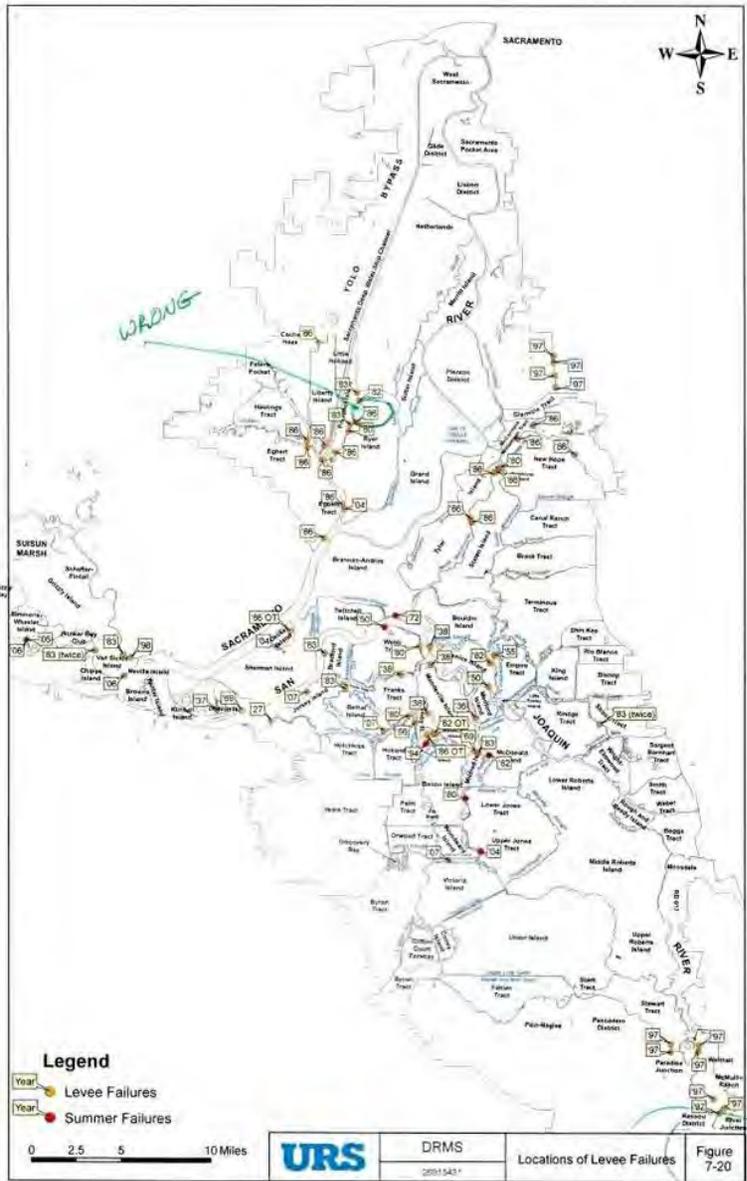
Response to comment OR87-91

Comment noted.



OR87-91

6 of 12



Response to comment OR87-92

Comment noted.

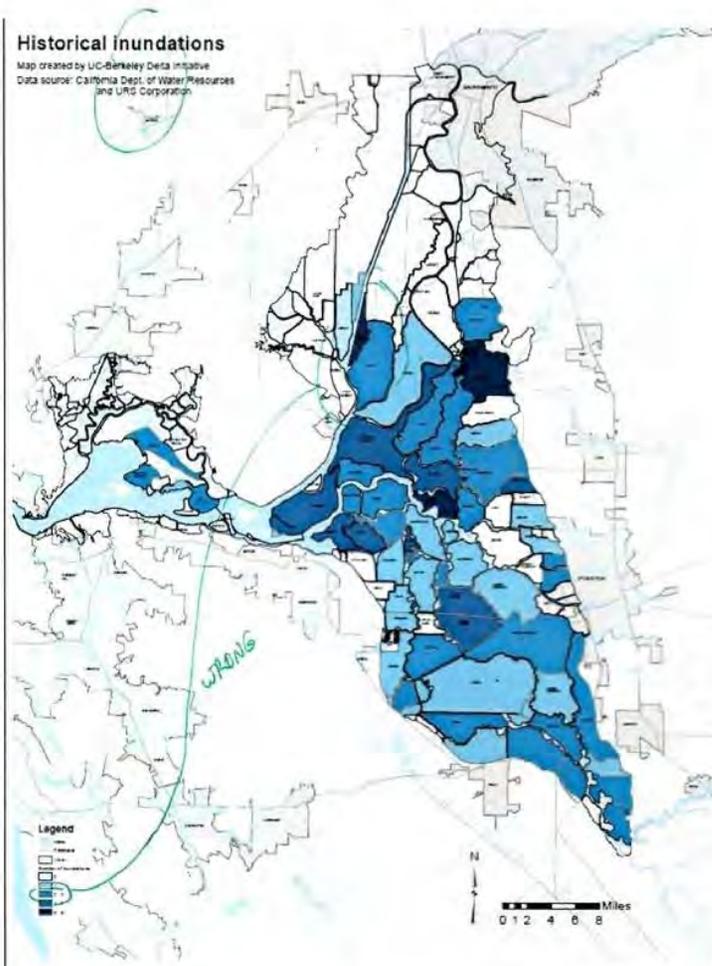
OR87-92

7 # 12

This is an example of a map generated by URS in 2006, which still shows online. DWR historical flood tables then start being generated, using "3" for Ryer Island.

Response to comment OR87-93

Comment noted.



9 of 12

Proof DRMS is wrong as to Ryer Island, and therefore also wrong regarding any calculations that utilized incorrect island inundation numbers:

Ryer Island has not flooded since the current levee was constructed. However, DRMS incorrectly listed Ryer Island as flooding "3-5 times in last 100 years", using 2005 as the study base year. Ryer Island flood, inundation or failure historical data should say "0" or if DWR insists on counting inundation records from *before* the levees were even built, then for Ryer Island the number would be "1" as the non-leveed island history indicates flooding in 1907. Therefore, since the underlying data used to calculate probability of failure is incorrect, the resulting calculations are also incorrect, and the summary of the calculations of all Delta islands statistical probability of failure is also incorrect.

Notice of use of incorrect Ryer Island historical data was provided to DWR/DV representative scientists in August, September and November 2008. During 2009 many different governmental representatives from DWR, DV, BDCP and Solano County were also advised of the incorrect data. In October 2009 DWR acknowledged the incorrect data regarding Ryer Island and agreed to make corrections and notify persons/agencies using DRMS data so that subsequent reports would not be wrong. As of mid-November, 2009, the correction still does not show online. Below are sections of DRMS at the link as shown:

http://www.water.ca.gov/floodmgmt/dsmo/sab/dmsp/docs/Risk_Report_Section_13_Final.pdf

Table 13-8 Delta and Suisun Marsh Individual Island Composite Rates of Failures

URS_ID	URS Name	Annual Mean No. of Failures	Probability of Failure in 25 years	Probability of Failure in 50 years	Probability of Failure in 100 years
143	Rindge Tract	1.38E-02	29%	50%	75%
187	Shima Tract	1.38E-02	29%	50%	75%
7	King Island	1.38E-02	29%	50%	75%
19	Woodward Island	1.38E-02	29%	50%	75%
1002	Drexler Tract	1.32E-02	28%	48%	73%
1003	Roberts Island	1.32E-02	28%	48%	73%
115	Upper Roberts Island	1.32E-02	28%	48%	73%
169	McCormack Williamson Tract	1.31E-02	28%	48%	73%
210	Ryer Island	1.30E-02	28%	48%	73%
6	Bradford Island	1.08E-02	24%	42%	66%
86	Terminus Tract East	1.06E-02	23%	41%	65%
159	Boggs Tract	1.04E-02	23%	41%	65%
171	Cosumnes River Area	1.00E-02	22%	39%	63%
32	Coney Island	9.63E-03	21%	38%	62%
13	Holland Tract	9.07E-03	20%	36%	60%
141	Merritt Island	8.98E-03	20%	36%	59%
120	McMullin Ranch	8.90E-03	20%	36%	59%
147	Grand Island	7.39E-03	17%	31%	52%
14	Dutch Slough West	7.12E-03	16%	30%	51%
77	Elk Grove South East	6.46E-03	15%	28%	48%
175	Canal Ranch	6.46E-03	15%	28%	48%
170	Glanville Tract	6.46E-03	15%	28%	48%
173	Deadhorse Island	6.46E-03	15%	28%	48%
TOTAL DELTA		1.41E+00	100.00%	100.00%	100.00%
TOTAL CACHE SLOUGH AREA		2.67E-01	99.87%	100.00%	100.00%
TOTAL SUISUN MARSH		8.71E+00	100.00%	100.00%	100.00%

OR87-94

Response to comment OR87-94

Comment noted.

Mean annual frequency of failure uses the incorrect Ryer Island inundation history to calculate the probability of failure, as reflected on this map. Probability of failure should be <1% or light green.

Response to comment OR87-95

Comment noted.

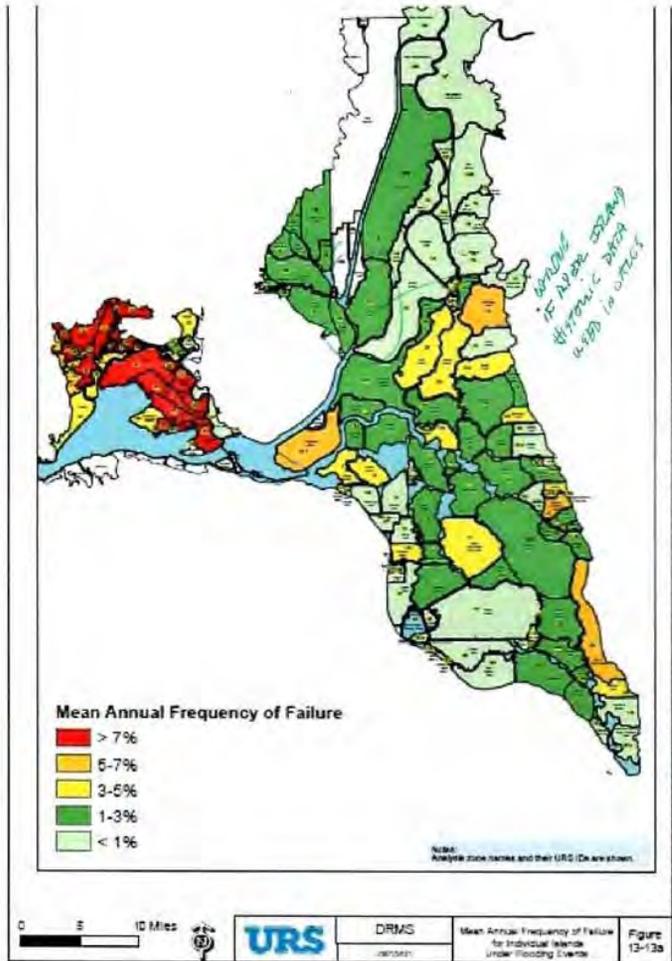


Table B.1 - Summary of Annual Failure Probabilities for Delta Islands

Zone	NAME	Flood	Seismic	Flood + Seismic	Flood PL 84-99	PL 84-99 Flood + Seismic	PL 84-99 +1' Raise Flood	PL 84-99 +1' Raise Flood + Seismic
Central	Bacon Island	0.04	0.02	0.06	0.04	0.06	0.03	0.05
Central	Bouldin Island	0.06	0.03	0.09	0.05	0.08	0.05	0.08
Central	Empire Tract	0.04	0.02	0.06	0.04	0.06	0.03	0.05
Central	Mandeville Is.	0.04	0.03	0.07	0.04	0.06	0.03	0.06
Central	McDonald	0.02	0.03	0.05	0.02	0.05	0.02	0.05
Central	Medford Is.	0.03	0.02	0.05	0.03	0.05	0.02	0.04
Central	Quimby Island	0.04	0.03	0.07	0.04	0.06	0.03	0.06
Central	Rindge Tract	0.01	0.02	0.03	0.01	0.03	0.01	0.03
Central	Venice Island	0.07	0.04	0.11	0.06	0.10	0.06	0.09
Eastern	King Island	0.01	0.01	0.02	0.01	0.02	0.01	0.02
Eastern	Terminus	0.04	0.01	0.05	0.04	0.05	0.03	0.04
Eastern	Wright-Elmwood	0.01	0.01	0.02	0.01	0.02	0.01	0.02
Northern	Brack Tract	0.04	0.01	0.05	0.04	0.05	0.03	0.04
Northern	Canal Ranch	0.04	0.02	0.06	0.04	0.06	0.03	0.05
Northern	Dead Horse	0.03	0.01	0.04	0.03	0.04	0.02	0.03
Northern	Grand Island	0.02	0.05	0.07	0.02	0.07	0.02	0.07
Northern	Bethel Island	0.04	0.04	0.08	0.04	0.07	0.03	0.07
Northern	Ryer Island	0.02	0.03	0.05	0.02	0.05	0.02	0.05
Northern	Staten Island	0.04	0.03	0.07	0.04	0.06	0.03	0.06
Northern	Tyler Island	0.04	0.05	0.09	0.04	0.08	0.03	0.08
Southern	Coney Island	0.02	0.02	0.04	0.02	0.04	0.02	0.04
Southern	Jones Tract	0.05	0.03	0.08	0.05	0.07	0.04	0.07
Southern	Orwood Tract	0.03	0.01	0.04	0.03	0.04	0.02	0.04
Southern	Palm Tract	0.05	0.03	0.08	0.05	0.07	0.04	0.07
Southern	Roberts Island	0.03	0.03	0.06	0.03	0.06	0.02	0.05
Southern	Union Island	0.01	0.03	0.04	0.01	0.04	0.01	0.04
Southern	Victoria Island	0.03	0.03	0.06	0.03	0.06	0.02	0.05
Southern	Woodward	0.01	0.03	0.04	0.01	0.04	0.01	0.04
Western	Bradford Is.	0.04	0.05	0.09	0.04	0.08	0.03	0.08
Western	Brannan-Andrus Is.	0.03	0.05	0.08	0.03	0.08	0.02	0.07
Western	Holland Tract	0.05	0.03	0.08	0.05	0.07	0.04	0.07
Western	Hotchkiss	0.01	0.03	0.04	0.01	0.04	0.01	0.04
Western	Jersey Island	0.05	0.05	0.10	0.05	0.09	0.04	0.09
Western	Sherman Is.	0.02	0.05	0.07	0.02	0.07	0.02	0.07
Western	Twitchell Is.	0.03	0.05	0.08	0.03	0.08	0.02	0.07
Western	Webb Tract	0.05	0.05	0.10	0.05	0.09	0.04	0.09

* WHICH RYER ISLAND?

OR87-96

Response to comment OR87-96
 Comment noted.

Source: Author calculations, using data from Draft DRMS Phase 1 Risk Analysis (J.R. Benjamin and Associates, 2007).

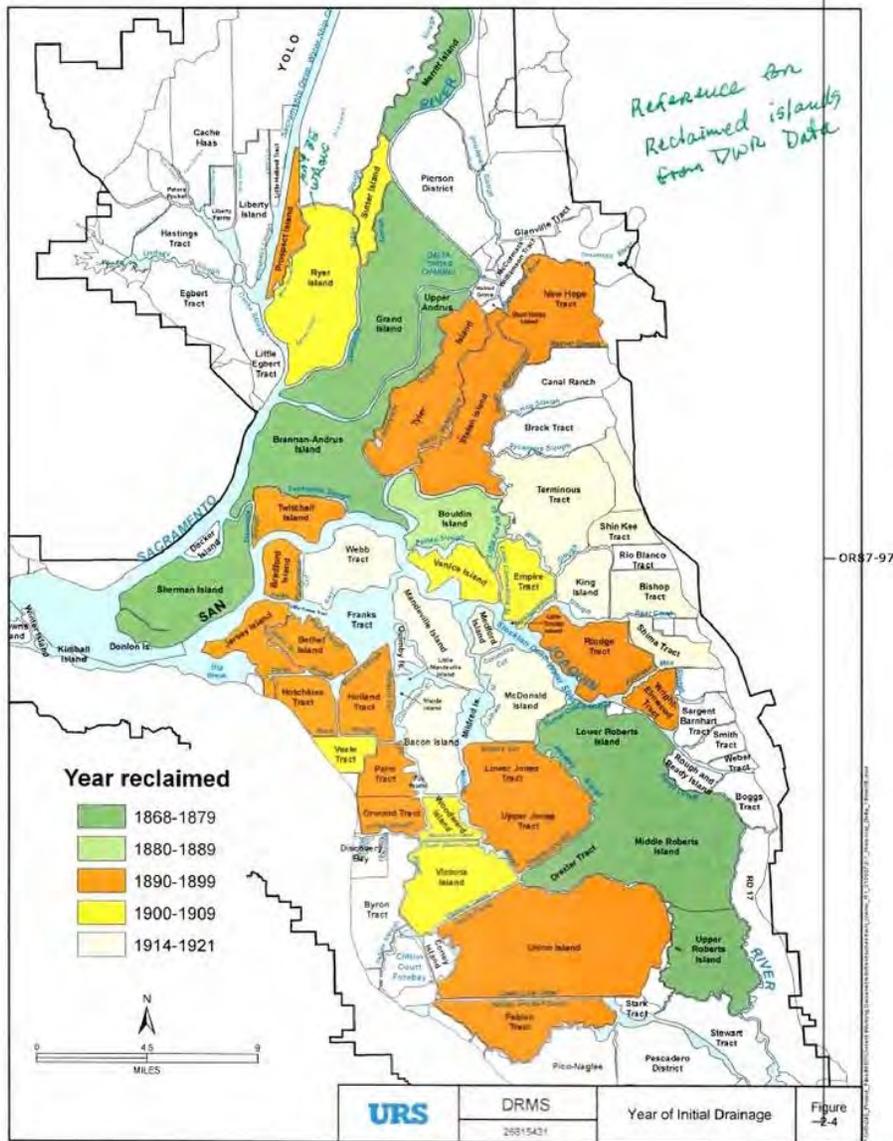
Notes: "PL 84-99" denotes scenarios in which levees are upgraded to meet the higher federal levee

↓ USE OF DAM DATA

11 of 12

Response to comment OR87-97

Comment noted.



Reference on Reclaimed islands from DWR Data

OR87-97

12 of 12

No comments

- n/a -

TO: Tara Smith
FROM: Michael Mierzwa
DATE: August 26, 2001
RE: Delta Wetlands Preliminary DSM2 Studies

1. Introduction

Delta Wetlands proposes to convert two Delta islands, Bacon Island and Webb Tract, into reservoirs. Both islands would be used to store water during surplus flow periods. Later this water would be released for export enhancement or to meet Delta flow/water quality requirements.

This study uses the DWRSIM 771 existing condition hydrology as the input for a series of DSM2-HYDRO and QUAL 16-year planning studies. This study ran from 1975 – 1991. This hydrology was used by Jones and Stokes in their analysis for Delta Wetlands and is the basis of the Delta Wetlands Environmental Impact Report (EIR). This study is based on the most recent version of the DSM2 geometry, and also makes use of QUAL's ability to model multiple water quality constituents. In addition to the traditional EC modeling, QUAL was used to simulate dissolved organic carbon (DOC) and ultraviolet absorbance at 254 nm (UVA) impacts due to the operation of the two island reservoirs.

This report includes the descriptions of the two scenarios (a base case and an alternative based on the Delta Wetlands project) and the results of these DSM2 simulations at M&I locations. The operation (flow into and out of the island reservoirs) was provided by David Forkel of Delta Wetlands (2001a). The physical specification for the Delta Wetland islands is based on the Delta Wetlands EIR. A brief discussion of the DWR-Municipal Water Quality Investigations (MWQI) data that were used as the boundary conditions for the QUAL DOC and UVA simulations is also provided.

2. Description of Scenarios

The two different scenarios were based on the DWRSIM 771 existing condition hydrology. The base case simulated the Delta without the operations of the proposed Delta Wetlands project. The Delta Wetlands alternative included the proposed operations of Bacon Island and Webb Tract, but did not account for the changes in land use of the two proposed habitat islands. Brief summaries of both scenarios are described below in Table 1, followed by more detailed descriptions of these assumptions.

No comments

- n/a -

Table 1: Summary of Planning Scenarios.

	<i>Base: No Action</i>	<i>Alternative: Delta Wetlands Operations</i>
Project Islands	No.	Yes. (Bacon Island and Webb Tract.)
Habitat Islands	No.	No.
Boundary Flows	DWRSIM 771.	DWRSIM 771.
Boundary Stage	25-hour Repeating Tide.	25-hour Repeating Tide.
Martinez EC	ANN w/ Net Delta Outflow.	ANN w/ modified Net Delta Outflow.
Rim Boundary EC	DWRSIM 771.	DWRSIM 771.
Island Diversions	Historical DICU.	Modified DICU.
Island Return Flows	Historical DICU.	Modified DICU.
Island Seepage	Historical DICU.	Historical DICU.
Martinez Boundary DOC / UVA	N/A	N/A
Rim Boundary DOC / UVA	MWQI data.	MWQI data.
Island EC	Historical DICU.	Historical DICU. DSM2 mixed and stored EC in Project reservoirs.
Island DOC / UVA	MWQI data.	MWQI data. Three weekend measurements for Project reservoirs.

2.1. No Action (Base Case):

The DWRSIM 771 existing conditions study was used to provide the rim boundary flows and exports. Gate and barrier configurations were designed to account for the proposed operation schedule for the South Delta Permanent Barriers (which include Old River at Head, Old River at Tracy, Middle River, and Grant Line Canal). The Suisun Marsh Salinity Control Gate and Clifton Court Forebay Gates were both operated according to previous DSM2 planning studies that used the DWRSIM 771 existing conditions study as a base case.

Historical DSM2 Delta Island Consumptive Use (DICU) data were used for all the HYDRO simulations and the QUAL EC simulation. Martinez EC data were generated using an artificial neural network (ANN) and Net Delta Outflow. DWR-MWQI observations were used to create synthetic time series for DOC and UVA (see Section 3.6) at the following rim boundaries: San Joaquin River, Sacramento River, and the Eastside streams. The flux of DOC and UVA from the downstream boundary at Martinez (the sea) was considered insignificant. Details on the development of agricultural return DOC and UVA data for DSM2 based on the MWQI observations is described in the report *Revision of Representative Delta Island Return Flow Quality for DSM2 and DICU Model Runs* (Dec. 2000) as prepared by Marvin Jung and Associates, Inc.

2.2. Delta Wetlands Operation (Alternative 1):

Jones and Stokes used the DWRSIM 771 existing conditions study to create a preliminary schedule of diversions into and releases out of the two proposed Delta Wetlands islands. This schedule did not separate the storage, diversions, and releases

No comments

- n/a -

between the two islands; however, a simple operating rule was proposed to govern the independent operation of the islands. This proposed set of rules is listed below in Table 2.

Table 2: Proposed Rules of Operation.

Filling (Diversions to Islands)	Fill Bacon Island first, then fill Webb Tract.
Emptying (Releases from Islands)	Empty Bacon Island first, then empty Webb Tract.

Using the above operation rules and the target monthly storage for the project reservoirs provided by Jones and Stokes, the diversions and releases for each island as well as each pump were separated for use in DSM2-HYDRO. The result of these operation rules is that each island fills and empties at different times and for different amounts. The combined diversions for both pumps at each island are shown below in Figure 1. The releases for each island are shown below in Figure 2. The process by which these diversions and releases were calculated is further explained in Appendix A.

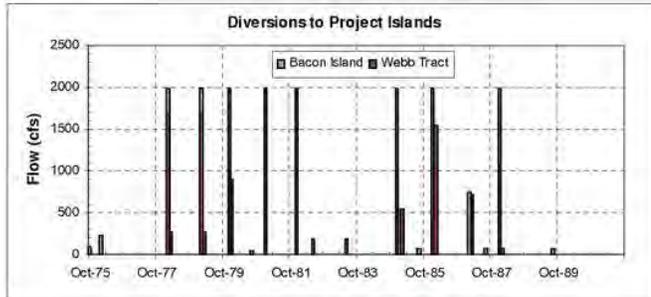


Figure 1: Diversions to Delta Wetlands.

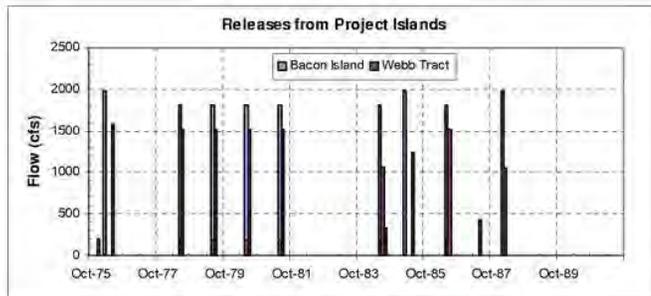


Figure 2: Releases from Delta Wetlands.

No comments

- n/a -



Figure 4: DSM2 Representation of Webb Tract.

The volume of water stored in each island reservoir is a direct function of the amount of water diverted into or released from each island. Volume of a reservoir in DSM2 is the product of the reservoir's surface area and its current stage level. The project island reservoirs were isolated from the Delta channels, thus there was no limit to the stage in either reservoir. In order to prevent drying up of the island reservoirs 5 ft of water was assumed to be present on both islands at the beginning of the simulation.² This water was considered dead storage and was never released into the Delta. Although the initial concentration of this dead storage is 0 umhos/cm, inchannel water was diverted into Bacon Island and later released several times during the DSM2 spin-up period in 1974 and 1975. Through this activity the dead storage EC concentration in Bacon Island was 161 umhos/cm at the start of the DSM2 simulation.

Water quality from the two Delta Wetland island reservoirs was modeled two different ways using DSM2. These two different approaches are described below.

For the QUAL EC simulations the reservoirs were isolated from the Delta channels as described above and flow between the surrounding channels and the project islands were regulated in DSM2 by a direct "object-to-object" transfer. When water was diverted into the islands, this object-to-object transfer moved water from both of the intake nodes for the islands being filled into the reservoir. This process was reversed in accordance with the release schedule except that water was then discharged at the discharge locations listed in Table 3.

This process allowed QUAL to automatically mix incoming EC concentrations from the nearby channels with the EC already present in the reservoirs; thus the water released from the reservoirs would better represent the mixed water quality of the water stored in the reservoirs. The EC concentrations of the island reservoirs only changed when new

² The choice of 5 ft of depth was chosen as a preliminary starting depth in the EC simulations in order to prevent DSM2 from drying up. DSM2 does not support the wetting and drying of channels or reservoirs. Future DSM2 studies will use a smaller depth for the reservoir dead storage.

No comments

- n/a -

water was transferred into the islands, not when water exited the islands. This process is described in greater detail in Section 4.1.

For the QUAL DOC and UVA simulations, these preliminary studies were designed to investigate the impact of different DOC and UVA “bookend” measurements. Instead of using active reservoirs, diversions to the islands were treated as sinks located at the two intake nodes for each island and the releases from the islands were treated as sources located at the discharge locations. Water released back into the Delta through the discharge nodes was given a fixed DOC or UVA concentration depending upon the scenario. A list of DOC and UVA values for both islands is listed below in Table 4.

Table 4: Summary of DOC and UVA Delta Wetlands Operations Values.

<i>Bookend Simulation</i>	<i>DOC (mg/L)</i>	<i>UVA (cm⁻¹)</i>
Low	6	0.289
Middle	15	0.686
High	30	1.348

The UVA measurements were based on the DOC concentrations, using the relation developed in the *Revision of Representative Delta Island Return Flow Quality for DSM2 and DICU Model Run* report (see Equation 1).

$$UVA = 0.02374 + 0.04415 \times DOC \quad [\text{Eqn. 1}]$$

With changes in the land use of the project islands, the diversions and return flows for Bacon Island and Webb Tract were modified using the Delta Island Consumptive Use (DICU) model. DICU computes the consumptive use at each node in DSM2 based on the historical needs for each island or water habitat in the Delta. The diversions and return flows for each island are distributed to different nodes, such that the modeled diversions, return flows, and/or seepage at any one node frequently include the individual contributions from different islands. The contributions from Bacon Island and Webb Tract were removed from all of the nodes surrounding both islands (see Figures 3 and 4). DSM2 mixes return flows with fixed “drainage” water quality measurements at each node. Even though the contributions from the project islands were removed from the intake and release nodes, the diversions and return flows from the neighboring islands could mix with the measurements coming from the island reservoirs. In order to prevent DSM2 from mixing the return flows from these neighboring islands with the fixed bookend concentrations, the diversions and return flows from other islands were relocated from the intake and pump locations listed in Table 3 to nearby nodes.

Since seepage in DSM2 represents the amount of water that comes from the Delta channels to the islands, it was not modified for either scenario.

No comments

- n/a -

3. Simulation Inputs

3.1. Delta Cross Channel

The position of the Delta Cross Channel was predetermined by the DWRSIM 771 existing conditions study. For most years, the Delta Cross Channel was closed except during the summer months Jun. – Sep. when flow at Freeport (as modeled by DWRSIM) was less than 23,000 cfs. In some wet years, such as 1982 and 1983 the Delta Cross Channel was also closed during some of these months due to high flow conditions.

3.2. Flow

Rim flows, exports, and diversions not covered above in the description of the Delta Wetlands Operation came from the DWRSIM 771 existing conditions study. The rim flows include the Sacramento River, San Joaquin River, and the Yolo Bypass and then a combined parameter representing the eastside flows into the Delta. Exports include the State Water Project (SWP), the Central Valley Project (CVP), Vallejo diversions, North Bay Aqueduct diversions, and Contra Costa Canal diversions from Rock Slough. Contra Costa operations on the Old River for the Los Vaqueros reservoir were not available at the time this study was conducted.

The combined SWP and CVP exports are shown in Figure 5 (below) in order to provide a general feel for the amount of water that would be flowing south through the Central Delta over the study period.

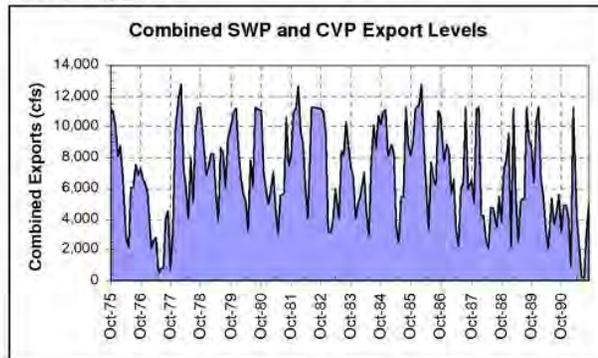


Figure 5: Combined SWP and CVP Export Levels.

3.3. Stage

A repeating tide was used as the downstream boundary condition at Martinez. This tide includes flood / ebb variations, but does not include Spring / Neap variations.

No comments

- n/a -

3.4. South Delta Permanent Gates

The proposed future operation of the four South Delta fish and agricultural permanent gates, Old River at Head, Old River at Tracy, Middle River, and Grant Line Canal barriers, was used in this study. When operating, the gates only allowed flow in the upstream direction. Each structure is either installed or removed during one of 13 planning periods, see Figure 6 below. Each month represents one planning period, with the exception of April, which is divided into two planning periods. This was done so the gates could be installed in the middle of the month, per the proposed future operation of the gates.

Barrier	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Old River @ Head												
Old River @ Tracy												
Middle River												
Grant Line Canal												

Figure 6: Schedule of Permanent Barrier Operations.

3.5. Other Gates

The Suisun Marsh Salinity Control Gate was operated October through May of each year. The Clifton Court Forebay Gates were operated based on a schedule created for prior DSM2 planning runs that used the same DWRSIM 771 study as input. The Forebay Gate schedule would open the gates at different times based on one of three priorities. These priorities optimize the intake of water into the Forebay while offering increasing levels of protection to the water levels in the South Delta. A complete description of these priorities and their implementation in DSM2 can be found in *Status Report on Technical Studies for CALFED Water Management Planning* (Jul. 1999).

3.6. Quality

Water quality inputs were applied both at the external boundaries and at Delta interior locations through Delta Island Consumptive Use (DICU). The sources and nature of these data are discussed below.

3.6.1. EC

As discussed above in the description of the base case, the Martinez downstream boundary EC was generated using an ANN with Net Delta Outflow as the input. Kristof coefficients were used to convert daily EC into hourly values for use in QUAL.

The rim flow boundaries for the Sacramento River, Yolo Bypass, and eastside streams were all given fixed EC concentrations of 125, 150, and 125 umhos/cm respectively.

Standard DICU data developed from DWR Delta Modeling's DICU model were used to represent the quality of water draining off the Delta islands. For the base case all of the

No comments

- n/a -

standard DICU node locations were used. For the alternate scenario some of the nodes surrounding Bacon Island and Webb Tract were modified (see section 2.2 for a detailed description of how this was done) in order to account for the change in use of these two islands.

3.6.2. DOC

Based on monthly dissolved organic carbon observations from DWR MWQI, time series of monthly average DOC were created for the Sacramento River, San Joaquin River, and eastside streams (see Figure 7). The Sacramento River data were based on Green's Landing observations. Vernalis observations were used for the San Joaquin River data. The eastside stream data were based on American River observations. These three time series were applied as the boundary conditions. It was assumed that the amount of DOC at the downstream Martinez boundary was negligible.

Bookend values were used to represent the DOC coming off the project islands. Table 5 (located above) summarizes these bookends.

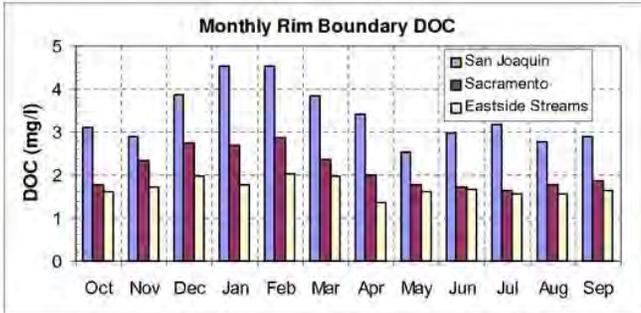


Figure 7: Monthly Averaged DOC Boundary Conditions.

DICU data developed as part of the DWR MWQI studies were used to represent the DOC (mg/l) draining off the Delta islands (see Jung, 2000). Three different ranges of DOC returns were used in the DOC DICU data. Figure 8 represents the DOC values as modeled in DSM2 for the three different ranges. As illustrated in Figure 8, high range DOC is associated with DOC releases that peak out above 30 mg/l. Similarly, the low range DOC is used for islands that were found to have low DOC releases. For the base case, all of the historic DICU agricultural diversions and return flows were used. Some of the agricultural diversions and return flows in the alternate scenario were modified as described in Section 2.2.

No comments

- n/a -

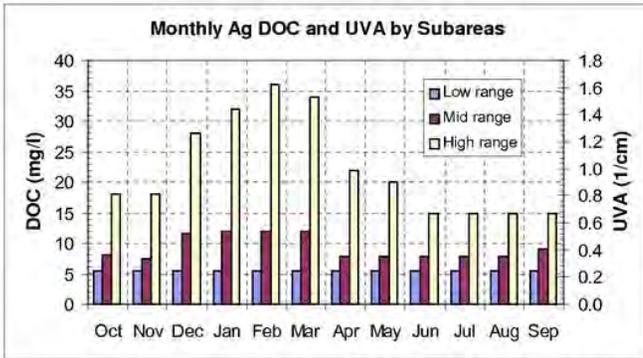


Figure 8: Monthly Averaged DOC and UVA from Agricultural Returns.

3.6.3. UVA

Based on monthly UVA-254 observations from DWR MWQI, time series of monthly average UVA were created for the Sacramento River, San Joaquin River, and eastside streams (see Figure 9). These three time series were applied as the boundary conditions. Again, the UVA-254 value at the downstream Martinez boundary was considered negligible.

Bookend values were used to represent the UVA coming off the project islands. Table 5 (located above) summarizes these bookends. These bookends were calculated using the relationship (Equation 1) described in Section 2.2 developed by Jung.

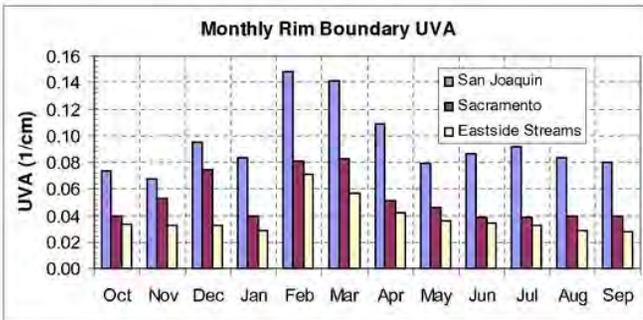


Figure 9: Monthly Averaged UVA Boundary Conditions.

No comments

- n/a -

DICU data developed as part of the DWR MWQI studies were used to represent the water quality draining off the Delta islands (see Jung, 2000). Three different ranges of UVA returns were used in the UVA DICU data. The values of these ranges are illustrated in Figure 8. The values were calculated by converting DOC to UVA using Equation 1. For the base case, all of the standard DICU agricultural diversions and return flows were used. Some of the agricultural diversions and return flows in the alternate scenario were modified as described in Section 2.2.

3.6.4. Initial Conditions (Cold Start)

DSM2 planning studies cover a 16-year period from Oct. 1975 to Sep. 1991. Unlike HYDRO, QUAL requires a much longer start-up period. In the case of planning studies, no assumption is made about the initial water quality conditions in the Delta; thus an extra year is run in order to simulate the mixing of the delta. This is called a cold start routine. Both HYDRO and QUAL are run for this extra year, but the results are disregarded during this cold start period.

4. Results

This report discusses three water quality constituents, electrical conductivity (EC), dissolved organic carbons (DOC), and ultraviolet absorbance at 254 nm (UVA).

No comments

- n/a -

#1) and Contra Costa's Los Vaqueros (location #2) intakes were along the Old River, as are shown above in Figure 10. [NOTE: The habitat islands shown in Figure 10 were treated as normal Delta islands in DSM2.]

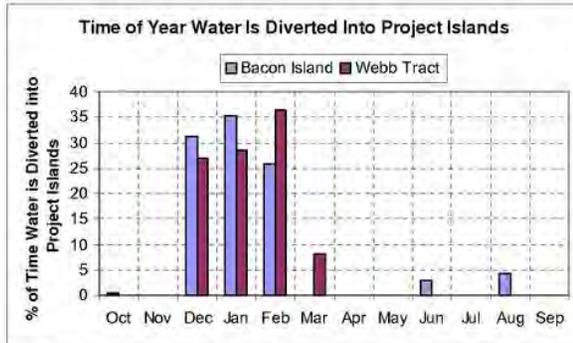


Figure 11: Time of Year Water is Diverted to Project Islands.

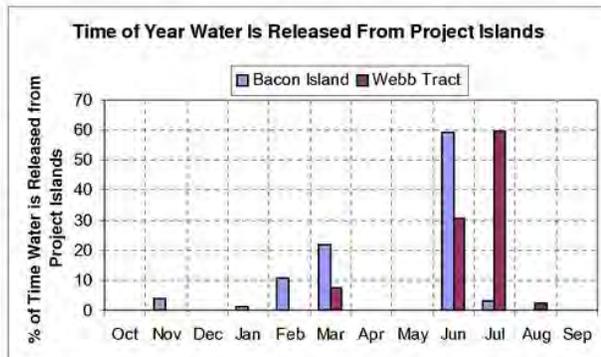


Figure 12: Time of Year Water is Released from Project Islands.

The percentage of the time of year water was diverted to and later released from the project islands for the entire study period is shown in Figures 11 and 12. Generally the islands were filled in the winter months (Dec., Jan., and Feb.) and emptied in the summer months (Jun. and Jul.). The timing of the combined SWP and CVP exports were determined by the DWRSIM 771 study and are shown in Figure 5.

No comments

- n/a -

4.1. EC

As described above in Table 3 (see Section 2.2), two reservoirs were created to simulate EC coming from the two project islands: Bacon Island and Webb Tract. These reservoirs were connected to the Delta in DSM2 by using object to object transfers. This technique controlled when water would be added to or removed from the reservoirs. It also allowed for the intake points to be separated from the discharge location.

Since the water quality of the reservoir islands is a function of the water quality around the intakes and the current water quality in each island reservoir, QUAL was able to store the water and account for changes in water quality due to mixing, as shown in Equation 2. The only time water quality in the islands would change was when water was added, which can be seen in Figures 13 and 14.

$$C_{new} = \frac{C_{intake} V_{intake} + C_{island} V_{island}}{V_{intake} + V_{island}} \quad [\text{Eqn. 2}]$$

If the EC concentration of the water at the intakes was lower than the EC levels inside the island reservoir, then the inflows would reduce the island EC concentration. If the EC concentration of the water at the intakes was higher than the EC levels inside the island, then the inflows would increase the island EC concentration.

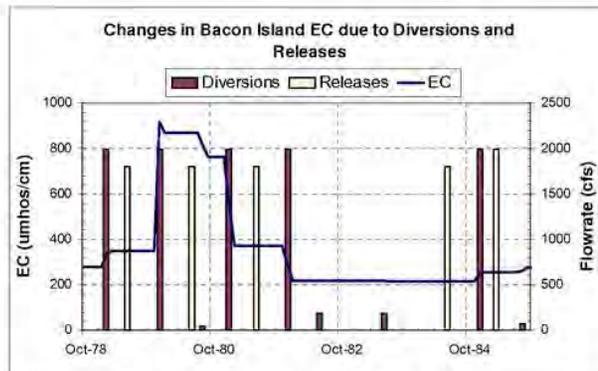


Figure 13: EC (umhos/cm) in Bacon Island.

No comments

- n/a -

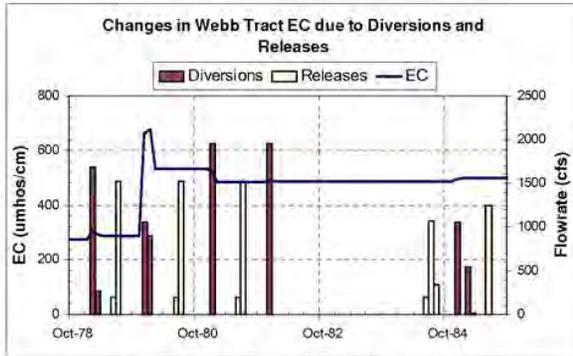


Figure 14: EC (umhos/cm) in Webb Tract.

The act of diverting water into and releasing it from the project islands only had minor changes on the Net Delta Outflow. As shown above in Figure 1, the combined amount of diversion to the islands never exceeded 4,000 cfs. Similarly, the releases (see Figure 2) never exceeded 2,000 cfs. The changes to Net Delta Outflow were fairly small, as is shown below in Figure 15.

Since the EC at downstream boundary (Martinez) was generated using an ANN with Net Delta Outflow as the input, a new EC boundary condition was calculated based on changes to the Net Delta Outflow. The modeled EC for both the base and alternative scenarios is shown below in Figure 16. These differences were fairly small.

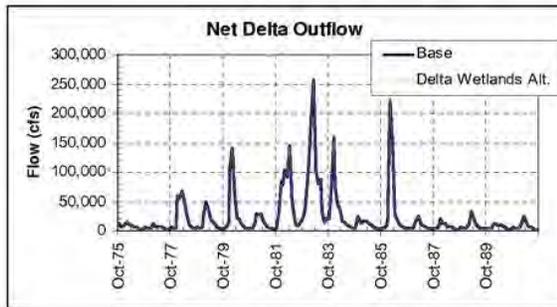


Figure 15: Net Delta Outflow.

No comments

- n/a -

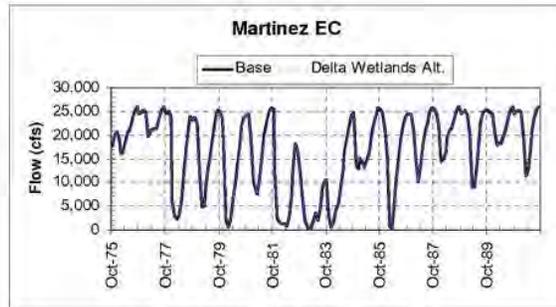


Figure 16: Martinez EC (umhos/cm).

Discharges from the islands did not change the water quality of the reservoirs (see Figures 13 and 14) and had little impact on the EC concentration in the Delta itself. The impacts of the releases from both project islands are compared to the base case scenario in Figures 17 - 28.

The EC values shown in Figures 17, 20, 23, and 26 are monthly averages that were computed using the daily EC values modeled by DSM2. It is important to remember that DWRSIM hydrology was based on a monthly time step, and that the downstream tidal boundary was represented by a repeating tide, which does not include the Spring / Neap cycle that would normally be associated with the draining and filling of the Delta. A chloride standard of 225 mg/l for Rock Slough is shown on all four figures. This standard was converted from Chloride to EC using the relationship shown in Equation 3. Traditionally, a 225 mg/l Cl standard at Rock Slough is used to account for the fact that the 250 mg/l daily standard is being modeled in monthly time steps by DWRSIM and DSM2. In this particular study, the WQMP calls for 90% of the same daily standard (which just happens to be 225 mg/l).

$$EC_{Rock\ Slough} = \frac{Chloride_{Rock\ Slough} + 24}{0.268} \quad [Eqn. 3]$$

The Rock Slough Chloride standard was exceeded at all four urban intake locations for both the base and alternative studies. In fact there is little difference in EC between the two studies. However, since this standard was exceeded for even the base case³, it makes it difficult to evaluate the impact of the Delta Wetlands project operations on the four urban intake locations.

³ DSM2 base case violations of the Rock Slough chloride standard are caused by the mismatch between the G-Model used by DWRSIM and DSM2. An ANN trained using DSM2 has been incorporated into CALSIM II. When future Delta Wetlands DSM2 studies are based on CALSIM operations, this mismatch should be resolved.

No comments

- n/a -

The cumulative distribution function (cdf) of EC for each of the four urban intake locations is shown in Figures 18, 21, 24, and 27. Each cdf curve represents the amount of time that EC is equal to or less than a corresponding EC concentration. For example, the 225 mg/l standard shown in Figure 18 is met approximately 74% of the time for both simulations. These cdfs were calculated based on the frequency histograms for absolute EC for every month of the entire 16-year simulations. Again, there is no significant difference between the base and alternative studies at all four locations.

The WQMP also limits the increase in salinity at any of the urban intakes due to project operation to 10 mg/l chloride (which is equivalent to 37 umhos/cm). The cdf for the change (measured as alternative - base case EC) in EC at each location is shown in Figures 19, 22, 25, and 28. These figures illustrate that over the study period that the overall changes in EC tended to be between -50 and 50 umhos/cm. These plots are useful in measuring the impact of the Delta Wetlands project operations on the four urban intake locations.

A summary of the increase in salinity at the urban intakes is shown below in Table 5. The project islands resulted in increases above the WQMP 10 mg/l chloride standard between 5-6% of the time at both the Old River at Rock Slough and Old River at the Los Vaqueros Reservoir intakes.

Table 5: Percent of time that the change in Cl is larger than 10 mg/l.

<i>Location</i>	<i>% Exceedence</i>
Old River at Rock Slough	6
Old River at Los Vaqueros intake	5
State Water Project	3
Central Valley Project	3

No comments

- n/a -

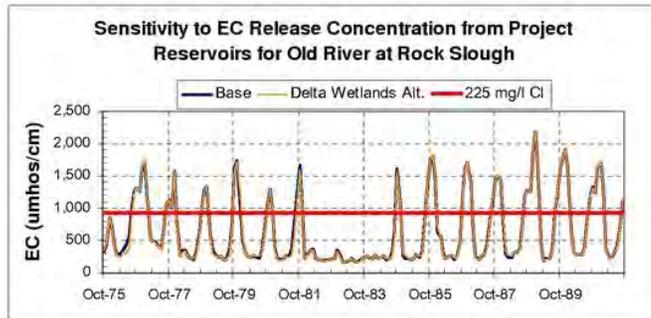


Figure 17: Sensitivity to EC Release Concentration from Project Reservoirs for Old River at Rock Slough.

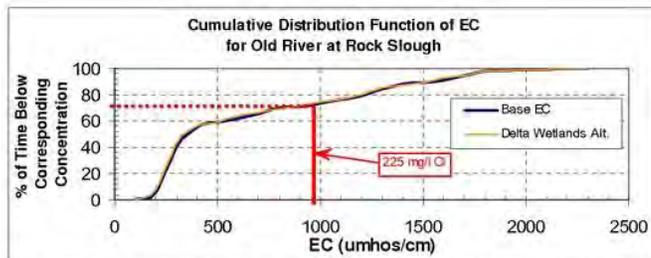


Figure 18: Cumulative Distribution Function of EC for Old River at Rock Slough.

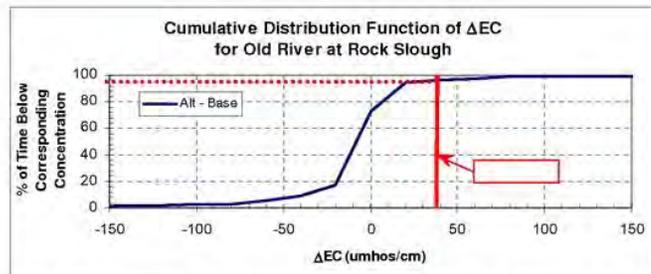


Figure 19: Cumulative Distribution Function of ΔEC for Old River at Rock Slough.

No comments

- n/a -

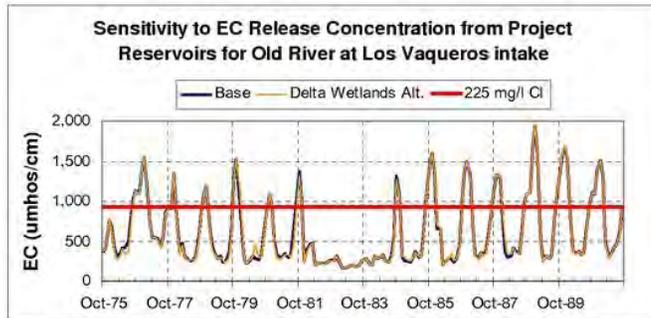


Figure 20: Sensitivity to EC Release Concentration from Project Reservoirs for Old River at Los Vaqueros.

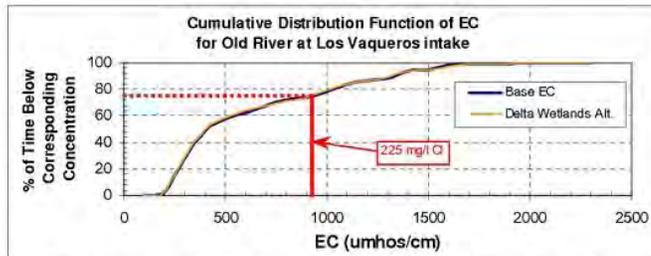


Figure 21: Cumulative Distribution Function of EC for Old River at Los Vaqueros.

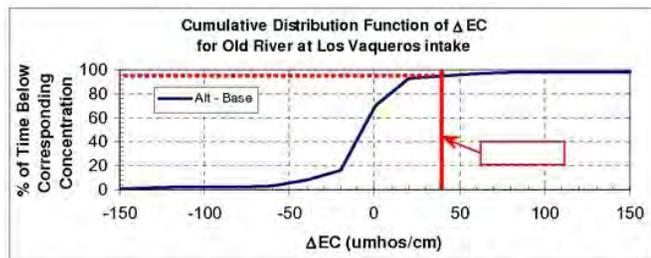


Figure 22: Cumulative Distribution Function of ΔEC for Old River at Los Vaqueros.

No comments

- n/a -

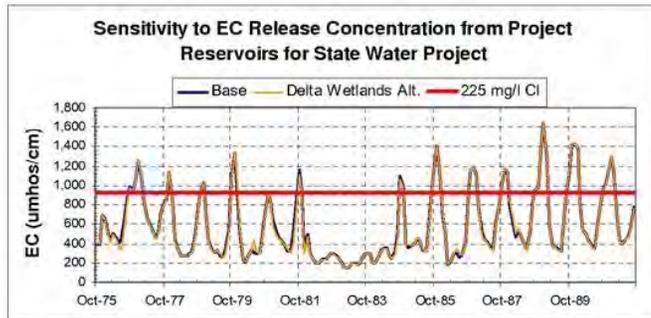


Figure 23: Sensitivity to EC Release Concentration from Project Reservoirs for State Water Project.

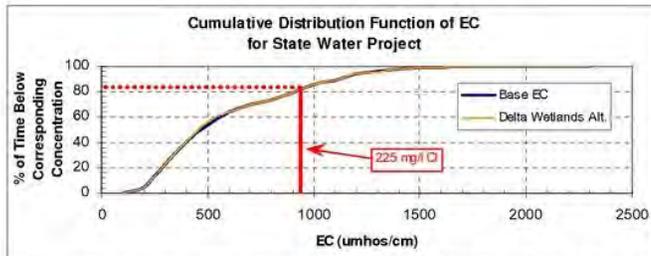


Figure 24: Cumulative Distribution Function of EC for State Water Project.

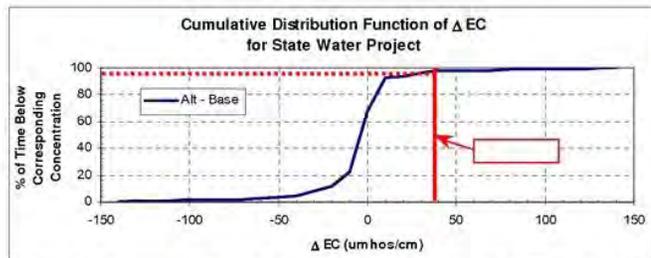


Figure 25: Cumulative Distribution Function of Δ EC for State Water Project.

No comments

- n/a -

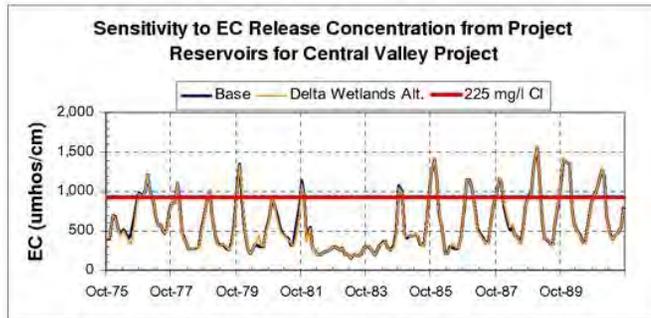


Figure 26: Sensitivity to EC Release Concentration from Project Reservoirs for Central Valley Project.

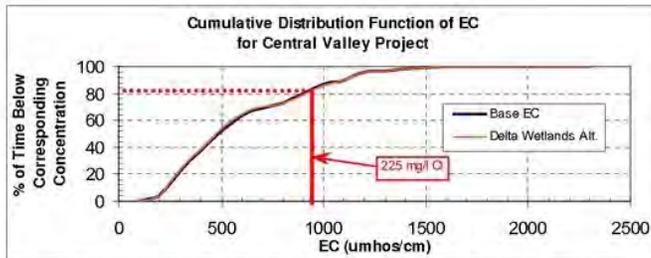


Figure 27: Cumulative Distribution Function of EC for Central Valley Project.

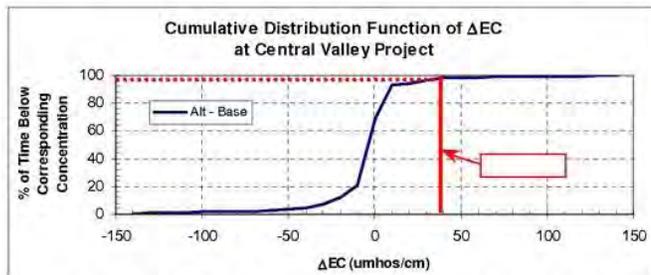


Figure 28: Cumulative Distribution Function of ΔEC for Central Valley Project.

No comments

- n/a -

4.2. DOC

Three different bookend DOC simulations were run to create bookends for the impacts on DOC due to the operation of the Delta Wetlands project. The level of the DOC releases for each of these simulations is described above in Table 4 (see Section 2.2).

It was not necessary to model the two islands as reservoirs (as was done for EC modeling). The diversions into the reservoirs were treated as standard diversions. Water was removed from the Delta at the planned intake locations. Similarly, the releases from the islands were treated as rim or return flows at the planned discharge locations. Fixed DOC concentrations were assigned to these releases. The DOC from these releases would then mix with the DOC present in the Delta that came from both the rim boundaries and DICU data (as described above in the simulation inputs section).

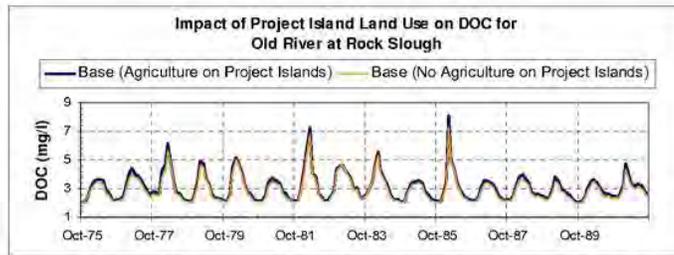


Figure 29: Effect of DICU around the Delta Wetlands Islands on Old River at Rock Slough.

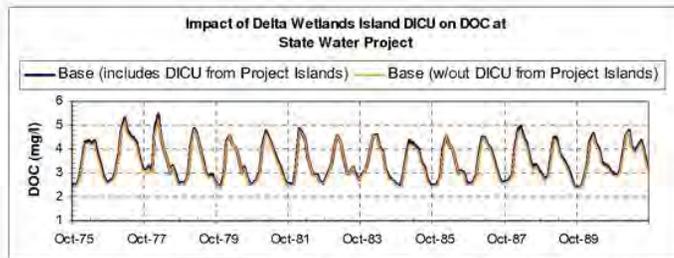


Figure 30: Effect of DICU around the Delta Wetlands Islands at the SWP.

In order to assess the effect of changing the land use on the project islands independently of the planned Delta Wetlands Project operations, an additional scenario, where only the consumptive use for Bacon Island and Webb Tract was changed, was run. This

No comments

- n/a -

difference is referred to as the *DOC ag credit*. As shown in Figures 29 and 30, the *DOC ag credit* at both Old River at Rock Slough and at the State Water Project Tracy Pumping plant is relatively small.

Figures 31, 34, 37, and 40 illustrate the sensitivity to DOC release concentrations at each of the four urban intake locations: Old River at Rock Slough, Old River at the Los Vaqueros intake, the State Water Project intake at Banks Pumping Plant, and the Central Valley Project intake at Tracy. The 4 mg/l DOC standard described in the Delta Wetlands Water Quality Management Plan (WQMP) is shown on these figures.

The base case DOC concentration at Rock Slough, as shown in Figures 29 and 31, ranged between 2 and 8 mg/l. Further south at the State Water Project (see Figures 30 and 37), DOC ranged from 2.5 mg/l to 5.5 mg/l. The maximum monthly averaged DOC concentration at all four export locations over the entire 16-year planning study is summarized in Table 6.

Table 6: Maximum monthly averaged DOC (mg/l) concentrations.

Location	Base	Low (6 mg/l)	Mid (15 mg/l)	High (30 mg/l)
Old River at Rock Slough	8.10	7.03	7.03	7.03
Old River at Los Vaqueros intake	7.90	7.57	10.59	19.37
State Water Project	5.43	5.11	7.89	12.57
Central Valley Project	5.13	5.01	7.47	11.58

In the base case, the periods of high DOC for all of the locations coincided with the high runoff periods that start in the spring and sometimes last through early summer. The *DOC ag credit* discussed above typically appeared to lower the DOC concentrations in the early spring period for all three bookend scenarios at Rock Slough (see Figure 31), but was less significant at the other three urban intake locations (see Figures 34, 37, and 40). The increases in the maximum monthly averaged DOC concentration at all four intake locations in the alternative scenarios occurred in the summer months and correspond with the project island release periods.

The Los Vaqueros intake on the Old River had the highest modeled DOC concentrations for all three alternative scenarios. The Los Vaqueros intake is located between the Bacon Island discharge point and the SWP and CVP intakes, so it is not surprising that the DOC concentrations for Los Vaqueros are higher than the other three locations.

The maximum monthly increase in DOC for each of the bookend scenarios is shown in Table 7. The largest increases for all three simulations were at the Los Vaqueros intake.

Table 7: Maximum monthly increase in DOC (mg/l).

Location	Low - Base	Mid - Base	High - Base
Old River at Rock Slough	0.34	1.63	3.77
Old River at Los Vaqueros intake	0.95	5.97	14.75
State Water Project	0.66	3.09	12.57
Central Valley Project	0.66	3.00	6.91

No comments

- n/a -

The impact of the project operations is better illustrated in Figures 32, 36, 39, and 42 as a time series of the change in DOC (alternative – base). The WQMP limits the maximum increase in DOC due to project operations based on the modeled base case DOC concentration. When the base case DOC is either less than 3 mg/l or greater than 4 mg/l, the maximum increase in DOC is 1 mg/l. When the base case DOC is between 3 mg/l and 4 mg/l, then the alternative DOC can not exceed 4 mg/l. This standard is illustrated as a changing time series with values between 0 to 1 mg/l.

At Old River at Rock Slough the low – base difference did not exceed the WQMP maximum increase in DOC standard. With the exception of the summers of 1984 and 1987 the mid – base difference exceeded the WQMP maximum increase standard. Furthermore, it should be noted that the Webb Tract release in the summer of 1987 was only 432 cfs and there was no Bacon Island release during this period (see Figure 2), which explains why even the high – base difference did not exceed the maximum increase standard in 1987.⁴ There was a similar trend in results at the other three urban intake locations. However, the low – base difference did exceed the WQMP at each of the other three urban intake locations in the summer of 1981 (see Figures 35, 38, and 41).

Frequency histograms of the change in DOC for the entire simulation period were used to create cumulative distribution functions (cdfs) representing the relative change in DOC for each location. These cdfs are shown in Figures 34, 37, 40, and 43. On each cdf, a 1 mg/l limit is shown. The point where this limit intersects each of the three cdf curves represents the percentage of time that the change in DOC due to project operations will be equal to or less than the limit

For example, according to Figure 34, high DOC releases from the project islands will result in changes in DOC at Rock Slough that are equal to or less than 1 mg/l 90% of the time. Similarly, this means that 10% of the time the operation of the project will result in increases in DOC at Rock Slough that are greater than 1 mg/l. A summary of the increases in DOC due to the operation of the project for the entire simulation period is shown below in Table 8.

Table 8: Percent of time that the change in DOC is larger than 1 mg/l.

<i>Location</i>	<i>% Exceedence Low – Base</i>	<i>% Exceedence Mid – Base</i>	<i>% Exceedence High – Base</i>
Old River at Rock Slough	0	4.7	9.9
Old River at Los Vaqueros intake	0	7.3	14.6
State Water Project	0	4.7	10.9
Central Valley Project	0	4.7	10.9

⁴ The Delta Wetlands preliminary operational diversion and release schedule did not completely fill Bacon Island in the spring of 1987. Using the operational rules discussed in Section 2.2, the summer releases of 1987 were met using the over-year storage of Webb Tract. The summer 1987 release was only 432 cfs, which is less than half of any of the other releases from Webb Tract. According to the Delta Wetlands operational release schedule Webb Tract releases typically ranged from 1000 to 1500 cfs.

No comments

- n/a -

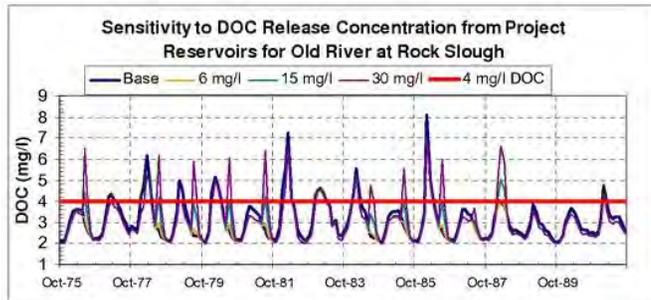


Figure 31: Time Series of DOC for Old River at Rock Slough.

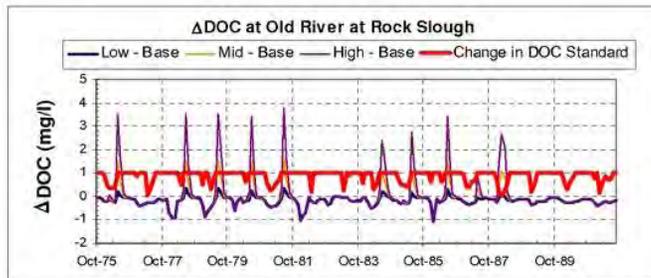


Figure 32: Time Series of Change in DOC (Alternative - Base) for Old River at Rock Slough.

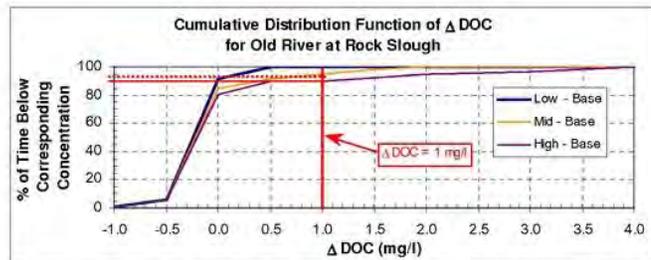


Figure 33: Cumulative Distribution Function of Change in DOC (Alternative - Base) for Old River at Rock Slough.

No comments

- n/a -

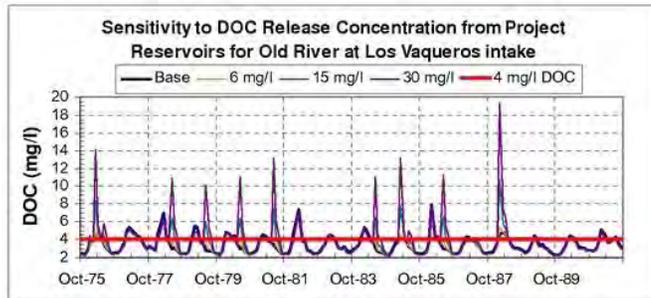


Figure 34: Time Series of DOC for Old River at Los Vaqueros intake.

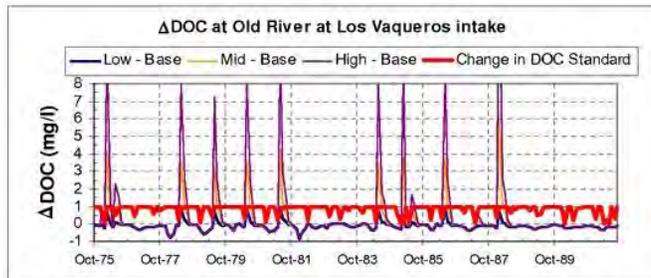


Figure 35: Time Series of Change in DOC (Alternative - Base) for Old River at Los Vaqueros intake.

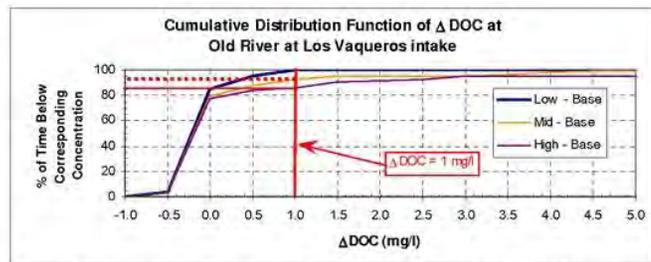


Figure 36: Cumulative Distribution Function of Change in DOC (Alternative - Base) for Old River at Los Vaqueros intake.

No comments

- n/a -

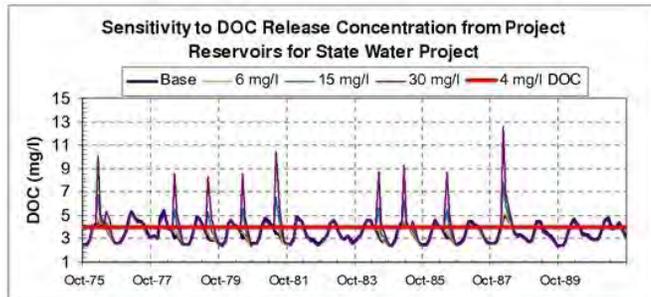


Figure 37: Time Series of DOC for the State Water Project.

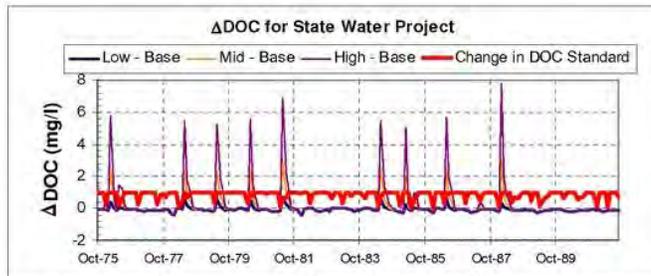


Figure 38: Time Series of Change in DOC (Alternative - Base) for the State Water Project.

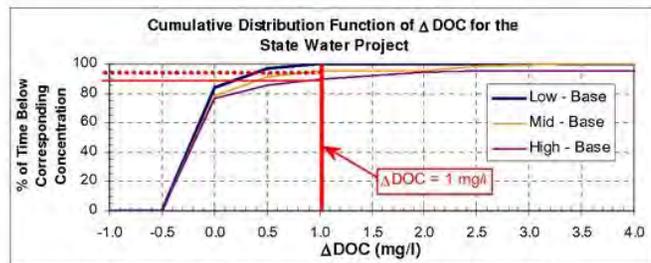


Figure 39: Cumulative Distribution Function of Change in DOC (Alternative - Base) for the State Water Project.

No comments

- n/a -

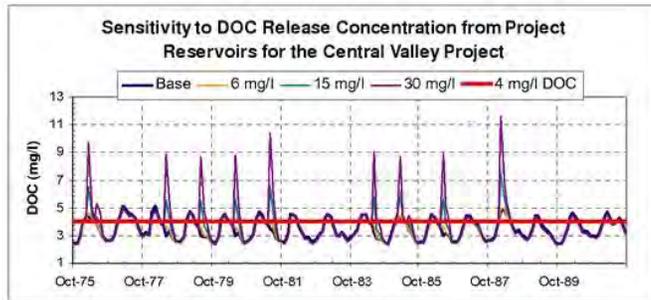


Figure 40: Time Series of DOC for the Central Valley Project.

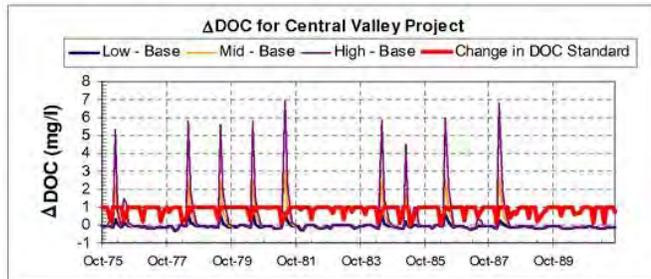


Figure 41: Time Series of Change in DOC (Alternative - Base) for the Central Valley Project.

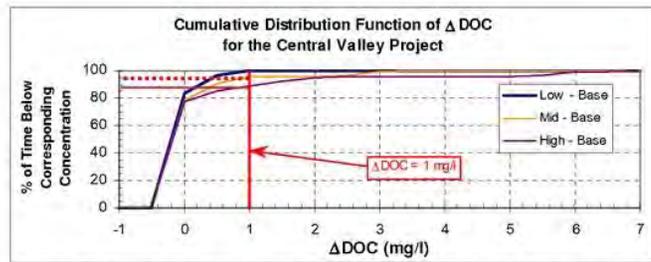


Figure 42: Cumulative Distribution Function of Change in DOC (Alternative - Base) for the Central Valley Project.

No comments

- n/a -

4.3. Long-Term DOC

The mass loading of DOC for the State Water Project and Central Valley Project was calculated by multiplying the DSM2 modeled DOC concentrations with the DWRSIM 771 monthly exports for each location. The mass loading of DOC for the Old River at Rock Slough and Old River at the Los Vaqueros Intake was calculated by multiplying the DSM2 modeled DOC concentrations with planned future CCWD diversions developed using CCWD's CCWDOPs model (Denton 2001)⁵.

The WQMP stipulated that the long-term increase in DOC mass loading be calculated as a 3-year running average. Time series plots of the long-term DOC mass loading (expressed in 1000 metric tons / month) at each of the urban intake locations are shown in Figures 43, 46, 49, and 52. The low-DOC release concentration (6 mg/l) from the project islands resulted in long-term DOC mass loading that closely resembled the base case long-term DOC mass loading at all four urban intake locations. Similarly, the high-DOC release concentration (30 mg/l) from the project islands was uniformly higher than the base case DOC mass loading.

The 3-year running averages for both the base case and alternative scenarios were then used to calculate the increases in long-term DOC mass loading using Equation 4.

$$\%DOC_{\text{Increase w/ Project}} = \frac{DOC_{w/o \text{ project}} - DOC_{w/o \text{ project}}}{DOC_{w/o \text{ project}}} \times 100\% \quad [\text{Eqn. 4}]$$

The WQMP limits the long-term DOC mass loading increases at the intake locations due to the project operation to 5%. This 5% limit is shown on the time series plots (Figures 44, 47, 50, and 53) of the long-term percent increase of DOC mass loading at each of the intake locations. As discussed above, the low-DOC release concentration from the project islands did not result in a long-term increase in DOC mass loading at any of the intakes. The maximum percent increases in the long-term DOC mass loading are shown in Table 9.

Table 9: Maximum Percent Increase in Long-Term DOC Mass Loading.

Location	Low - Base	Mid - Base	High - Base
Old River at Rock Slough	-2	12	33
Old River at Los Vaqueros intake	0	14	38
State Water Project	-1	6	18
Central Valley Project	0	9	23

Frequency histograms of the percent increase in long-term DOC mass loading for the entire simulation period were used to create cumulative distribution functions (cdfs) to represent the long-term impact of the project operations. These cdfs are shown in Figures

⁵ The DSM2 simulation did not separate the CCWD diversions from Old River at Rock Slough and Old River at the Los Vaqueros Intake location. Instead DWRSIM 771 diversions at Rock Slough were used to represent CCWD's total diversions. Future DSM2 simulations will make use of the CCWD CCWDOPs planned diversion data.

No comments

- n/a -

45, 48, 51, and 54. The WQMP maximum 5% increase in long-term DOC mass loading standard is shown on each figure. The low-DOC release scenario did not exceed this WQMP standard for any of the intake locations. However, both the mid- and high-DOC release scenarios exceeded the 5% limit at each location.

The percent of the time that each scenario was equal to or below the WQMP maximum 5% increase standard is shown in Table 10. The largest increases in long-term DOC mass loading occurred at Los Vaqueros Reservoir intake on the Old River.

Table 10: Percent Time that the Percent Increase of Long-Term DOC Mass Loading meets the WQMP maximum 5% increase standard.

<i>Location</i>	<i>Low - Base</i>	<i>Mid - Base</i>	<i>High - Base</i>
Old River at Rock Slough	100	48	29
Old River at Los Vaqueros intake	100	39	4
State Water Project	100	84	30
Central Valley Project	100	66	21

No comments

- n/a -

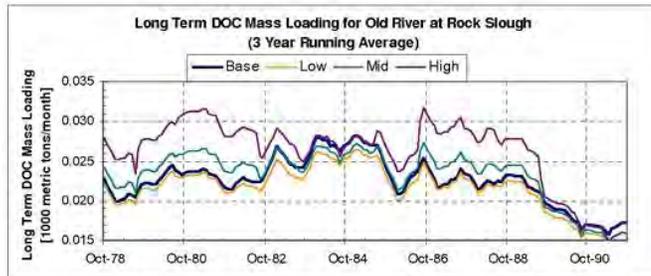


Figure 43: Long Term DOC Mass Loading for Old River at Rock Slough based on a 3-Year Running Average.

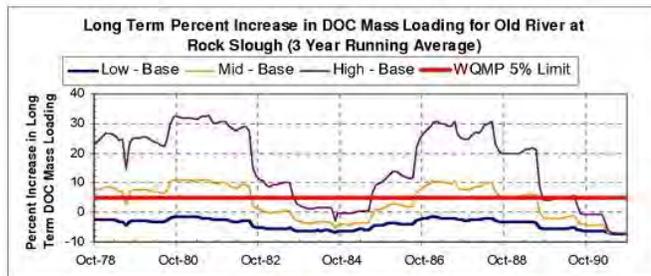


Figure 44: Percent Increase in Long Term DOC Mass Loading for Old River at Rock Slough based on a 3-Year Running Average.

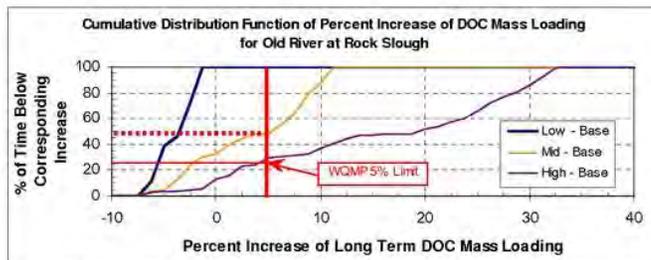


Figure 45: Cumulative Distribution Function of Percent Increase of Long Term DOC Mass Loading for Old River at Rock Slough.

No comments

- n/a -

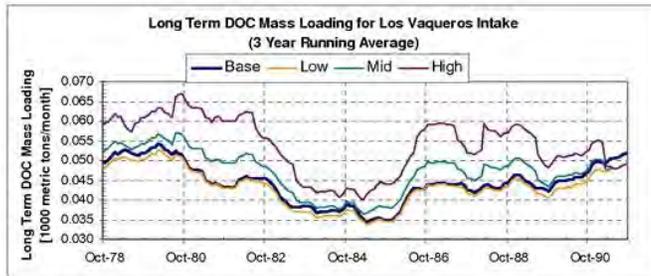


Figure 46: Long Term DOC Mass Loading for Old River at Los Vaqueros intake based on a 3-Year Running Average.

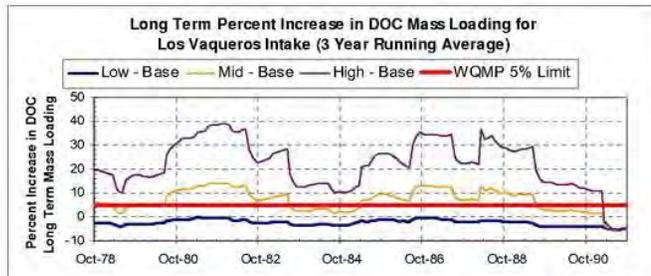


Figure 47: Percent Increase in Long Term DOC Mass Loading for Old River at Los Vaqueros intake based on a 3-Year Running Average.

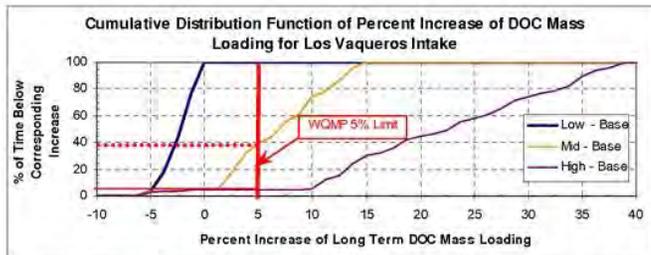


Figure 48: Cumulative Distribution Function of Percent Increase of Long Term DOC Mass Loading for Old River at Los Vaqueros intake.

No comments

- n/a -

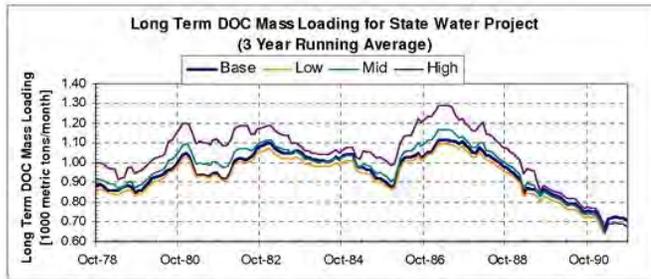


Figure 49: Long Term DOC Mass Loading for State Water Project based on a 3-Year Running Average.

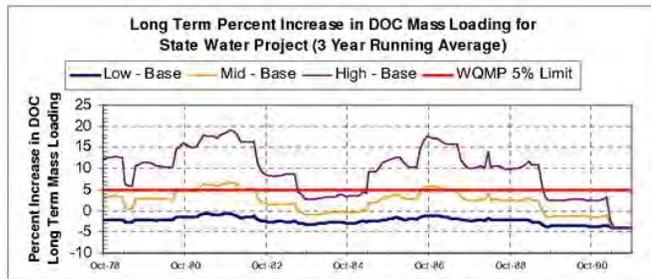


Figure 50: Percent Increase in Long Term DOC Mass Loading for State Water Project based on a 3-Year Running Average.

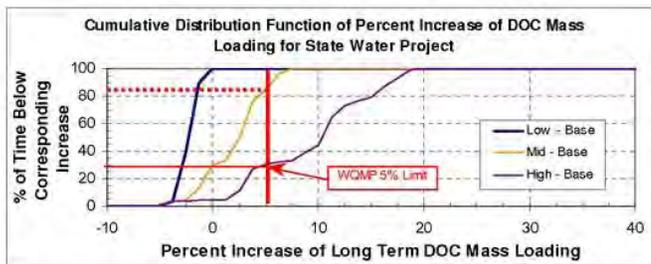


Figure 51: Cumulative Distribution Function of Percent Increase of Long Term DOC Mass Loading for State Water Project.

No comments

- n/a -

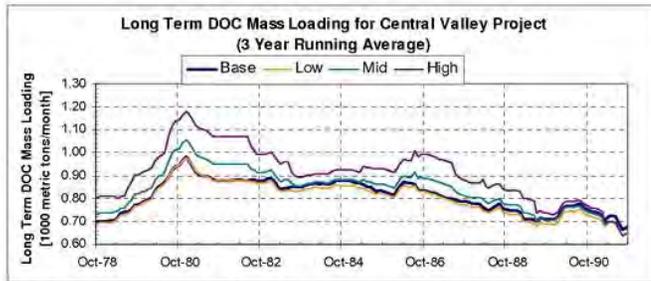


Figure 52: Long Term DOC Mass Loading for Central Valley Project based on a 3-Year Running Average.

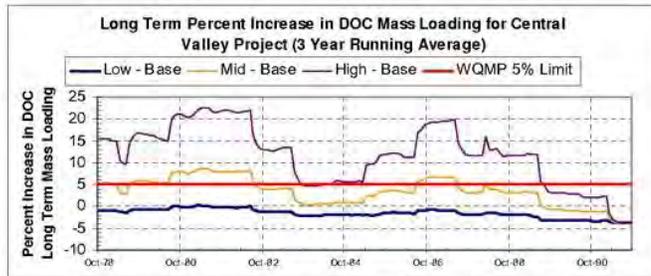


Figure 53: Percent Increase in Long Term DOC Mass Loading for Central Valley Project based on a 3-Year Running Average.

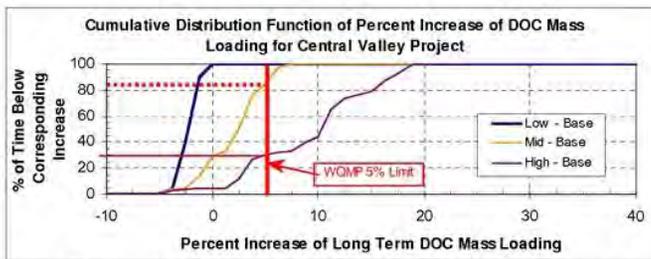


Figure 54: Cumulative Distribution Function of Percent Increase of Long Term DOC Mass Loading for Central Valley Project.

No comments

- n/a -

4.4. UVA

Three different UVA simulations were run to find UVA levels at the four urban water intakes due to the operation of the Delta Wetlands project that could later be used to compute TTHM (see Section 4.5). The level of the UVA releases for each of these bookend simulations is described above in Table 4 (see Section 2.2).

The UVA simulations were treated similar to the DOC simulations (see Section 4.2). The diversions into the reservoirs were treated as standard diversions. Water was removed from the Delta at the planned intake locations. Similarly, the releases from the islands were treated as rim or return flows at the planned discharge locations. Fixed UVA measurements were assigned to these releases. The UVA from these project island releases mixed with the already present in channel UVA.

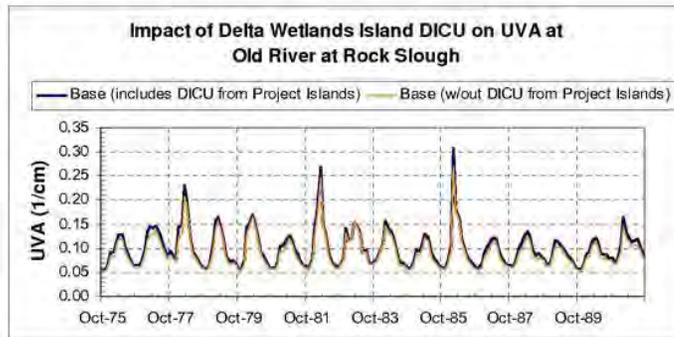


Figure 55: Effect of DICU around the Delta Wetlands Islands on Old River at Rock Slough.

As with the *DOC ag credit* (see Section 4.2) the benefit of changing the agricultural diversions and returns on the project islands at Rock Slough is shown above in Figure 55. This benefit, referred to as the *UVA ag credit*, was found to be relatively small at all four of the intake locations.

Figures 56, 58, 60, and 62 illustrate the sensitivity to UVA release measurements at each of the four urban intake locations: Old River at Rock Slough, Old River at the Los Vaqueros intake, the State Water Project intake at Banks Pumping Plant, and the Central Valley Project intake at Tracy. In the base case, the periods of high UVA for all of the locations coincided with the high runoff periods that start in the spring and sometimes continue through early summer. The summer releases from the project islands resulted in UVA measurement increases for all three bookend levels. At Rock Slough (see Figure 56), the process of releasing water during the summer at the mid and high bookend UVA values, effectively increased the number of times over the 16-year period that the UVA

No comments

- n/a -

measurement at Rock Slough reached above 0.20 cm^{-1} . However, these higher measurements did not exceed the winter monthly maximum from the base case. At the other three intake locations, the summer project water did exceed the base case monthly maximum. Furthermore Los Vaqueros, the State Water Project, and the Central Valley Project were much more sensitive to UVA releases from the project islands. Rock Slough is located to the north of the Bacon Island discharge location, and given that the predominant flows on the Old River tend to be heading south, Bacon Island releases have less of an impact on Rock Slough.

The maximum monthly averaged UVA at these four locations over the entire 16-year planning study is summarized in Table 11. As shown in Figure 10, the monthly agricultural UVA measurements from all of the Delta islands range from around 0.25 to 1.60 cm^{-1} . For all three bookend simulations, the largest maximum monthly UVA measurements were observed at Los Vaqueros. The maximum monthly change in UVA measurement is shown in Table 12. Again the largest changes were observed at Los Vaqueros, which is closer to the project islands than the SWP and CVP intakes.

Table 11: Maximum monthly averaged UVA (cm^{-1}) measurements.

Location	Base	Low (0.289 cm^{-1})	Mid (0.686 cm^{-1})	High (1.348 cm^{-1})
Old River at Rock Slough	0.309	0.263	0.263	0.267
Old River at Los Vaqueros intake	0.308	0.296	0.461	0.848
State Water Project	0.189	0.187	0.311	0.517
Central Valley Project	0.182	0.182	0.286	0.467

Table 12: Maximum monthly change in UVA (cm^{-1}).

Location	Low - Base	Mid - Base	High - Base
Old River at Rock Slough	0.022	0.079	0.174
Old River at Los Vaqueros intake	0.078	0.310	0.698
State Water Project	0.043	0.162	0.368
Central Valley Project	0.043	0.146	0.323

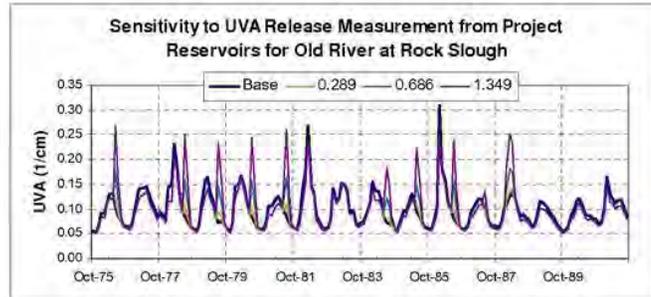


Figure 56: Time Series of UVA for Old River at Rock Slough.

No comments

- n/a -

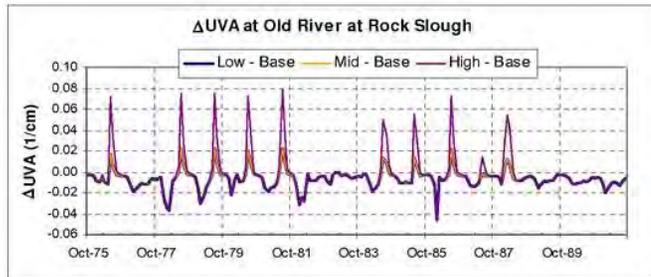


Figure 57: Time Series of Change in UVA (Alternative – Base) for Old River at Rock Slough.

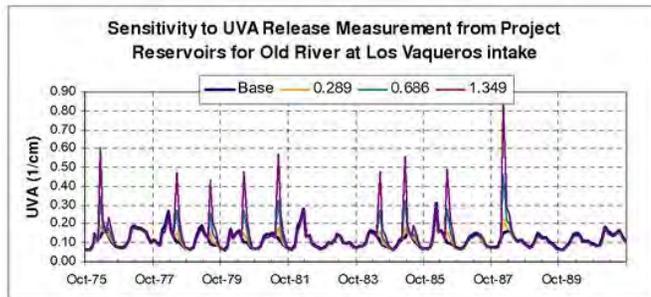


Figure 58: Time Series of UVA for Old River at Los Vaqueros intake.

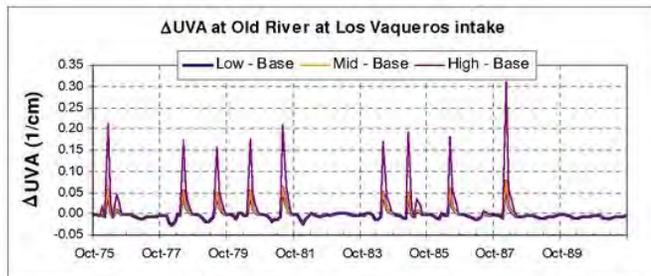


Figure 59: Time Series of Change in UVA (Alternative – Base) for Old River at Los Vaqueros intake.

No comments

- n/a -

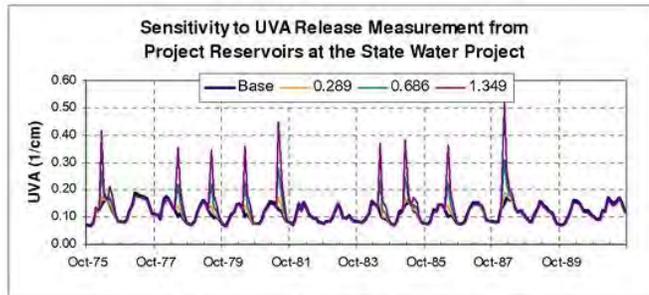


Figure 60: Time Series of UVA for the State Water Project.

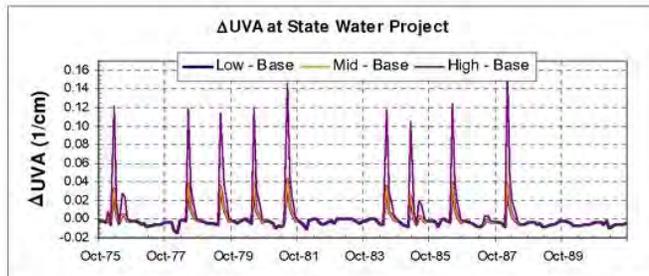


Figure 61: Time Series of Change in UVA (Alternative - Base) for the State Water Project.

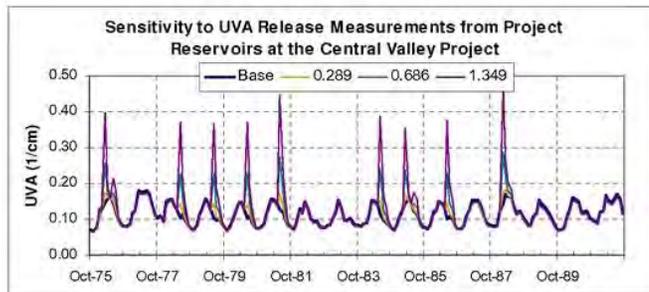


Figure 62: Time Series of UVA for the Central Valley Project.

No comments

- n/a -

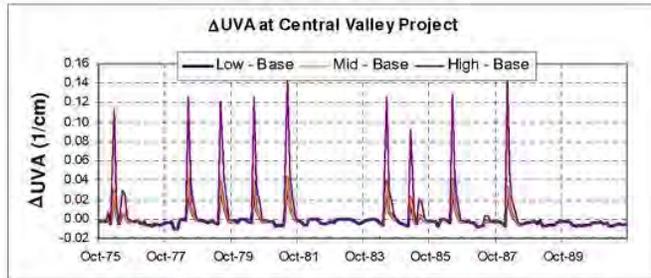


Figure 63: Time Series of Change in UVA (Alternative - Base) for the Central Valley Project.

4.5. TTHM

According to the WQMP Total Trihalomethane (TTHM) formation is limited 64 ug/l. For periods when the modeled base case exceeds this 64 ug/l standard, the WQMP permitted a 5% increase above the standard (3.2 ug/l) due to operation of the Delta Wetlands project.

Using the EC, DOC, and UVA results from each of the DSM2 bookend simulations, the TTHM for Old River at Rock Slough was calculated as:

$$TTHM = C_1 \times DOC^{0.228} \times UVA^{0.534} \times (Br + 1)^{2.01} \times T^{0.48} \quad [Eqn. 5]$$

where

TTHM = total trihalomethane concentration (ug/l),

$C_1 = 14.5$ when $DOC < 4$ mg/l,

$C_1 = 12.5$ when $DOC \geq 4$ mg/l,

DOC = raw water dissolved organic carbon (mg/l) from DSM2,

UVA = raw water ultraviolet absorbance at 254 nm (1/cm) from DSM2,

Br = raw water bromide concentration (mg/l) as converted from DSM2, and

T = raw water temperature.

The bromide concentration at Rock Slough was developed by Bob Suits (2001) from regressions of observed (1) Contra Costa Canal Pumping Plant #1 Chloride data to Contra Costa Canal Pumping Plant #1 Bromide data, and (2) Contra Costa Canal Pumping Plant #1 Chloride data to Rock Slough EC. The bromide relationship used in Equation 5 for Rock Slough is:

$$Br_{Rock\ Slough} = \frac{EC_{Rock\ Slough} - 118.7}{1040.3} \quad [Eqn. 6]$$

No comments

- n/a -

The bromide relationship for the remaining urban intake locations used in Equation 5 is:

$$Br = \frac{EC - 189.2}{1020.77} \quad [\text{Eqn. 7}]$$

The monthly average water temperatures used in Equation 5 are shown below in Figure 64. These temperature data came from Contra Costa water treatment plant averages, as provided by K.T. Shum of Contra Costa Water District (Forkel, 2000b).

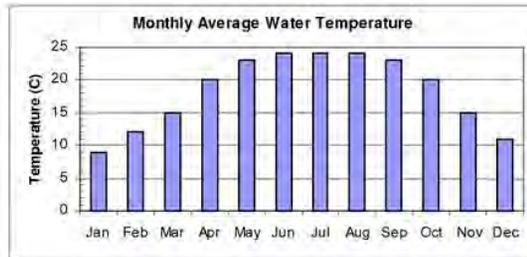


Figure 64: Monthly Average Water Temperature.

Using Equations 5, 6, and 7, the TTHM for all the urban intakes was calculated for the entire 16-year simulation period. The sensitivity to DOC release from the project islands is shown in Figures 65 – 72. The 64 ug/l WQMP standard is exceeded in the late fall and early winter months both in the base and alternative scenarios as is shown in Figures 65, 67, 69, and 71. This is consistent with the EC results discussed in Section 4.1, since bromide (which is directly related to EC) is a principal contributor to TTHM formation.

Table 13: Maximum monthly averaged TTHM (ug/l) concentrations.

Location	Base	Low	Mid	High
Old River at Rock Slough	131	124	124	124
Old River at Los Vaqueros	123	119	119	131
State Water Project	100	96	96	110
Central Valley Project	93	90	90	107

The maximum monthly TTHM concentrations for each of the simulations are displayed in Table 13. Since the EC and water temperature used to calculate the level of TTHM formation for each of the three bookend scenarios was the same, the differences in the TTHM concentrations is a function of the DOC and UVA values. For the Contra Costa intake at Old River at Rock Slough, the operation of the Delta Wetlands Project actually appears to decrease the maximum monthly TTHM concentrations. There was no significant difference between the three scenarios, but this is due to the fact that the DOC and UVA values at Rock Slough were very similar. For the other three intake locations, the high DOC and UVA release scenario results in increases in the maximum monthly

No comments

- n/a -

TTHM concentrations, while the other two scenarios result in slight decreases. It is important to remember that the majority of the releases from the project islands occur in the summer, and thus Table 13 does not provide a good estimate of the year round impact of the operation of the Delta Wetlands Project.

Time series plots (see Figures 66, 68, 70, and 72) illustrating the change between each alternative scenario and the base case provide a more useful tool to assess the impact of the project operation on TTHM formation. Although these plots show the change due to project operation over the entire simulation period, the intermittent 3.2 ug/l maximum increase in TTHM standard applies only at the times when the regular 64 ug/l standard was exceeded by the base case as shown in Figures 65, 67, 69, and 71. Even though releases from the project islands resulted in significant increases in TTHM at all four urban intake locations, typically these increases did not exceed the 64 ug/l standard, and thus according to the WQMP should not be constrained by the 3.2 ug/l maximum increase standard.

The largest increase in TTHM occurred in the summer of 1988 at the Los Vaqueros Reservoir intake location for both the mid and high levels of DOC release (see Figure 68). However, both of these increases exceeded 64 ug/l at a time when the base case was below the standard (see Figure 67). The maximum monthly increase in TTHM at the urban intake locations for only those times when the base case scenario exceeded the 64 ug/l standard is listed below in Table 14. Based on Table 14, there appears to be little difference between the scenarios. The only location where TTHM increased due to project operation was at Old River at Rock Slough.

Table 14: Maximum monthly increase in TTHM (ug/l) when base scenario was greater than the WQMP 64 ug/l standard.

Location	Low - Base	Mid - Base	High - Base
Old River at Rock Slough	4.39	4.40	4.40
Old River at Los Vaqueros intake	-1.42	-1.42	-1.29
State Water Project	-0.63	-0.63	-0.63
Central Valley Project	-0.58	-0.58	-0.58

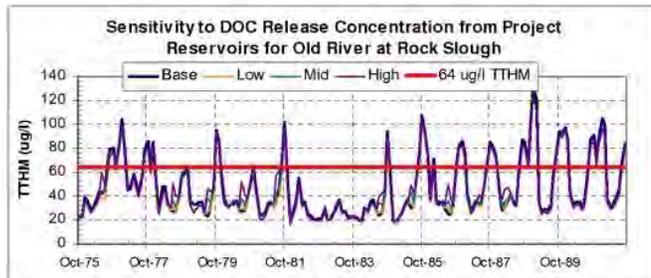


Figure 65: Time Series of TTHM Formation for Old River at Rock Slough.

No comments

- n/a -

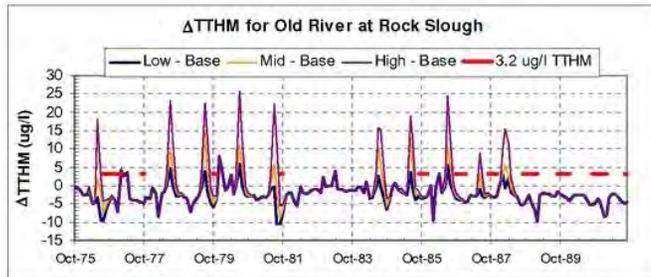


Figure 66: Time Series of Change in TTHM (Alternative – Base) for Old River at Rock Slough.

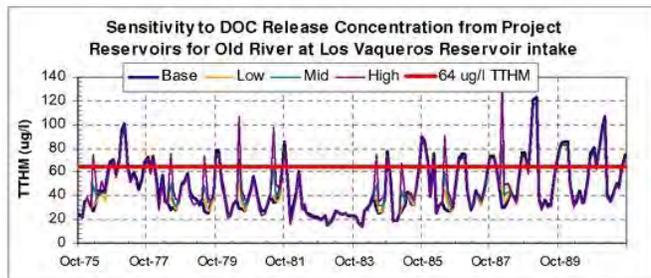


Figure 67: Time Series of TTHM Formation for Old River at Los Vaqueros intake.

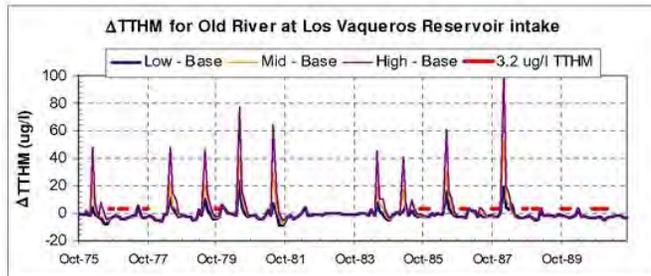


Figure 68: Time Series of Change in TTHM (Alternative – Base) for Old River at Los Vaqueros intake.

No comments

- n/a -

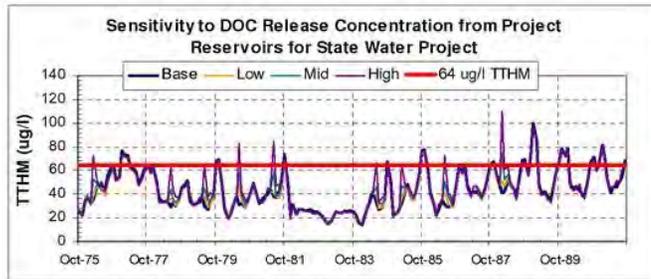


Figure 69: Time Series of TTHM Formation for State Water Project.

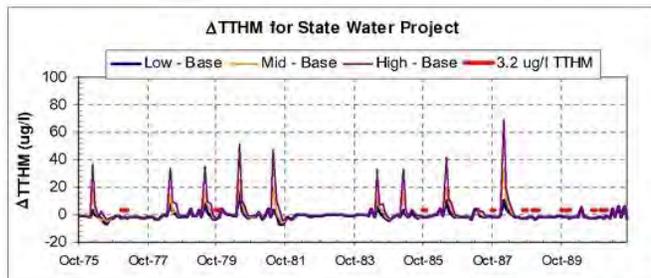


Figure 70: Time Series of Change in TTHM (Alternative – Base) for State Water Project.

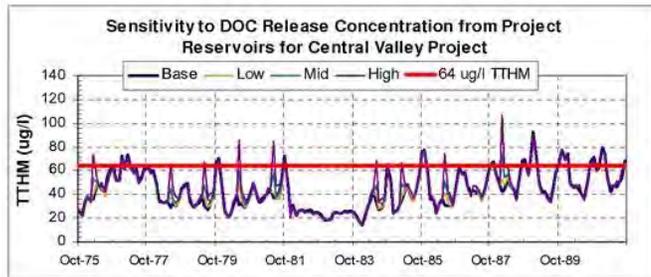


Figure 71: Time Series of TTHM Formation for State Water Project.

No comments

- n/a -

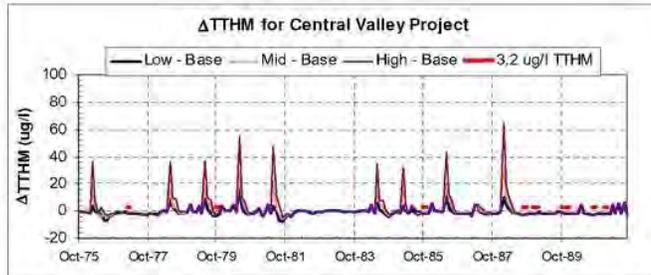


Figure 72: Time Series of Change in TTHM (Alternative – Base) for Central Valley Project.

4.6. Bromate (BRM)

According to the WQMP Bromate formation is limited 8 ug/l. For periods when the modeled base case exceeds this 8 ug/l standard, the WQMP permitted a 5% increase above the standard (0.4 ug/l) due to operation of the Delta Wetlands project.

Using EC and DOC for each of the DSM2 bookend simulations, bromate for Old River at Rock Slough was calculated as:

$$BRM = C_2 \times DOC^{0.31} \times Br^{0.74} \quad [\text{Eqn. 8}]$$

where

BRM = bromate (ug/l),

$C_2 = 9.6$ when $DOC < 4$ mg/l,

$C_2 = 9.2$ when $DOC \geq 4$ mg/l,

DOC = raw water dissolved organic carbon (mg/l) from DSM2, and

Br = raw water bromide from Equations 5 and 6.

Using Equations 6, 7, and 8, the bromate for all the urban intakes was calculated for the entire 16-year simulation period. The sensitivity to DOC release from the project islands is shown in Figures 73 – 80. Though bromate formation is a function of both DOC and bromide concentration, the bromide concentrations used to calculate bromate for each of the three DOC concentration levels were the same. The only differences between the three alternative scenarios occurred when water was released from the project islands, which typically occurred in the summer months (see Figure 2). As shown in Figures 73, 75, 77, and 79, the modeled base case bromate concentrations at all four intakes frequently exceeded the 8 ug/l WQMP standard during these release periods.

No comments

- n/a -

The maximum monthly bromate concentrations for each of the simulations are displayed in Table 15. For all four intake locations the operation of the project did not increase the maximum monthly bromate concentration. However, it is important to remember that there are still increases associated with the summer releases discussed above, thus the usefulness of this absolute time series plots and monthly maximum values are limited.

Table 15: Maximum monthly averaged bromate (ug/l) concentrations.

<i>Location</i>	<i>Base</i>	<i>Low</i>	<i>Mid</i>	<i>High</i>
Old River at Rock Slough	22.14	21.83	21.83	21.83
Old River at Los Vaqueros	20.54	20.26	20.26	20.26
State Water Project	18.26	18.07	18.07	18.07
Central Valley Project	17.62	17.46	17.46	17.46

Time series plots (see Figures 74, 76, 78, and 80) illustrating the change between each alternative scenario and the base case provide a more useful tool to assess the impact of the project operation on bromate formation. Although these plots show the change due to project operation over the entire simulation period, the intermittent 0.4 ug/l maximum increase in bromate standard applies only at the times when the regular 8 ug/l WQMP standard was exceeded by the base case as discussed above. The maximum monthly increase in bromate when this second WQMP standard controls is listed in Table 16.

The bromate concentration at all four intake locations exceeded the WQMP 0.4 ug/l maximum increase standard several times due to the project operation. As listed in Table 16, the largest increase occurred at the Old River at Rock Slough intake location in December 1979. It is important to note that during this month water was diverted to the project islands (see Figure 1) which resulted in salinity in the a difference in salinity of over 200 umhos/cm between the alternative scenarios and the base case (see Figure 17). Increases in bromate concentration at Rock Slough also occurred in the winters of 1985, 1986, and 1988, all of which correspond with both periods of high salinity intrusion into the Central Delta and diversions into one or both of the project islands.

Table 16: Maximum monthly increase in bromate (ug/l) when base scenario was greater than the WQMP 8 ug/l standard.

<i>Location</i>	<i>Low - Base</i>	<i>Mid - Base</i>	<i>High - Base</i>
Old River at Rock Slough	1.69	1.69	1.69
Old River at Los Vaqueros intake	1.36	1.36	1.37
State Water Project	1.02	1.02	1.03
Central Valley Project	0.97	0.97	0.97

No comments

- n/a -

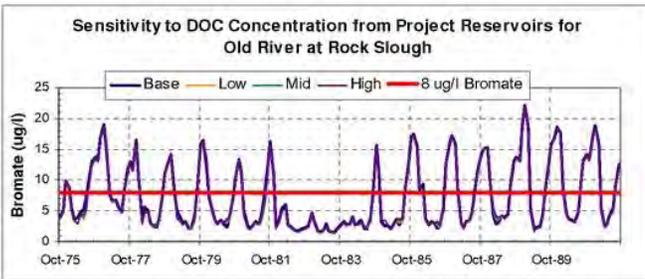


Figure 73: Time Series of Bromate Formation for Old River at Rock Slough.

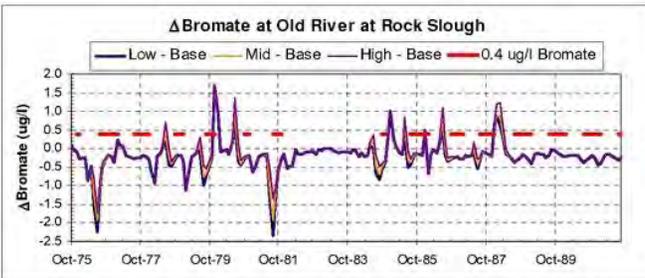


Figure 74: Time Series of Change in Bromate (Alternative – Base) for Old River at Rock Slough.

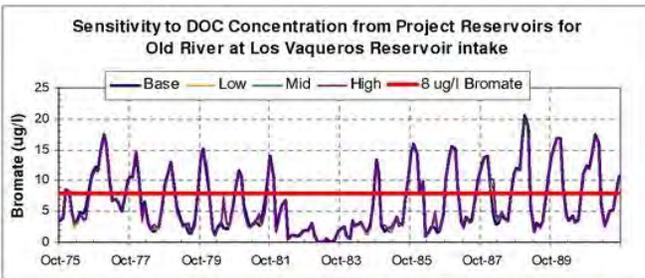


Figure 75: Time Series of Bromate Formation for Old River at Los Vaqueros intake.

No comments

- n/a -



Figure 76: Time Series of Change in Bromate (Alternative – Base) for Old River at Los Vaqueros intake.

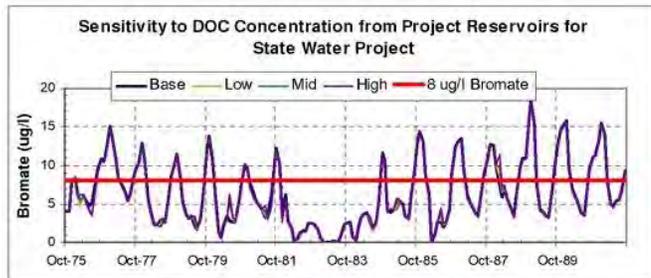


Figure 77: Time Series of Bromate Formation for State Water Project.

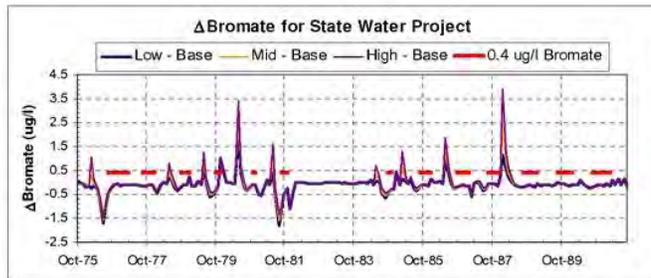


Figure 78: Time Series of Change in Bromate (Alternative – Base) for State Water Project.

No comments

- n/a -

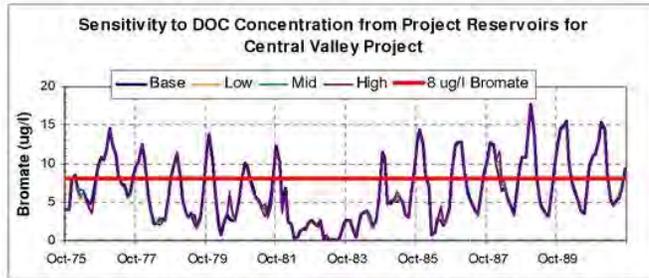


Figure 79: Time Series of Bromate Formation for Central Valley Project.

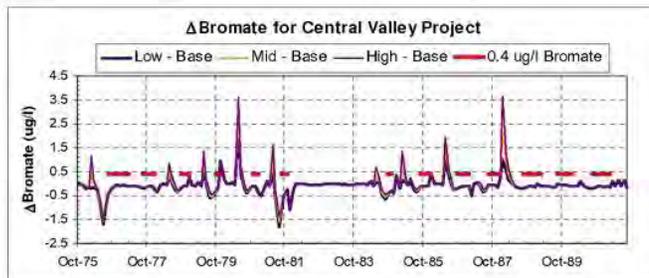


Figure 80: Time Series of Change in Bromate (Alternative – Base) for Central Valley Project.

5. Conclusions

- The DWRSIM 771 base case hydrology exceeded the Rock Slough Chloride standard nearly every winter during the 16-year simulation period with the exception of 1982 and 1983. Therefore the modeled EC at the four urban intakes is suspect for the Delta Wetlands alternative. It is recommended that a more accurate base case hydrology be used in future DSM2 studies.
- There was little difference in modeled EC between the base and Delta Wetlands alternative. The EC concentration of the water released from the project islands is a function of the quality of the water diverted on to the islands. Since THM and BRM formation are highly dependent on bromide concentration (which was calculated using EC), care must be taken when diverting water into the project

No comments

- n/a -

islands in order to manage the EC, TTHM, and BRM impacts of the project islands.

- ❑ DSM2 simulated the project islands releases using three fixed concentrations at the discharge locations. QUAL did not consider the residence time of the water stored in the project islands. For future studies QUAL will be modified in order to better simulate the impact of storing water in the project islands for extended periods.
- ❑ The benefit of reducing the return of water from Bacon Island and Webb Tract on DOC, referred to as the *DOC ag credit*, ranged between 0 – 0.3 mg/l for Old River at Rock Slough. This *DOC ag credit* was less significant at the other three intake locations.
- ❑ The DSM2 DOC base case frequently exceeded the 4 mg/l DOC standard at all four intake locations during the late winter runoff periods.
- ❑ The mid- and high- DOC concentration releases from the project islands (which typically occurred in the summer) exceeded the 4 mg/l DOC standard. The increased DOC observed in DSM2 at the intakes ranged from around 3 – 4 mg/l at Rock Slough to an 8 mg/l increase at the Los Vaqueros intake on the Old River.
- ❑ Though the low DOC concentration release from the project islands did not exceed the 1 mg/l increase standard stipulated by the Delta Wetlands WQMP, this 6 mg/l DOC release approached the standard at the Los Vaqueros intake on the Old River.
- ❑ The long-term DOC trend (based on 3 year running averages) consistently showed the low-DOC concentration release scenarios to decrease the DOC mass loading at all four urban intakes. The mid- and high-DOC concentration release scenarios all exceeded the WQMP 5% increase in DOC mass loading limit.
- ❑ Los Vaqueros is the most sensitive intake location for both short- and long-term DOC. Future studies will model the discharge location for Bacon Island further to the east along the Middle River, which may reduce the DOC loading at Los Vaqueros due to project releases.
- ❑ UVA showed trends similar to those discussed above for DOC. The *UVA ag credit* was relatively small at all of the intake locations (less than 0.02 l/cm). Los Vaqueros is the most sensitive intake location. However, UVA is a factor in TTHM formation, thus it should still be modeled in future DSM2 simulations.
- ❑ The DWRSIM 771 hydrology, which was used as input for HYDRO, did not separate the diversions / exports between Contra Costa's Old River at Rock Slough intake and its' Los Vaqueros intake. The intake also lies between Bacon Island and the SWP and CVP intakes on the Old River. Even without modeling

No comments

- n/a -

any exports from this location, the Los Vaqueros intake showed the most sensitivity to both DOC and UVA. For future studies it is recommended that operating rules be devised so that CALSIM can represent the diversions / exports at the Los Vaqueros intake.

- Since TTHM and BRM formation is highly dependent upon bromide, and even in the base case the Rock Slough chloride standard was exceeded, the TTHM and BRM calculated concentrations are suspect. When DSM2 is run again with improved operating conditions, TTHM and BRM relationships for the other intake locations will be developed and the formation of TTHM and BRM at all the intake locations will be revisited.

6. References

- California Department of Water Resources. *Status Report on Technical Studies for CALFED Water Management Planning*. Technical Report dated July 1999. Sacramento, CA.
- Delta Wetlands Water Quality Management Plan. (2000). *Exhibit B from the Protest Dismissal Agreement Between Contra Costa Water District and Delta Wetlands Properties*.
- Denton, Richard. (2001). *Correspondence about Contra Costa Water District's CCWDOP planned diversions*.
- Forkel, David. (2001a). *Correspondence about the proposed Delta Wetlands flow operation schedule, including diversions into and releases from the proposed reservoirs*.
- Forkel, David. (2001b). *Correspondence about Delta in channel water temperatures for use in calculating TTHM formation*.
- Jones and Stokes (2001). *Delta Wetlands Final Environmental Impact Report*. Sacramento, CA.
- Jung, Marvin. (2000). *Revision of Representative Delta Island Return Flow Quality for DSM2 and DICU Model Runs, Municipal Water Quality Investigation Program*. California Department of Water Resources – Division of Planning and Local Assistance, Sacramento, CA.
- Suits, Bob. (2001). *Relationships Between EC, Chloride, and Bromide at Delta Export Locations*. Memo. California Department of Water Resources.

It appears the incorrect data regarding Ryer Island that was published in the DRMS Phase 1 'Final' Report ended up at FEMA, who then changed the classification of Ryer Island (as shown in 2007) to the classification shown in the draft Delta Plan. DSC and DWR are fully aware of the false data used in the DRMS Report, so why do they continue to use

No comments

- n/a -



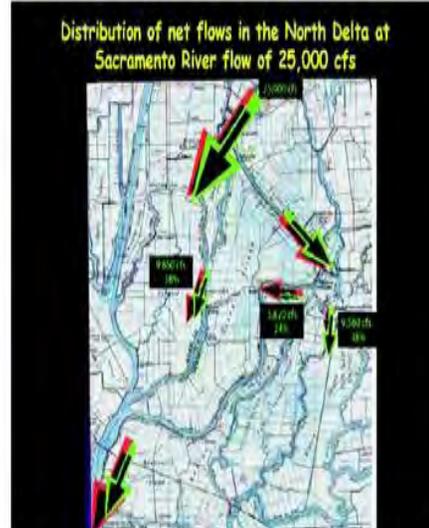
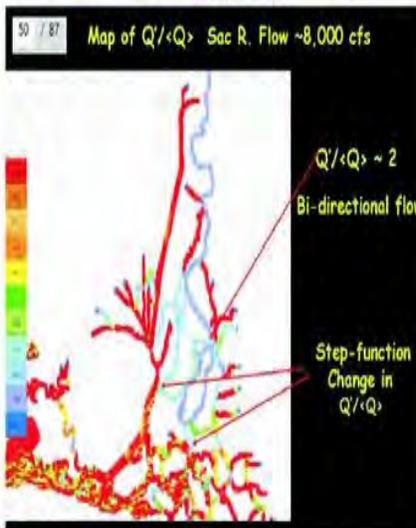
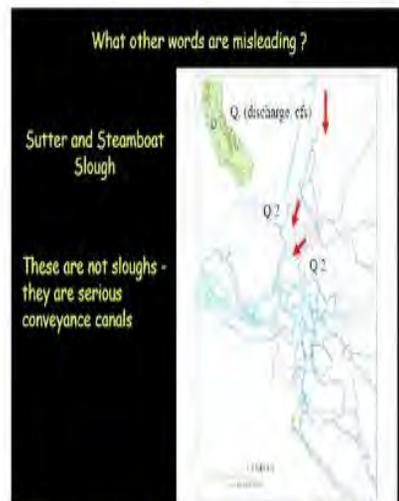
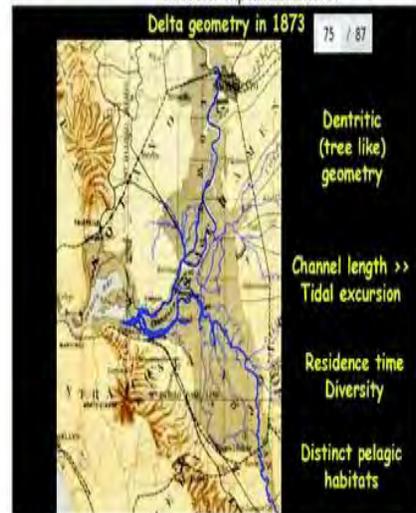
ATTACHMENT D

2008Presentation_Land_Water

As the slides from the 2008 DWR-F&G presentation show, Steamboat Slough is an important and natural waterway of the Delta. So why do many recent maps errase its existence? Perhaps to capture the fresh water flow for export elsewhere?

No comments

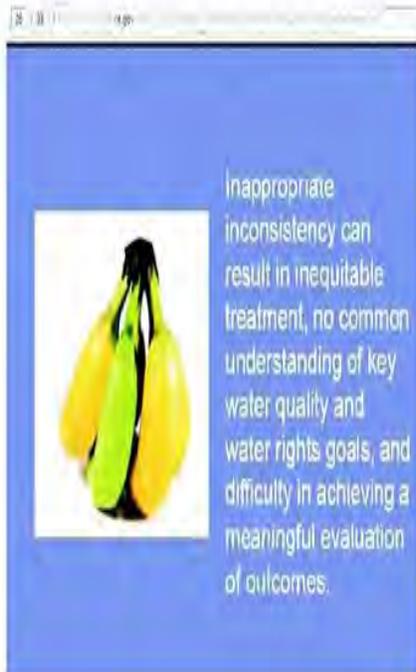
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ATTACHMENT E, COMMENTS - THE DELTA PLAN Comments submitted by N. Suard, Esq, Snug Harbor Resorts, LLC on Ryer Island & Steamboat Slough

When one reviews past publications of DWR and other state agencies, and compares the data to current data used in or for the Delta Plan/BDCP drafts, it becomes apparent there is substantial inconsistency of the "facts" leading to the decisions made in the Delta Plan. Please see the slide below, which recognizes the effect of inappropriate inconsistency.

distributing the revised history. This series of maps & graphics show quickly the difference between true Delta history and what the new Delta Plan/DRW wants you to believe. DWR may revise the future of the Delta **but why revise the past**



Note the screen print from section 3 of the draft Delta Plan. The major sources of information are from 2009 reports, which then refer back to previous reports and when compared, the inconsistencies are shown. For the series of maps and graphics in this attachments, I will use reports and data from earlier time periods, particularly from when Governor Brown was a governor for the first time, during the period leading up to the 1982 bond vote,

One should question why the Delta Plan proposes to utilize 2009 reports rather than the volumes of more accurate data previously published.

15 **3.3.1 Major Sources of Information** 03_Water_Resources.pdf 3 / 113

16 Most of the information in this section is summarized or taken directly from existing documents. The

17 description of the environmental setting for water resources was primarily based on the following sources

18 of information:

- 19 • Department of Water Resources (DWR):
 - 20 • Bulletin 160 California Water Plan Update 2009
 - 21 • Bulletin 118 California's Groundwater 2009 Update
 - 22 • California Data Exchange Center
- 23 • U.S. Geological Survey (USGS):
 - 24 • Professional Paper 1766 (2009)
 - 25 • Studies from the Groundwater Ambient Monitoring and Assessment Program
- 26 • CALFED Bay-Delta Program (CALFED) Environmental Impact Report (EIR) (2000)
- 27 • Central Valley Project Improvement Act (CVPIA) Programmatic Environmental Impact Study
- 28 (1997-1999)
- 29 • Urban Water Management Plans for various regions
- 30 • Integrated Regional Water Management Plans (IRWMPs) for various regions
- 31 • Groundwater Management Plans for various basins

No comments

- n/a -

DELTA HISTORY VS THE DELTA PLAN & DWR MEDIA: 1 ppt vs "X2" or 2 ppt

What Delta History shows...

Monitoring stations measured for 1 ppt or 1000 parts chloride per 1 million parts water, which shows the standard for freshwater in the Delta was BELOW 1ppt, therefore the 1 ppt standard has been maintained as shown in the second map, to assure fresh water in the Delta region.



Based on historical records, the salinity encroachment of 1 ppt in the early 1930's per the map on the left was due to excessive diversion of Sacramento River north of the Delta during a record drought. Excessive withdrawal of Sacramento River north of the Delta was prohibited thereafter.

What the BDCP, incorporated by reference into the Delta Plan and other DWR consultants want you to believe...

C.2.1.2 Salinity	
8	The concentration of the dissolved salt in a body of water is salinity. Usually measured in parts per thousand (ppt), the salinity gradient transitioning from the ocean to a freshwater stream can vary
9	between 0.5 ppt (fresh water) to 50 ppt (salt water). Historically in the Delta, the point in the
10	salinity gradient <u>that has been tracked and managed in 2 ppt and is referred to as X2</u> . Salinity also
11	can affect the allowable concentration of DO. Fresh water can support DO concentrations as high as
12	9 mg/L, and salt water can accommodate only up to 8 mg/L.
13	



No comments

- n/a -

DELTA HISTORY VS THE DELTA PLAN & DWR MEDIA: Water Quality Monitoring Locations: If you don't monitor for salinity, you can pretend its not there?

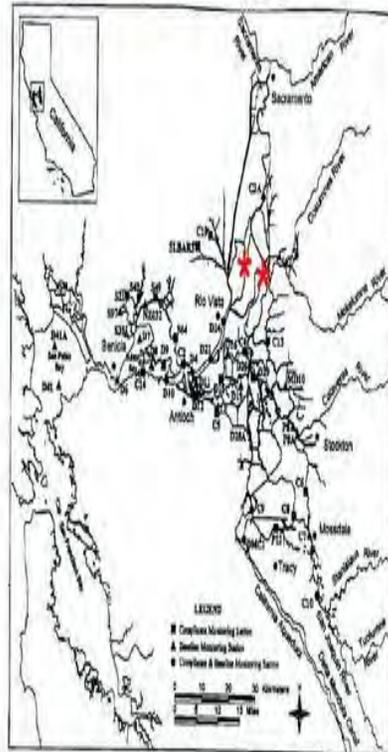
What Delta History shows...



Notice the change of location of monitoring station locations, and the elimination of monitors on Steamboat Slough and one on the Sacramento River (* added to map) ...two areas where salinity is projected to increase

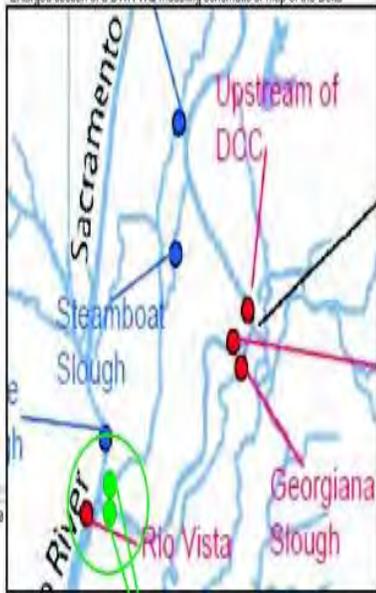
2004-wq_revisions_proposed.pdf

Proposed revised Figure 4 (D-1641, p.194)
 Figure 4. State Water Resource Control Board Bay-Delta Estuary Monitoring Stations



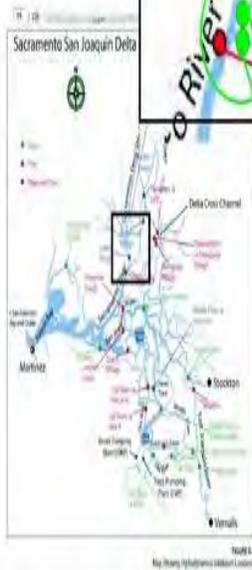
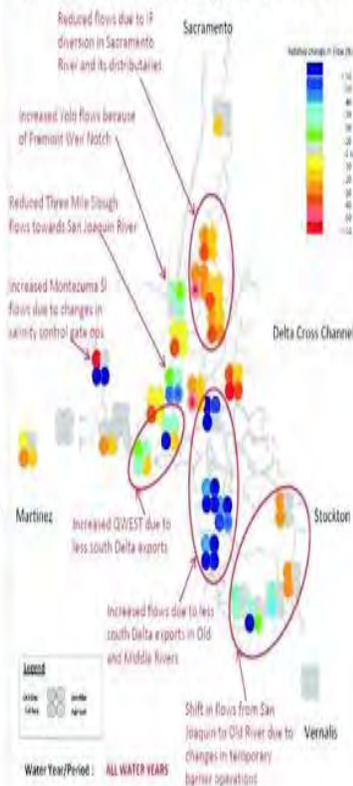
No comments
 - n/a -

Enlarged section of a DWR WQ modeling schematic or map of the Delta



The map below was provided by BDCP staff, and it demonstrates the expected change of flow within the North Delta, which should be monitored carefully to assure no intrusion of saline water per NDWA contracts and riparian water rights.

Seasonal Changes in Flow



The locations for proposed new water quality and water flow monitoring stations on Steamboat Slough and the "Old River" portion of the Sacramento River west of Ida's Island (Viera's)

No comments

- n/a -

DELTA HISTORY VS THE DELTA PLAN & DWR MEDIA: **Changed hydraulic regions**

Computer modeling using programs like CALSIM, CALSIM II and CALVIN allowed for changes, on paper, to traditional hydraulic areas, leading to the planning and physical changes of flows to separate out the hydraulic areas, basically increasing the flow on the San Joaquin River by diverting flow that would naturally traveled on the Sacramento River.

And note that the Delta is not even recognized as a unique region in the current Draft Delta Plan. So should the plan be renamed the revised California Water plan instead?



Modeling the watershed changed with CALSIM II



No comments

- n/a -

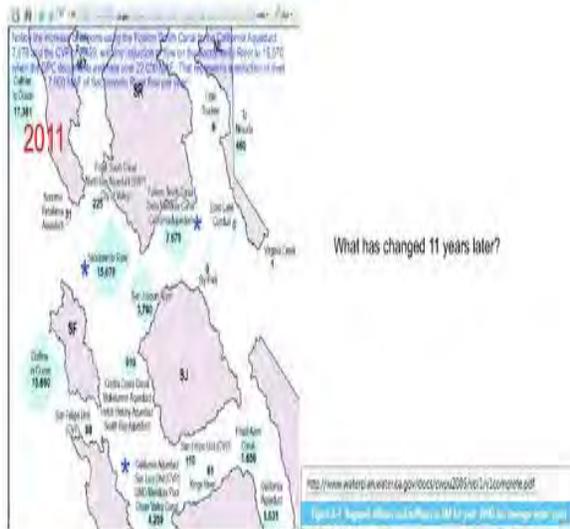
Changes to Sacramento River flows and hydraulic regions based on computer modeling, and the effects on the North Delta;

According to the "system reoperation" summary flow map, flow on the Sacramento River through the Delta is proposed to average 15,070 Thousand Acre Feet (TAF) including the Yolo Bypass flows of 4,000 TAF or more per year. That means, in effect, where the North Delta historically received 18,000 to 21,000 TAF per year, the North Delta will instead receive **11,000 TAF at most**. That amounts to substantially higher percent of flow reduction on the Sacramento River in the North Delta region than what was previously reported or modeled.

At the same time, Delta water exports are proposed to increase from **6,100 TAF to 13,081 TAF** per year. (see map to the right) which equals more than double the average exported water!

In dry water years, the exports are planned to be reduced, but who will be enforcing the export restrictions?

http://delta.revision.com/issuys/waterflow/video/ortho_delta_flow_flow_effect.ppt
http://www.water.ca.gov/system_reop/docs/system_reop_phase1_plan_of_study_9-2011.pdf



Diversions for Beneficial Use

Water is diverted both within the Delta and upstream in the Estuary's watersheds to irrigate farmland and supply cities. In Delta exports have largely remained within the range of 4 to 6 MAF per year since 1974, but the percentage of Delta inflow diverted can vary widely from year to year. In water-year 2004, 6.1 MAF was diverted, and in 2005, 6.4 MAF. The average percentages of total Delta inflow diverted were 36.9 in 2004 and 36.7 in 2005. (Interagency Ecological Program, 2005)

rsandhu@water.ca.gov



Percent of Flow Reduction Sacramento River at Freeport

- Range of flow reductions = 15, 25, 33, and 50%
- Two time periods = 1990-1999 and 2000-2009
- No cap on exports and 15,000 cfs cap on exports
- Compare to historical exports from the Delta

No comments

- n/a -

DELTA HISTORY VS THE DELTA PLAN & DWR MEDIA: Impacts to aquifers

From the 1979 Water Atlas.



In 1979 the state recognized that overdraft of groundwater impacts the area aquifers, and can cause salt water to intrude into the aquifer. Basins with groundwater overdraft at that time included the Sacramento Valley in the Delta region and much of the lower Central Valley. The other map specifies areas of distinct saltwater intrusion, including the west Delta area, Monterey, Morrow bay and more locations down south.

The Delta Plan, if enacted and coupled with the BDCP and other related planning documents could result in the allowed diversion of a majority of the Sacramento River flow, before it ever reaches the Delta region. That Sacramento River water has historically replenished most of the Northern California aquifers, not just the Delta and Bay area.

If the Delta Plan consultants and scientists have adequately modeled the impacts to Delta, Bay and Northern California aquifers, I have not found the data yet. However, below is an interesting graphic which demonstrates another computer modeling program that is supposed to address this issue:

No comments

- n/a -

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Water Operations

Central Valley Project

Reduction of fresh water flow into the Delta and San Francisco Bay coupled with an increase in dumping of toxic runoff from lower western Central Valley irrigated lands will most likely have a tremendous negative impact on aquatic species and aquatic vegetation in the long term. USGS plans to track the effects...

No comments

- n/a -

For standards or additional project information, contact:

Scott Cook at 916.441.2511 800.763.7677

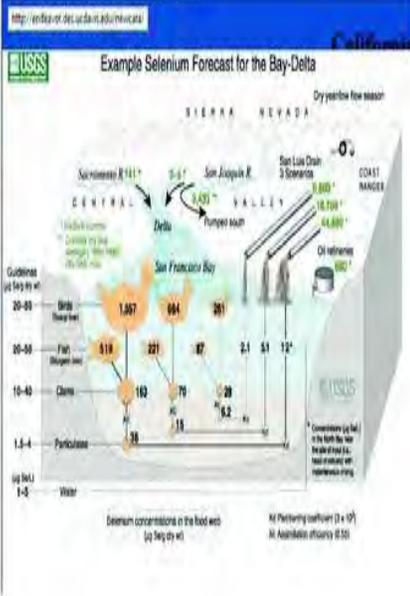
Back

February 4, 2010



General Information

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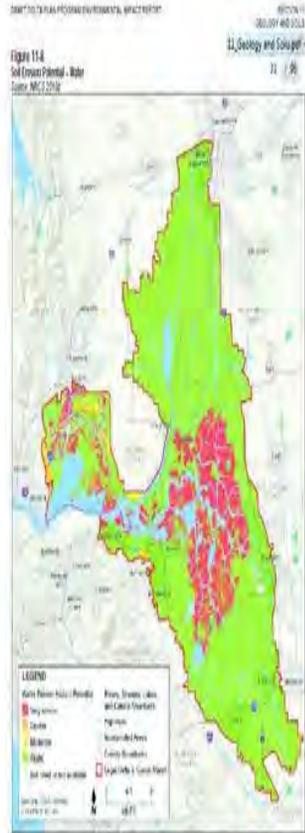


DELTA HISTORY VS THE DELTA PLAN & DWR MEDIA: CAUSES OF SUBSIDENCE & Where's the DCC?

What the Delta Plan or other DWR media wants you to believe is that there is no water conveyance facilities in the Delta, yet the DCC and Mokelumne Rivers are used for conveyance at least as of 2012.

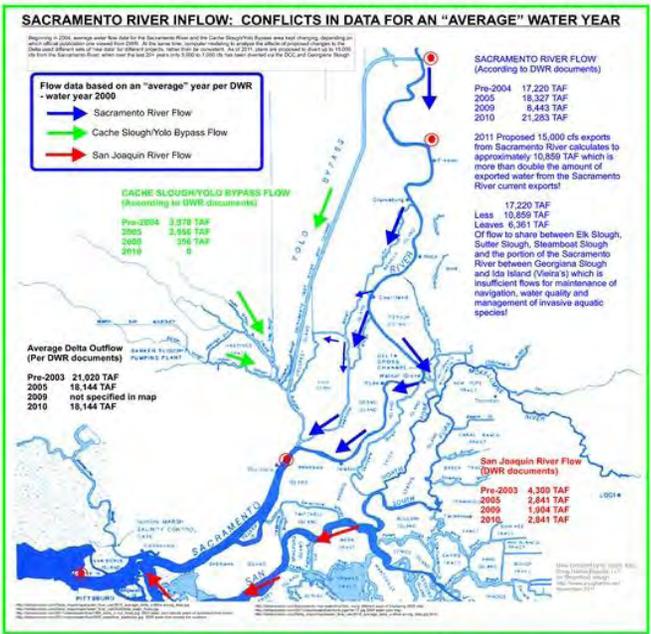


Withdrawal of natural gas has caused subsidence in other areas of the country so why isn't this studied or even mentioned in the BDCP or Delta Plan? Notice the areas of subsidence are around the same area as the underground storage of natural gas on McDonald Island

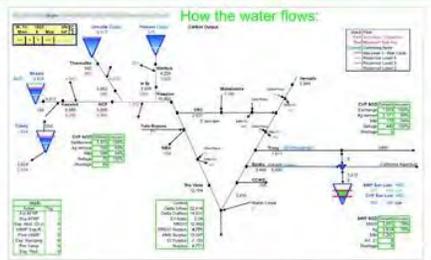


No comments

- n/a -

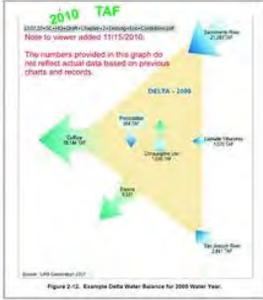
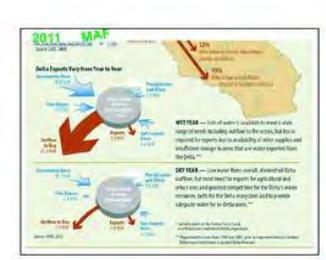
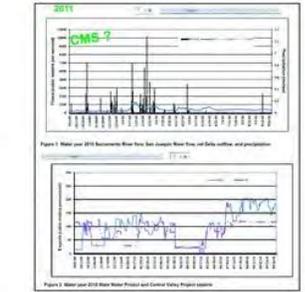


No comments
- n/a -



2004 TAF and CFS

Category	Value
Sacramento River Flow	17,220 TAF
Cache Slough/Yolo Bypass Flow	3,078 TAF
San Joaquin River Flow	4,300 TAF
Delta Outflow	21,020 TAF



June 1, 2011

Submitted to NRV: Committee on Sustainable Water and Environmental Management in the California Bay-Delta

No comments

- n/a -

By Nicole S. Suard, Esq., Managing Member, Snug Harbor Resorts, LLC, a Delta land and business owner.

Questions and challenges regarding the overall "science" applied to Delta lands (islands and waterways).

This comment paper is submitted to request answers to four technical sections of the science currently applied to the decision making process for the Sacramento-San Joaquin Delta region. "Best available science" when proved wrong is bad science. Bad science, applied, results in bad outcomes. It is financially, legally and socially irresponsible for any scientist, politician or government agency to make important decisions regarding the future of Delta lands, waterways, people and water rights based upon bad science. Basing decisions on bad science also exposes the taxpayers of California to increased taxation to cover the costs of litigation and punitive awards to the harmed landowners when the state (or federal government) intentionally moves forward with changes to Delta islands and water flow based on *known* bad science. This paper specifically asks four series of questions and requests that the named agency representative investigate and resolve the data conflict or issue presented. The research and document giving cause to ask the questions are provided as follows:

- A. **Salad-bar science:** The historical island data used for the DRMS Phase 1 Final Report (2008) and its two revisions (3/2009 and 12/2009), have been shown to be false and inaccurate, yet the data continues to be used or quoted in most BDCP documents.
Question series for Gerald Meral, Deputy Secretary, California Resources Agency: Why is DWR continuing to use false data regarding individual island flood and seismic history? Why did DWR combine flood, seismic and soil data for two different Ryer Islands into the DRMS report? Why did the DCC gate log show the Jones Tract levee failure on June 1, 2004 while DWR reported the levee failure on June 3, 2004? (See documentation-Section A)
- B. **It depends on who's counting:** When computing water flow and velocity for reports comparing past and current water flow in the Delta, I found formula conflicts between conversion tables used by DWR and USGS.
Question for Karen Schwinn, Associate Director, Water Division, EPA Region 9 or David H. Blau, Senior Water Resource Planner: If the conversion table from DWR was used for the initial raw data and formula input for CALSIM modeling, wouldn't this explain one reason why CALSIM II modeling doesn't match actual water flow calculations for some studies? Which conversion table is correct: DWR or USGS? (See documentation and links-Section B)
- C. **What's Where When or 101 Wrong Maps of the Delta:** Several different important Delta-related studies and agencies confuse the islands and waterways of the Delta.

Question for NOAA speaker or BDCP speaker: If the scientists or government agencies can't even come up with accurate maps of the Delta, why should their study results be accurate or trusted? (See documentation and links-Section C)

No comments

- n/a -

D. **CalFed did not "fail" in 2003** regarding the conveyance portion of the plan, as construction has continued to move forward as "regional projects". It appears most of the elements of the CalFed 2000 ROD "preferred alternative" are complete or almost complete.

Question for BDCP or DWR speaker: Is it expected the central conveyance or "preferred alternative" which includes reoperation of the DCC, expanded capacity of Freeport pumps, revision to McCormack/Williamson Tract, dredging around the area of DCC and Dead Horse island to facilitate greater water flow down the Mokelumne Rivers, etc will be operational by the end of 2012 or earlier? Will it include use of Staten Island for In-Delta water "detention" or other Delta islands and if so, which islands are planned to be IDS? (See links-Section D)

Please note that the following pages will provide links to documents found online at the time of researching this paper. However, sometimes the government websites or nonprofit websites remove documents quoted, so the presumed public record document, or a portion thereof, is preserved and available at the following web page, to be used for educational and comparative purposes only:

<http://www.deltarevision.com/sciencechallenge.html> (pending upload to website)

A Salad-bar science: The historical island data used for the DRMS Phase 1 Final Report (2008) and its two revisions (3/2009 and 12/2009), have been shown to be false and inaccurate, yet the data continues to be used or quoted in most BDCP documents.

Question for Gerald Meral, Deputy Secretary, California Resources Agency: Why is DWR continuing to use false data regarding individual island flood and seismic history? Why did DWR combine flood, seismic and soil data for two different Ryer Islands into the DRMS report¹? Why did the DCC gate log show the Jones Tract levee failure on June 1, 2004² while DWR reported the levee failure on June 3, 2004³, if the island was the target of IDS field studies⁴?

Summary, documents and links: Beginning 2002 there was a transition to use of Salad-bar Science. A Salad-bar Scientist is someone (or a group of persons) who pick out bits and pieces of other reports and data on a particular topic, to combine the incomplete data as proof of a predetermined desired outcome. The Delta Risk Management Strategy (DRMS) 2008 Final Phase 1 published 2008⁵, and the subsequent revisions March 2009 and December 2009⁶ is a perfect

¹ http://ryerisland.com/DRMS_wrong_on_ryer_island.htm

² http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/wq_control_plans/2006wgcp/exhibits/append2/doi-07.pdf go to 2004 log

³ <http://www.usbr.gov/mp/evo/vungvari/Cc-gates.pdf> revised operations log

⁴ http://deltarevision.com/2011/Bacon_Island_Jones_Tract_field_studies.pdf

⁵ http://www.science.ca/water.ca.gov/drms/drms_irp.html website now says "archived" See flood risk sections

⁶ http://www.water.ca.gov/floodmgmt/dsmo/sab/drms/phase1_information.cfm Corrected regarding Ryer Island flood history only

example of the application of salad-bar science. Review of the historical process of the DRMS process shows the following steps:

First, the DRMS funder (DWR) determined outcome desired—a technical report of Delta island failure history which would create the impression of immediate danger. i.e support the concept that “Delta islands are on the verge of failure based on historical records”.

Second, the DRMS contractor (URS) along with the DRMS funder proceeded to pick and choose time frames and historical data, and even included records from areas not within the physical location of the Delta.

Third, the DRMS authors inconsistently applied and reported the data so that anyone attempting to review the data would not be able to duplicate the findings and therefore have difficulty challenging the report without recompilation of historical data independently.

However, the DRMS report was and continues to be challenged in many ways, which is the natural outcome of salad-bar science. It’s bad science.

Specifically, the DRMS reported that Delta Islands had flooded 158 times in the last 100 years⁷. The last comprehensive Delta flood study, reported by USACE, reported 36 floods since the Delta islands were leveed⁸. How would two government agencies come up with such different numbers? DWR/URS came up with the false and inflated flood number by (1) counting islands floods from a time before levees were even built⁹; (2) counting islands not located in the legal Delta as if they were in the Delta¹⁰; (3) counting intentional or controlled flooding of islands as if they were accidental floods¹¹; (4) inconsistently adding incidents of controlled flooding¹²; (5) fabricating flood history for target areas of the Delta¹³; (6) confusing the locations of Delta islands by applying flood history to alternate islands¹⁴; and (7) fabricating a “flood” incident in 2004¹⁵ as if it was an accidental

No comments

- n/a -

⁷ http://www.science.ca/water.ca.gov/pdf/drms/DRMS_Risk_Report_section_01_071008.pdf look at section 2, 7.

⁸ http://www.spk.usace.army.mil/organizations/cespk-pao/delta/delta_reports/Plate%20Delta%20Flooding%20Map.pdf
complete report: <http://www.spk.usace.army.mil/projects/civil/Delta/Docs.html>

⁹ http://www.water.ca.gov/floodmgmt/dsmo/sab/drmsp/docs/Risk_Report_Section_13_Final.pdf Uses period from 1900 to 2000 but the current levee system was not improve to current standards until 1930’s.

http://www.science.ca/water.ca.gov/pdf/drms/DRMS_Risk_Report_section_02_062608.pdf Maps at the end reflect incorrect historical data.

¹⁰ http://www.science.ca/water.ca.gov/pdf/drms/DRMS_Risk_Report_section_13_071008.pdf See page 23; and see maps for reference: http://www.delta.ca.gov/res/docs/map/Black_and_White_Map.pdf Legal Delta Region island names (no Suisun Marsh) See also <http://www.delta.ca.gov/res/docs/map/delta.pdf> and DRMS includes Suisun Marsh http://www.water.ca.gov/floodmgmt/dsmo/sab/drmsp/docs/RiskAnalysis_ITF.pdf see page 9. http://www.delta.ca.gov/res/docs/Sacto-SanJoaquin_fact.pdf “Delta Facts” includes Suisun Marsh area.

¹¹ http://www.deltarevision.com/2011/historic-timeline/historic_maps/1975_delta-floods-dwr.pdf see map of “controlled flooding” islands

¹² http://www.deltarevision.com/2011/historic-timeline/historic_maps/1975_delta-floods-dwr.pdf same document but make note of Yolo Bypass area

¹³ http://rverisland.com/DRMS_wrong_on_ryer_island.htm

¹⁴ http://rverisland.com/Rver_maps.htm

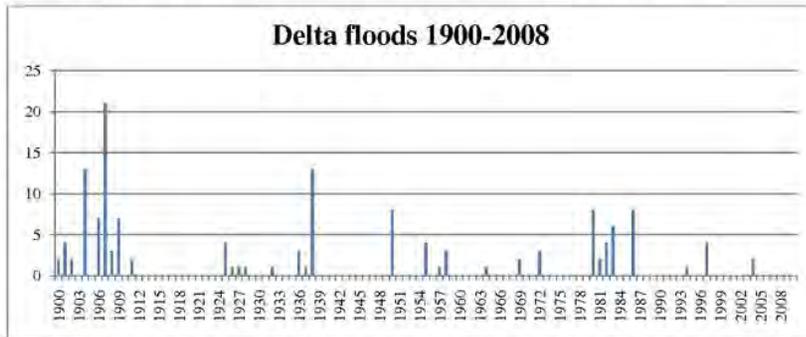
¹⁵ http://deltarevision.com/Lones_Traet.htm

occurrence instead of a field study for In-Delta storage proposals. Please see the timeline IDS study¹⁶ for details.

What is important to note is that Delta islands have **not** accidentally flooded since the record water flows of the 1980's, even though there have been very wet rain years and a major earthquake in the Bay Area since the last accidental island flood. The timelines below represent accidental Delta island failure from flood and from seismic event and are provided to graphically demonstrate the truth, that historically Delta island flood risk is declining, not increasing. In other words, USACE, USBR and the Delta Reclamation Districts have been doing their job to protect Delta lands from accidental floods:

The timelines below are based on reports and materials provided by Department of Water Resources published in 1975¹⁷, 1987¹⁸, 2005¹⁹, 2007²⁰, and reports and documents provided by Department of Interior, USBR, or US Army Corps of Engineers dated 1980, 1999 and 2006²¹. The totals were summarized in a spreadsheet.²²

Figure 1: Timeline of Historical Floods in Delta, both accidental and intended floods.



As the above timeline shows, the vast majority of flood events in the Delta occurred prior to the first series of levee improvements started in the 1930's. In fact, 86 islands flooded prior to 1930, and since the islands were not improved prior to 1930 it is intentionally misleading to use flood incidents from a time when the levees did not exist! In other words, DWR's claim of 158 floods should be reduced by 86 to "72" based on this fact alone.

¹⁶ http://deltarevision.com/2011/Bacon_Island_Jones_Tract_field_studies.pdf

¹⁷ http://www.deltarevision.com/2011/historic-timeline/historic_maps/1975_delta-floods-dwr.pdf see map of "controlled flooding" islands

¹⁸ http://deltarevision.com/1848-1989_docs/1986-tyler_island_flood.pdf

¹⁹ http://www.waterplan.water.ca.gov/docs/cwpu2005/Vol_1/v1PRD.combined.pdf page 187

²⁰ http://baydeltaoffice.water.ca.gov/sdb/tbp/deltaoverview/delta_overview.pdf

²¹ http://www.spk.usace.army.mil/organizations/cespk-pao/delta/delta_reports/Plate%202%20Regions1%20Map.pdf and full report at <http://www.spk.usace.army.mil/projects/civil/Delta/Docs.html> <http://www.spk.usace.army.mil/organizations/cespk-pao/delta/index.htm> for more details

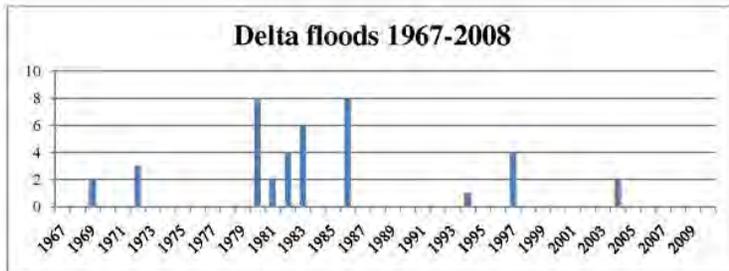
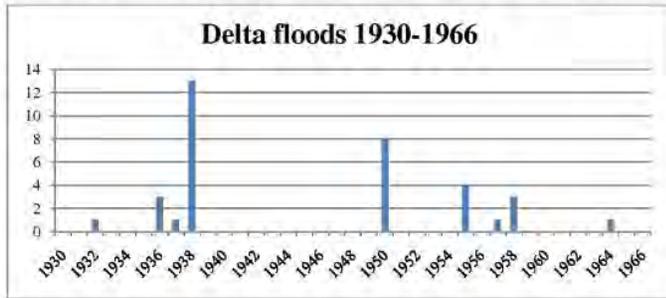
²² http://tyerisland.com/images/floods/delta_floods_final.pdf graphs at http://deltarevision.com/2011/historic-timeline/historic_maps/timeline_delta_levee_failures.pdf

No comments

- n/a -

In fact, prior to 2004, DWR, USBR and other government agencies consistently reported Delta flood incidents in two time periods: 1930 to 1966 and 1967 to the present. This is because levees were improved between 1930 and 1966 for the Federal water project, and later received more improvements as part of the state water projects of the late 1960s and beyond.

The two tables below clearly show the decline of flood incidents as levees are improved and Delta water inflows become more and more managed by the joint operation of DWR and USBR.



The wettest year of record was 1983, but many of the recent floods were not correlated to the wettest periods. It is interesting to note that the businesses and farmers outside the Delta, who have very strong political ties, were pushing for passage of the Peripheral Canal plan from approximately 1978 to the vote of 1982. Allowing flooding of Delta islands was as politically opportune in 1980 as it was in 2004 for the Jones Tract "sunny day" flood.

Another way that DWR is currently intentionally misleading viewers regarding Delta flood history to list intended, planned or control floods as if they were accidental floods. According to DWR in their 1975 publications²³, several islands are managed for "flood control" meaning the island is intentionally flooded for to relieve water pressure or flow to a different island or waterway in the Delta. McCormack/Williamson Tract and all of the Yolo Bypass area have been intentionally flooded for

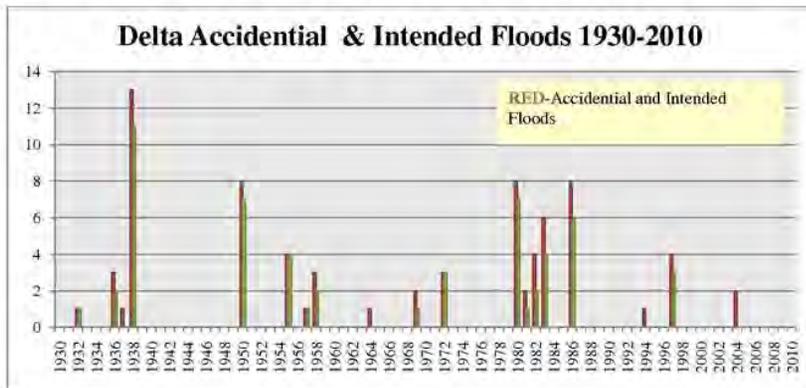
²³ http://www.deltarevision.com/2011/historic-timeline/historic_maps/1975_delta-floods-dwr.pdf see map of "controlled flooding" islands

No comments

- n/a -

water management purposes. So why would DWR now list the same flood events as if they were accidental floods? Below is a table showing Accidental floods, which excludes islands that were intentionally flooded at various times, islands that were flooded and remain flooded for water storage or ecosystem restoration projects, and flood events that were intended to be field studies for In-Delta Storage modeling reports. Flood events/islands excluded: Big Break, Clifton Court Tract, Donlon Island, Franks Tract, Little Franks Tract, Little Mandeville Island, Lower Sherman Island, Mildred Island, McCormack-Williamson Tract, and Lower/Upper Jones Tract (2004 flood excluded as accidental). Note that DWR in 2006 compiled a summary of the costs of "major Delta levee breaks"²⁴ and the last major north or central Delta levee break was in 1986, and in 1997 there was a levee break in the lower San Joaquin area. No mention of Jones Tract 2004 levee breach which was reported to be the most expensive one, most likely due to the extended studies associated with that breach.

Compare the red bars which include both intended and accidental floods, with the green bars, which include only *accidental* floods of Delta Islands in use today:



Historical data shows the clear trend away from levee failures as the state and federal agencies have communicated more and managed the water systems jointly. 1997 was the last time there were accidental Delta floods, and the major flood of Tyler Island was the result of overflow from the "controlled flood" area of McCormack/Williamson Tract. Notice that the much publicized 2004 Jones Tract "sunny day" failure is listed as an intended flood, not an accidental one. That is because documents indicate USBR/DOI was aware of the Jones Tract levee failure on June 1, 2004 (see the DCC operations log for 6/1/2004) but it was not reported by DWR until June 3, 2004. Reports show from 2002 to June 1, 2004 there was substantial focus on computer modeling and research for the "In-Delta Storage Project"²⁵ (IDSP) using Bacon Island and Webb Tract for in-delta water storage. In other words, the data compiled from the breach of Lower Jones

²⁴ http://www.water.ca.gov/floodmgmt/dsmo/sab/drmisp/docs/Comparison_of_Major_Levee_Breaks_in_Delta.pdf
²⁵ http://deltarevision.com/2011/Bacon_Island_Jones_Tract_field_studies.pdf

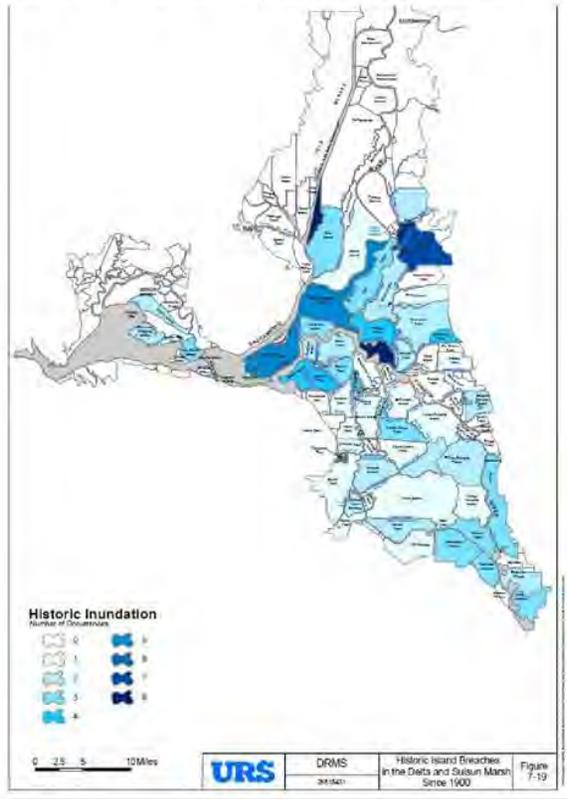
No comments

- n/a -

Tract levee was intended and used as a "field study" for the Bacon Island IDS proposals²⁶. In the computer modeling, Jones Tract field study data was logged in under "Bacon Island" as noted in the later reports on the matter²⁷.

Compare the DRMS 2008 Delta Island Inundations map below with a more accurate representation on the following page and see if you guess how many ways the DRMS 2008 map represented incorrect data.

Pay attention to Ryer Island, Prospect Island, Grand island, Tyler Island, McCormack/Williamson Tract, Dead Horse Island, Lower Jones Tract, just to name a few of the islands with misstated history in DRMS.



Note, also, that in December 2009, DRMS Final Phase 1 was revised regarding Ryer Island flood history, at the instance of Ryer landowners²⁸ but many of the tables reflecting means and averages of flood history were not corrected, so the DRMS report continues to reflect false data regarding Ryer Island along with other Delta islands.²⁹

No comments

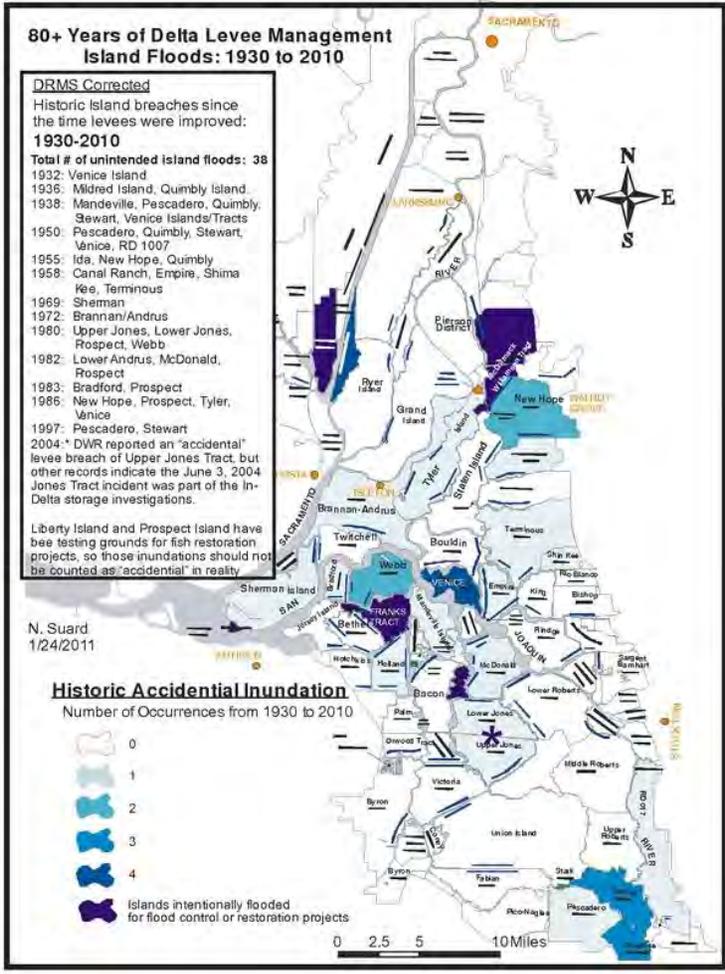
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²⁶ http://deltarevision.com/Jones_Tract.htm

²⁷ http://deltarevision.com/Delta_maps/In_Delta_water_storage.htm

²⁸ http://ryerisland.com/DRMS_wrong_on_ryer_island.htm emails & documents with DWR regarding Ryer Island flood history

²⁹ http://ryerisland.com/images/smalls/drms-using_maps_to_hide_mistakes.jpg



No comments
- n/a -

Map above was compiled from an extensive comparison of the various historical records and publications of Delta Flood history³⁰, summarized in the chart below, but still an estimate:

No comments

- n/a -

Island Name	80 year period:		Total # of Floods- USACE	Total # of Floods-DWR previous docs	106 years Floods- DWR/DRMS 1900-2006
	Island Floods 1930-1980	Island Floods 1981-2010			
Total Floods for the Time Period, 58 islands	22	9	35	34	158*
Andrus (upper)	0	0	0	0	1
Andrus (Lower)	0	1982	1	1	5
Bacon Island	0	0	0	0	1
Bethel Tract	0	0	0	0	4
Bishop Tract	0	0	0	0	1
Boudin Island	0	0	0	0	4
Brack Track	0	0	0	0	1
Bradford Island	0	1983	1	1	2
Brannan Island	1972	0	1	1	5
Byron Track	0	0	0	0	1
Canal Ranch Tr.	1958	0	1	1	0
Coney Island	0	0	0	0	1
Decker Island	0	0	0	0	0
Drexler	0	0	0	0	0
Empire Tract	1958	0	1	1	2
Fabian Tract	0	0	0	0	2
Grand Island	0	0	0	0	1
Hastings Tract	0	0	0	0	0
Holland Tract	0	1980	1	1	1
Hotchkiss Tract	0	0	0	0	0
Ida Island	1955	0	1	1	2
Jersey Island	0	0	0	0	4
Jones Tract (lower)	1980	2004*	2	2	4
Jones Tract (upper)	1980	2004*	2	2	1
King Island	0	0	0	0	0
Mandeville Island	1938	0	0	0	1
McDonald Tract	0	1982	1	1	1
Merritt Island	0	0	0	0	0
Medford Island					1
Mildred Island	1936	0	1	1	3
New Hope Tract	1955	1986	2	2	7
Orwood Tract	0	0	0	0	
Palm Tract	0	0	0	0	1
Paradise Junction					3
Pescadero Tract	1938,1950	1997	2	1	3
Prierson District	0	0	0	0	
Prospect Island	1980	82,83,86	4	4	8
Quimbly Island	1936,38,50,55*				4
Ringe Tract	0	0	0	0	0
Rio Blanco Tract	0	0	0	0	0
Roberts Island (lower)	0	0	0	0	1

³⁰ http://rverisland.com/images/floods/delta_floods_final.pdf
http://deltarevision.com/maps/islands_floods levees/usace_delta_flood_history_2007_report_to_congress.pdf

Roberts Island (middle)	0	0	0	0	2
Roberts Island (upper)	0	0	0	0	1
Rough & Ready	0	0	0	0	0
Ryer Island	0	0	0	0	3
Sargent-Barnhart	0	0	0	0	2
Sherman Island	1969	0	1	1	5
Shima Kee Tr.	1958	0	1	1	4
Staten Island	0	0	0	0	2
Shima Tract	0	0	0	0	1
Stewart Tract	1938,1950	1997	3	3	3
Terminus	1958	0	1	1	2
Twitchell Island	0	0	0	0	3
Tyler Island	0	1986	1	1	3
Union Island	0	0	0	0	1
Veal Tract	0	0	0	0	0
Venice Island	1932,38,50	1986	4	4	8
Victoria Island	0	0	0	0	2
Webb Tract	1950,1980	0	2	2	2
Woodward Island	0	0	0	0	0
Wright-Elmwood	0	0	0	0	0
RD 1007	1950	0	1	1	1
Summary:					
58 islands	22	9	35	34	158*
			USACE	DWR pre-2006	DRMS/DWR 2009
The following Islands and time periods were excluded from this study for the reasons given:					
Island history 1900-1929	Levees of the Delta had not been improved to withstand flooding prior to 1930, when work began by USACE as part of the initial state water canal project. It is scientifically inaccurate to assess risk of a structure using occurrences from prior to the time the structure was built. Note that prior to 2006, even DWR documentation focused on Delta flood history starting after 1930.				
Franks Tract	Island was left flooded to be used for fishing, recreation and restoration field studies				
McCormack/Williamson Tr.	According to DWR 1975 documentation, these areas are state-owned and intentionally used for "controlled flooding", which accounts for the many times this area has been flooded. (DWR Bulletin No. 192, May 1975, page 10)				
Dead Horse Island	Also listed as a "controlled flooding" island per above DWR report				
Grainville Tract	Also listed as a "controlled flooding" island per above DWR Report				
Clifton Court Forebay	Intentionally flooded to be used as surface storage area for the water export pumps				
Suisun Marsh	DWR/DRMS included islands not previously listed in Delta studies, which makes it confusing and inflates flood incidents since the islands of Suisun Marsh area were never improved to withstand occasional floods.				
Jones Tract	The 2004 flooding of Jones Tract (Upper and Lower) appear to have been a pre-planned field study extension of the In-Delta Storage investigations under CalFed and USBR jurisdiction. (See attachment 7 for details)				

No comments

- n/a -

If DRMS Delta Flood history is substantially incorrect, then the DRMS seismic risk calculations, which included purported consideration of island flood history, would also be incorrect, logically. In addition, the studies proposing which islands to "save" in case of levee breach are also based on false historical island flooding³¹. In other words, if you input wrong numbers into a formula, the

³¹ <http://deltasolutions.usclvajs.edu/pdf/WorkingPapers/LeveeDecisions-2009Draft.pdf>

outcome would also be wrong. The next step, then, is to review the history of seismic events that caused levee failures in the Delta region, to better understand *current* seismic risk of Delta levees.

DRMS SEISMIC STUDIES: Regarding the risk to Delta levees from seismic event in the Bay Area, the formula used to come up with means and averages ignores factual history of individual Delta islands, then compiles data from islands within the legal Delta region with islands outside the Delta, to come up with means and averages that really do not apply to Delta islands. Clearly any lands located within California are subject to some damage from seismic events, but the areas of high risk are the San Francisco Bay area and the Los Angeles to San Diego areas, not the Delta.

NOTE: NO TIMELINE PROVIDED BECAUSE NO LEVEE HAS EVER BEEN KNOWN TO FAIL DUE TO SEISMIC ACTION IN NORTHERN CALIFORNIA

The end result of the salad-bar approach to the DRMS report is that many other scientists, agencies and nonprofit organizations have been repeating the same false Delta island history data over and over again. If a lie is repeated over and over again, does that make it the truth? **No**. Each time the incorrect data is repeated, it puts the veracity and integrity of the reporting scientist at risk, exposes the scientist or reporting agency to legal exposure for disseminating false information, and exposes the taxpayer citizenship of the state to added expense when legal action is taken against the state for changes to the Delta based on false "science". Please take the time to review the following examples of reports, maps or documents which regurgitate the false data contained in DRMS Phase 1 Final Report from the following resources: PPIC³², UCB³³, Laird Report to CA Assembly 2006³⁴, Delta Vision 2008³⁵, DFG/Delta Vision 2011³⁶ State of the Bay Report 2008³⁷ to name just a few.

No comments

- n/a -

³²

³³ http://deltarevision.com/maps/islands_floods_levees/urs-levee-floods-wrong.jpg

³⁴ http://deltarevision.com/maps/islands_floods_levees/2007_urs.jpg

http://deltarevision.com/maps/islands_floods_levees/2008ab1200_laird.GIF

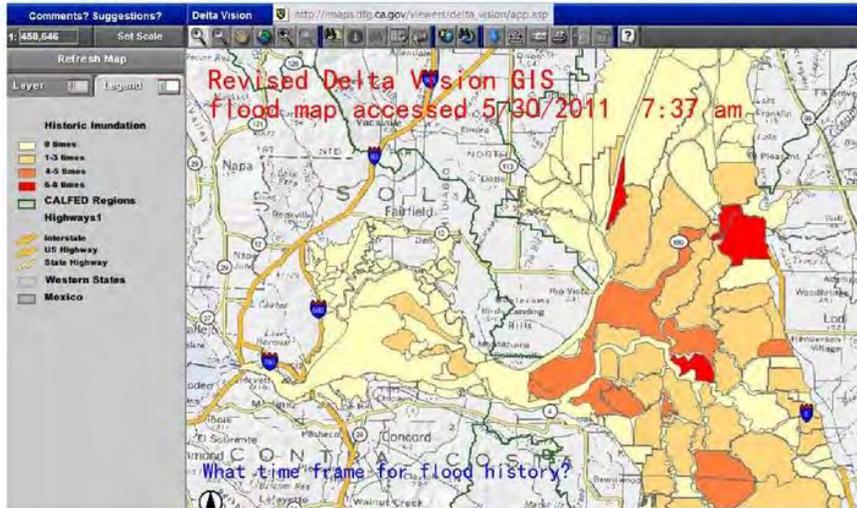
³⁵ http://ryerisland.com/images/maps/DV_wrong_on_ryer.JPG 2008 Delta Vision GIS wrong on Ryer Island and

http://ryerisland.com/images/gov-pdfs/floods/2_Ryers-flooding.pdf

³⁶ http://imaps.dfg.ca.gov/viewers/delta_vision/app.asp Historical inundation map found through Delta Vision website-still wrong

³⁷

Example: 2011 interactive online map at DFG website continues to display incorrect data compiled by DRMS:



(go to next page)

No comments

- n/a -

B **It depends on who's counting:** When computing water flow and velocity for reports comparing past and current water flow in the Delta, I found formula conflicts between conversion tables used by DWR/USBR and USGS.

No comments

- n/a -

Question for Karen Schwinn, Associate Director, Water Division, EPA Region 9 or David H. Blau, Senior Water Resource Planner: If the conversion table from DWR/USBR was used for the initial raw data and formula input for CALSIM modeling in 2002, wouldn't this explain one reason why CALSIM II modeling results don't match actual water flow calculations? Which conversion table is correct specifically regarding conversion between cubic feet per second (cfs) and million gallons per day (MGd): DWR/USBR³⁸ or USGS³⁹?

Quantity	Multiply	By	To obtain
Area	acre	43,560	square feet
Volume	cubic foot	7.481	gallons
	cubic foot	62.4	pounds of water
	gallon	0.13368	cubic feet
	acre-foot	325,900	gallons
	acre-foot	43,560	cubic feet
	million gallons	3.07	acre-feet
Flow	cubic foot/second (cfs)	450	gallons/minute (gpm)
	gallons/minute	0.002228	cubic feet/second (cfs)
	million gallons/day	1.5472	cubic feet/second (cfs)
	cubic foot/second (cfs)	646.320	gallons a day
	cubic foot/second (cfs)	1.95	acre-feet a day
	million gallons/day (mgd)	1.120	acre-feet a year
Pressure	feet head of water	433	pounds/square inch (psi)
Power	kilowatts (kW)	1.3405	horsepower (hp)

³⁸ <http://www.water.ca.gov/swp/operations/control/docs/annual/annual01.pdf>

³⁹ <http://ks.water.usgs.gov/waterwatch/flood/conv.html#factors>

Below is a specific USGS conversion chart and the next page has a more detailed conversion chart. The difference of 48 gallons between the conversion charts seems minimal. However, when one considers 48 gallons times the number of cubic feet per second of flow over a year's time, it becomes more substantial:

<http://ks.water.usgs.gov/waterwatch/flood/conv.html#factors>
Conversion factors for the above calculations:

1 ft³/s =

1.9835	acre-feet per day
7.48	gallons per second
448.8	gallons per minute
26,928	gallons per hour
* 646,272	gallons per day
28.32	liters of water per second
1,699.2	liters of water per minute
101,952	liters of water per hour
2,446,848	liters of water per day
2.446848	million liters of water per day
.646272	million gallons per day (Mgal/d)
62.5	pounds of water per second
3,750	pounds of water per minute
225,000	pounds of water per hour
5,400,000	pounds of water per day

No comments

- n/a -

No comments

- n/a -

<http://water.usgs.gov/nwisum/WSP2425/conversion.html>

U.S. CUSTOMARY (INCH-POUND)		U.S. CUSTOMARY (INCH-POUND) OR INTERNATIONAL SYSTEM (METRIC)
LENGTH		
1 in (inch)	=	25.4 mm (millimeters)
1 ft (foot)	=	0.3048 m (meter)
1 mi (mile)	=	5,280 ft
	=	1,609.344 m
	=	1.609344 km (kilometers)
AREA		
1ft ² (square foot)	=	0.09290304 m ² (square meter)
1 acre	=	43,560 ft ² (square feet)
	=	0.0015625 mi ² (square mile)
	=	0.40469 ha (hectare)
	=	4,046.9 m ²
1mi ²	=	640 acres
	=	259.00 ha
	=	2.5900 km ² (square kilometers)
VOLUME OR CAPACITY (liquid measure)		
1 gal (gallon, U.S.)	=	231 in ³ (cubic inches)
	=	0.13368 ft ³ (cubic foot)
	=	3.7854 L (liter)
	=	0.0037854 m ³ (cubic meter)
1 Mgal (million gallons)	=	3.0689 acre-ft (acre-feet)
1 ft ³	=	1,728 in ³
	=	7.4805 gal
	=	28.317 L
	=	0.028317 m ³
1 acre-ft*	=	43,560 ft ³
	=	0.32585 Mgal
	=	1,233.5 m ³
SPEED		
1 mi/hr (mile per hour)	=	1.4667 ft/s (feet per second)
	=	0.44704 m/s (meter per second)
VOLUME PER UNIT OF TIME		
1 ft ³ /s (cubic foot per second)	=	448.83 gal/min
	=	0.64632 Mgal/d
	=	1.9835 acre-ft/d (acre-feet per day)
	=	28.317 L/s (liters per second)
TEMPERATURE		
[°F (degrees, Fahrenheit)] to °C (degrees, Celsius)		
(°F - 32) x 5/9 = °C		

* Volume of water 1 foot deep covering an area of 1 acre.

Please take a close look at the water conversion table used by DWR⁴⁰ and the ones used by USGS⁴¹. You will note that when converting between CFS and Mgd, the conversion numbers are slightly different, which results in different gross water flow answers. This is important because many of the planning documents related to water flow in the Delta use different methods to express flow and quantity of water, and CALSIM I and II, it is presumed, uses the DWR/USBR conversion formula. If the USGS formula is correct, wouldn't this be one

⁴⁰ <http://www.water.ca.gov/swp/operationscontrol/docs/annual/annual01.pdf>

⁴¹ <http://ks.water.usgs.gov/waterwatch/flood/conv.html>

C **What's Where When or 101 Wrong Maps of the Delta:** Several different important Delta-related studies and agencies confuse the islands and waterways of the Delta. **Question for NOAA speaker or BDCP speaker:** If the scientists or government agencies can't even come up with accurate maps of the Delta, why should their study results be accurate or trusted?

When an agency or scientist conducts a study of the Delta, he/she/they should first be sure of the physical location of the Delta Islands, and those island names. The confusion of Delta island names and locations affected not just the DRMS report (section A above) but also many other currently-used reports intended to validate the building of the central conveyance canal and other ongoing Delta construction projects. Just a few of the wrong Delta maps are provided below, but a compilation of many more are available online⁴².

In order to recognize wrong maps of the Delta, one must have as reference a correct map of the Delta Islands and waterways. The first map below appears to show correct island and waterway names. On the following map red circles were added to help the viewer pay attention to the areas of the subsequent sample Delta maps that display wrong geographic information. (You might want to test your Delta knowledge by guessing how many times or ways each of the maps are wrong, when compared to the correct Delta map:

No comments

- n/a -

⁴² <http://www.deltarevision.com/101-wrong-maps-of-the-delta.html>

Correct Delta island and waterways from USACE ⁴³ and CALFED 2000 ROD documents⁴⁴

No comments

- n/a -

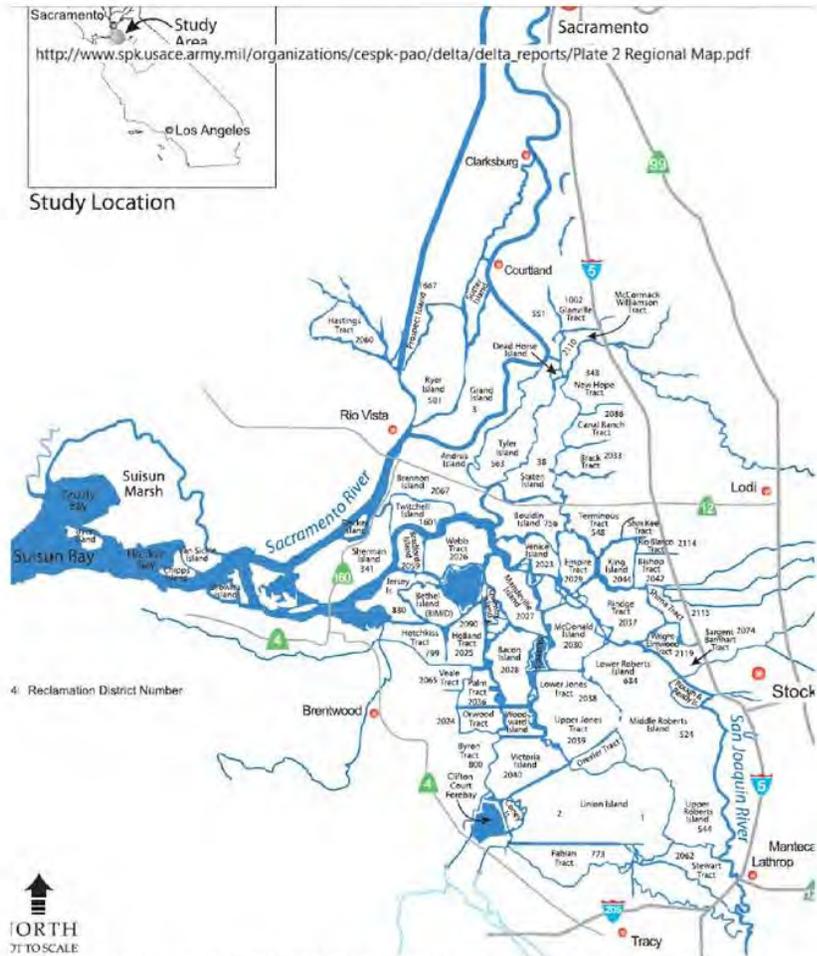
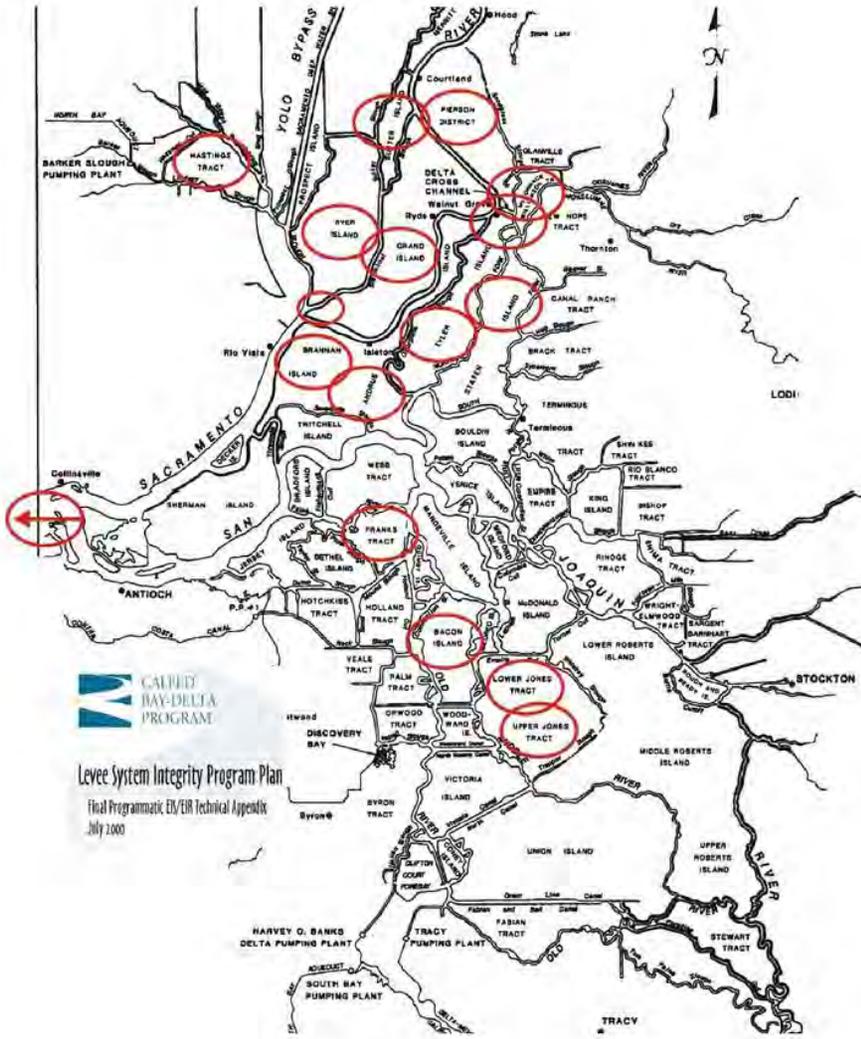


Plate 2. Regional Map of the Sacramento - San Joaquin Delta, California

⁴³ http://www.spk.usace.army.mil/organizations/cespk-pao/delta/delta_reports/Plate%20-%20Regional%20Map.pdf

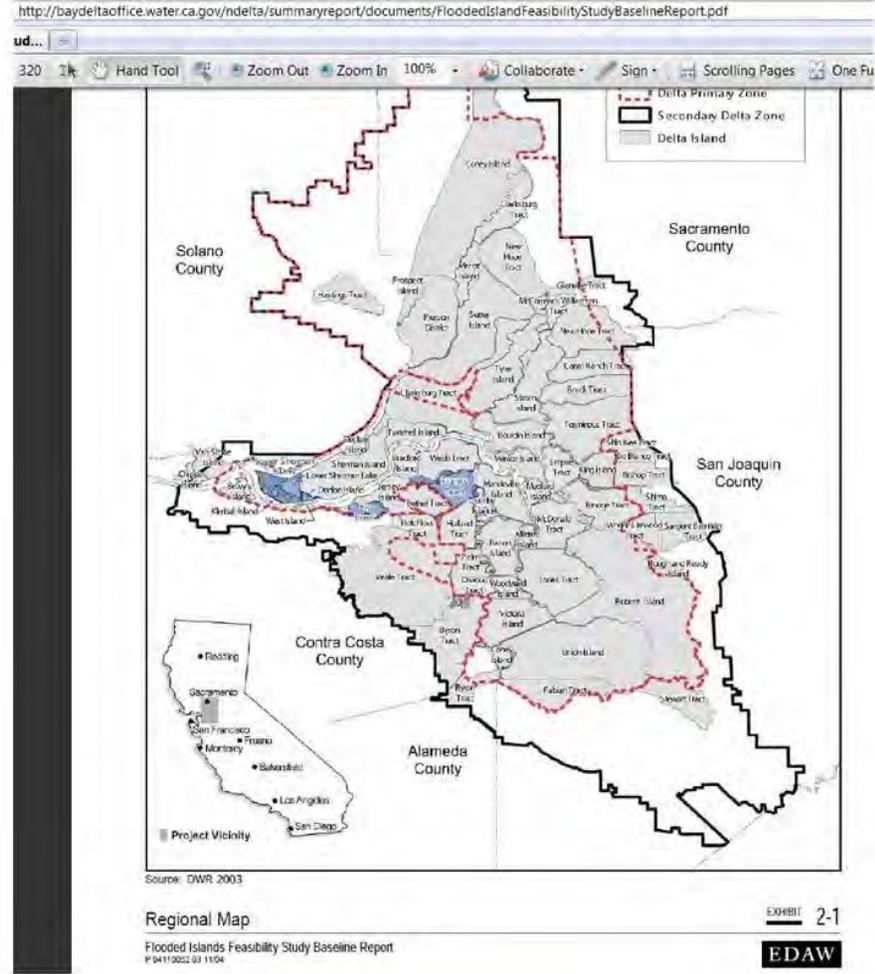
⁴⁴ http://calwater.ca.gov/calfed/objectives/Levee_System_Integrity.html and also see <http://calwater.ca.gov/content/Documents/library/305-1.pdf> page 132



Levee System Integrity Program Plan
 Final Programmatic EIS/ER Technical Appendix
 July 2000

No comments
 - n/a -

Compare the correct map with the "Flooded Island Feasibility Baseline Report from 2005." ⁴⁵ Hint: there are at least 8 mistakes in this one map:



No comments

- n/a -

⁴⁵ <http://www.water.ca.gov/frankstrack/docs/%286%29Flooded%20Islands%20Pre-Feasibility%20Report.pdf> page 19 and also <http://baydeltaoffice.water.ca.gov/ndelta/summaryreport/index.cfm> for links to the modeling results.



No comments

- n/a -

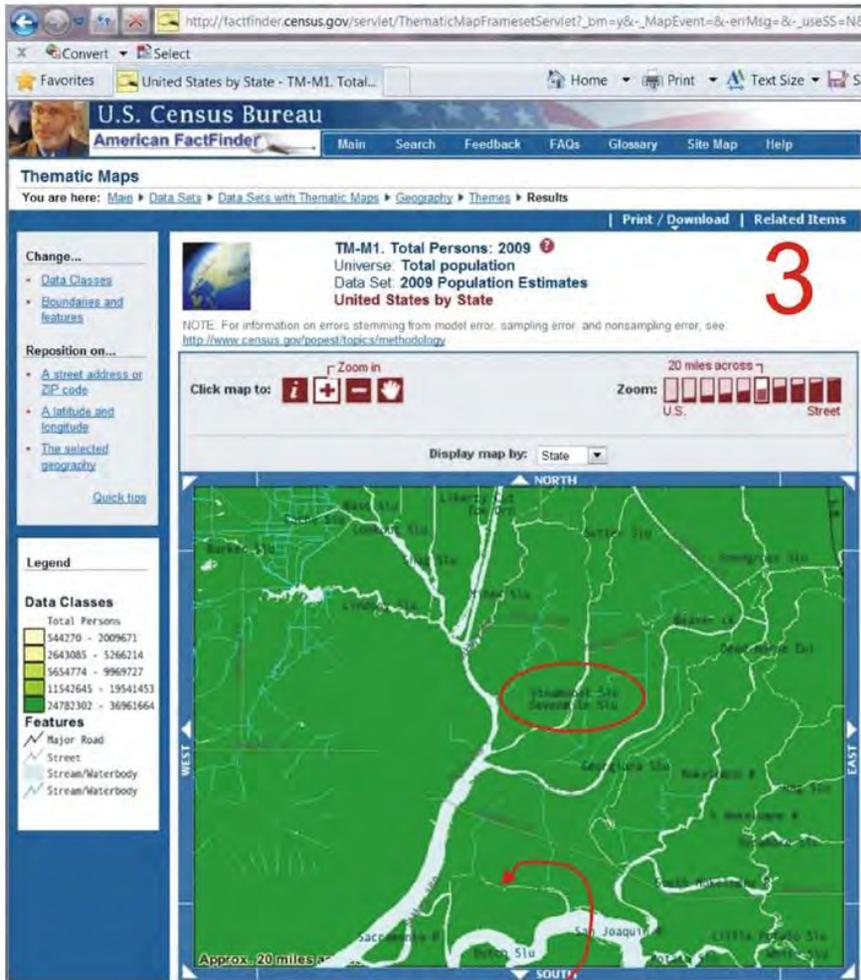
The above map is from the DWR study on geomorphology dated 2007⁴⁶. It's a test of your knowledge of some of the Delta waterways. Hint: Look for the Sacramento River, Steamboat Slough, Sutter Slough. Note the study that shows online has now been corrected, at least the map has been corrected.

⁴⁶ http://www.water.ca.gov/floodmgmt/dsmo/sab/drmisp/docs/Geomorphology_TM-updated07.pdf See page 33
http://www.water.ca.gov/floodmgmt/dsmo/sab/drmisp/docs/Geomorphology_TM.pdf the same map, corrected

Below is the US Census Bureau map, which renames Steamboat Slough as Seven Mile Slough. Seven Mile Slough is located in Sacramento County, down by Twitchel Island, not where the map below shows it. If the US Census Bureau can't even get a waterway location right, how can we trust their reports on the census for 2010?!

No comments

- n/a -



Seven Mile Slough is here

http://www.cnrfc.noaa.gov/google_river.php

CNRFC - Google Maps - River...

National Weather Service
California Nevada
River Forecast Center

Home News Organization Frequently Asked Questions Search [] W/R

Get Local Forecast for: []

River and Reservoir Summary - Google™ Maps Interface

Please Note: Due to the large amounts of data being displayed on this interface, please be patient as the data is retrieved and loaded onto the Google™ Map Interface below. Data may take as long as 30 seconds to load. Firefox is the preferred browser for use.

Search Help

- Hydrology
- Precipitation Data
- River/Reservoir Data
- River Guidance
- Flash Flood Guidance
- AHPS/ESP Traces
- WFO Hydro
- Products
- Water Supply
- Snow
- Data/Forecasts
- River Flood Outlook
- Google™ Maps
- Data
- Weather
- Quick Summary
- CNRFC/HPC QPF
- Watches/Warnings
- Satellite Imagery
- Radar Imagery
- Observations
- Weather Forecasts
- Numerical Models
- Climate
- Data and Indices
- Climate Forecasts
- El Niño and MJO
- Teleconnections
- Hydroclimatology
- Local Info and Links
- Research & Outreach
- Data Archive
- Storm Summaries
- Publications
- Newsletter
- Links
- CNRFC Mobile
- Web
- RFC Map

Map Satellite Hybrid Terrain

Boundaries

- CNRFC Area of Responsibility
- Counties (OR, CA, and NV)
- Drainage Basins
- 2008 Burn Areas
- 2009 Burn Areas
- 2010 Burn Areas

Radar Data

- Radar Reflectivity Mosaic
- Radar 1 Hour Precip Mosaic

Data Selection

- Current Hour - Forecast Points
- Current Hour - Other Points
- Current Hour - Reservoirs
- 1 Hour Ago - Forecast Points
- 1 Hour Ago - Other Points
- 1 Hour Ago - Reservoirs
- 2 Hours Ago - Forecast Points
- 2 Hours Ago - Other Points
- 2 Hours Ago - Reservoirs
- 3 Hours Ago - Forecast Points
- 3 Hours Ago - Other Points
- 3 Hours Ago - Reservoirs

2000 ft
500 m

Map data ©2010 Google, Terms of Use

Clear All Overlays

No comments

- n/a -

Above is a "print screen" from the NOAA website, and it also confuses Steamboat Slough with the Sacramento River. In cases of emergency, does NOAA recommend boaters on Steamboat Slough define their location as Sacramento River instead?

Your National Weather Service forecast

18 Miles ESE Travis AFB/Fairfield CA

Enter Your "City, ST" or zip code Go

NWS Sacramento, CA [Mobile Weather Information](#) | [En Español](#)
Point Forecast: 18 Miles ESE Travis **Last Update:** 8:30 pm PST Jan 1, 2011
 AFB/Fairfield CA **Forecast Valid:** 10pm PST Jan 1, 2011-6pm PST
 38.19°N 121.63°W (Elev. 3 ft) Jan 8, 2011

Forecast at a Glance

Tonight	Sunday	Sunday Night	Monday	Monday Night	Tuesday	Tuesday Night	Wednesday	Wednesday Night
Rain	Rain	Showers Likely	Decreasing Clouds	Mostly Clear	Sunny	Partly Cloudy	Sunny	Mostly Clear
Lo 41 °F Hi 49 °F	Lo 38 °F Hi 50 °F	Lo 38 °F Hi 50 °F	Lo 35 °F Hi 51 °F	Lo 35 °F Hi 51 °F	Lo 33 °F Hi 52 °F	Lo 35 °F Hi 52 °F	Lo 35 °F Hi 52 °F	Lo 35 °F Hi 52 °F

Detailed 7-day Forecast **Detailed Point Forecast** [\[Move Down\]](#)

Tonight: Rain. Low around 41. Southeast wind around 9 mph. Chance of precipitation is 90%.

Sunday: Rain. High near 49. Southeast wind between 5 and 8 mph. Chance of precipitation is 80%.

Sunday Night: Showers likely. Cloudy, with a low around 38. East northeast wind between 6 and 9 mph. Chance of precipitation is 60%.

Monday: Mostly cloudy, then gradually becoming sunny, with a high near 50. North northeast wind around 8 mph.

Monday Night: Mostly clear, with a low around 35. Northwest wind between 3 and 9 mph.

Tuesday: Sunny, with a high near 51.

Click Map for Forecast [Disclaimer](#)

Map data ©2010 Google

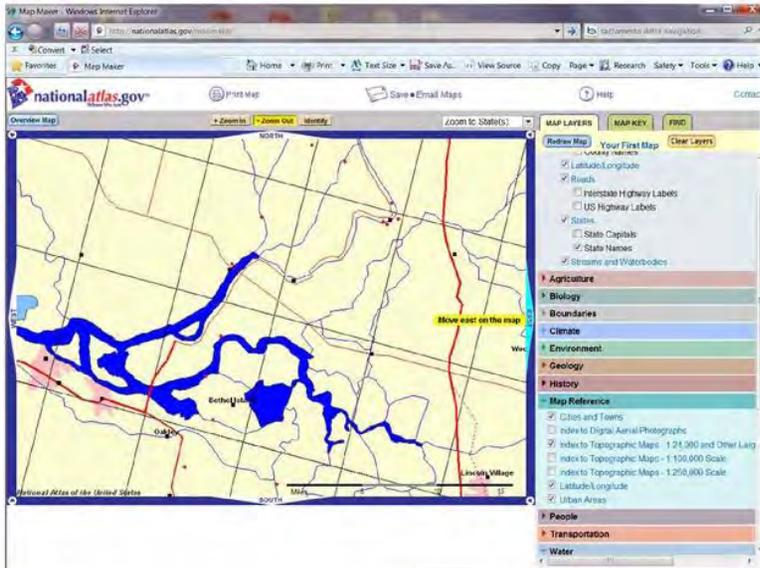
Requested Location Forecast Area

Lat/Lon: 38.19°N 121.63°W Elevation: 3 ft

No comments

- n/a -

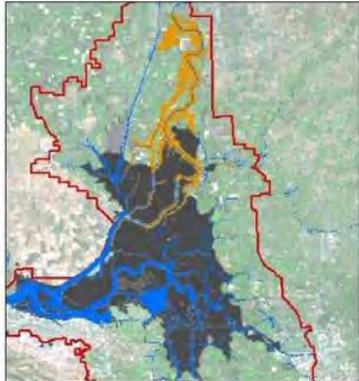
NOAA national weather service website "print screen" also shows Steamboat Slough as the Sacramento River. When did Steamboat Slough officially get renamed to Sacramento River?



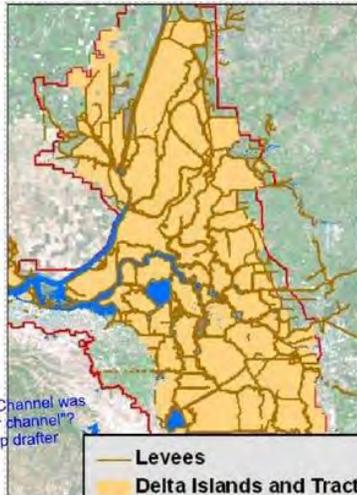
The current national atlas eliminates Sutter and Miner Sloughs. Why?

No comments
- n/a -

Delta Area - 1850



Delta Area - 2006



Tidal wetlands and natural levees 1850
Unit
 Natural Levees
 Peat and Muck - Tidal Wetlands
 Major Channels - 1850
 Delta Area

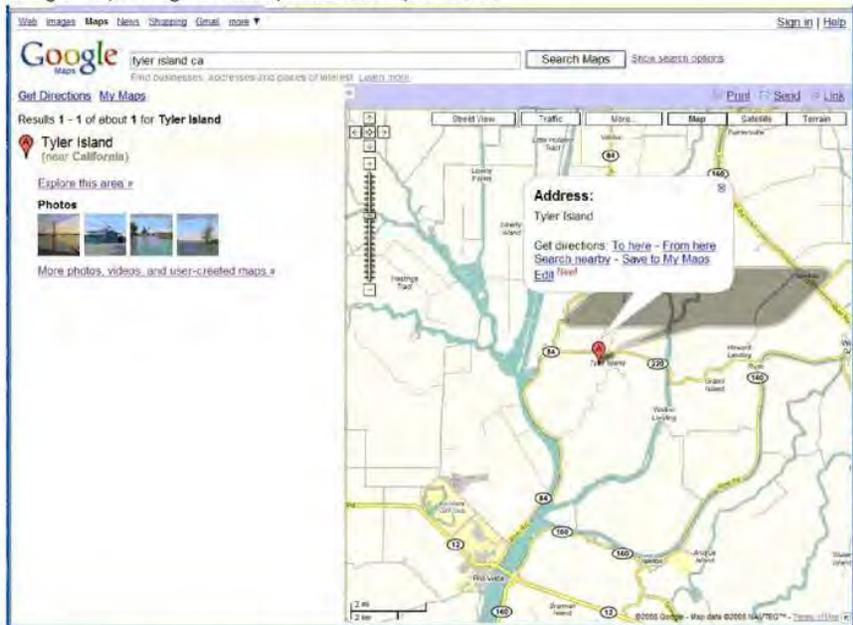
Levees
 Delta Islands and Tracts
 Delta Area

Really? The Sacramento Ship Channel was in existence in 1850 as a "major channel"? Who's history book was this map drafter reading?

No comments
 - n/a -

Another example of using graphics to convey false data.

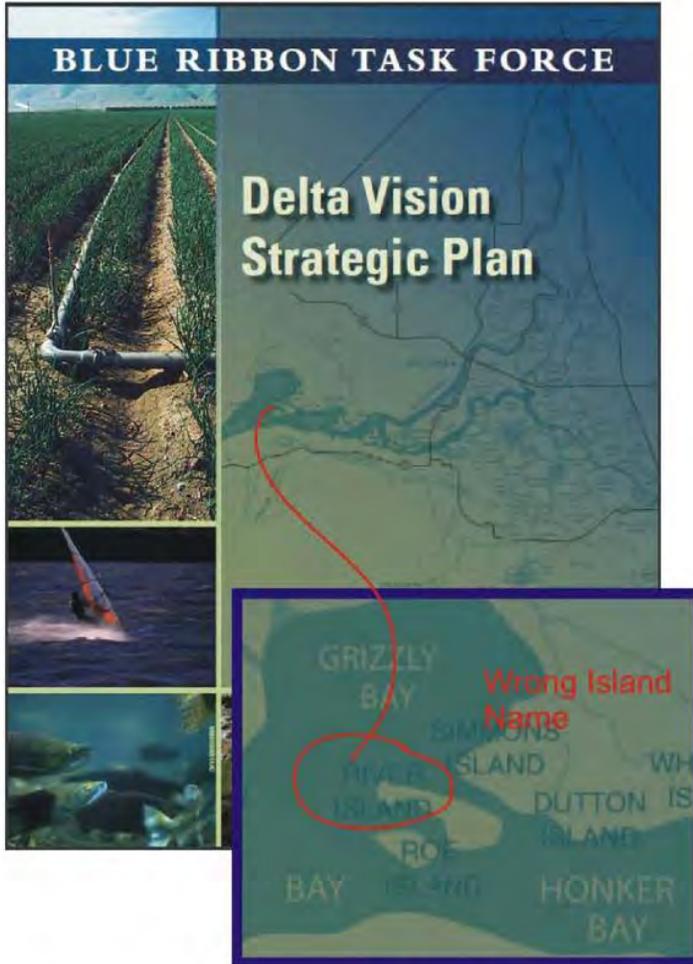
Google maps listing the Real Ryer Island as "Tyler" Island



No comments

- n/a -

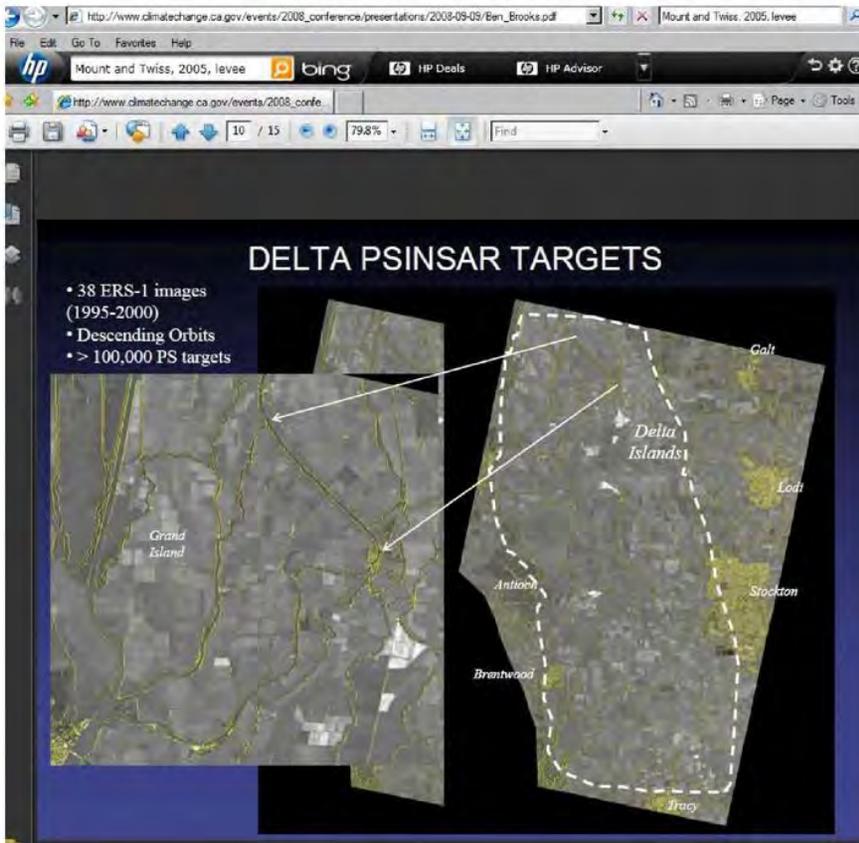
Part of the problem with wrong Delta island and waterway names is that Google has been incorrectly labeling islands and waterways since at least 2005. Google apparently has a contract with several governmental mapping agencies, which might explain why normally accurate organizations like NOAA is currently displaying incorrect Delta location names online.



No comments

- n/a -

Even after the Delta Vision representatives were notified of the incorrect labeling of some of the Delta islands, the final version was published with several mistakes. The island circled is called "Ryer".



No comments

- n/a -

The result is that many Delta-related speakers, including professors from UCD, continue to use incorrect Delta names in their presentations.

No comments

- n/a -

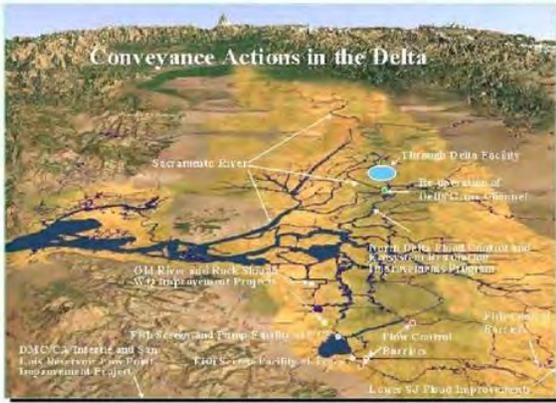
CalFed did not “fail” in 2003 regarding the conveyance portion of the plan, as construction has continued to move forward as “regional projects”. It appears most of the elements of the CalFed 2000 ROD “preferred alternative” are complete or almost complete.

D **Question for BDCP or DWR speaker:** Is it expected the central conveyance or “preferred alternative” which includes reoperation of the DCC, expanded capacity of Freeport pumps, revision to McCormack/Williamson Tract, dredging around the area of DCC and Dead Horse island to facilitate greater water flow down the Mokelumne Rivers, etc will be operational by the end of 2012 or earlier? Will it include use of Staten Island for In-Delta water “detention” or other Delta islands and if so, which islands are planned to be IDS? There are detail studies regarding the restoration of Ryer Island in the Suisun marsh area. What is the plan for the Ryer Island north of the Rio Vista bridge bordered by Steamboat Slough? The following maps express graphically the ongoing CALFED conveyance project pathway, and the continuing confusion regarding restoration and the two Ryer Islands.



Project Map

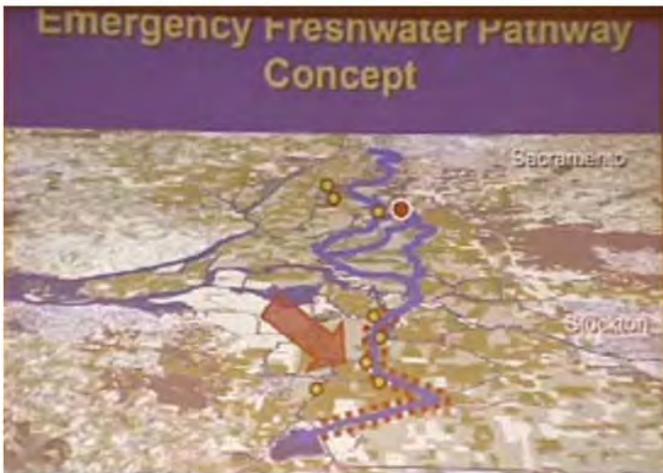
No comments
- n/a -



19

CALIFORNIA BAY DELTA AUTHORITY

MULTI-YEAR PROGRAM PLAN
CONVEYANCE PROGRAM





CaTrans shows
Ryer Island as
Flooded!!!

The above map is part of section 4 of this paper, but is also an example of another erroneous Delta map.

No comments
- n/a -



No comments
- n/a -

Map above is another example of an erroneous Delta map, as it omits important labeling.

Since URS has conducted extensive studies regarding the Suisun Marsh area, including "Ryer Island" which is not named in the planning map, are the detail studies actually intended to be focused on the "Ryer Island" north of the Rio Vista bridge, bordered by Steamboat Slough?

Thank you in advance for your time and attention to my concerns and questions regarding plans for the Sacramento San Joaquin Delta in general, Steamboat Slough and Ryer Island in particular.

Respectfully submitted,

Nicole S. Suard, Esq., Managing Member, Snug Harbor Resorts, LLC

Cc: Jeffery Mount, UCD, Delta Vision, PPIC, URS, DWR, USBR



No comments
- n/a -



Decker Island restoration area fall 2011-
fish passageway clogged with water weeds



No comments

- n/a -



By Decker Island fall 2011

s) now
n. For
03 during
Sampling of
om 1992
ative
e Delta,

There are 193 known introduced species in the Delta. These species dominate many Delta biological communities in both number and biomass.

http://www.water.ca.gov/floodmgmt/dsmo/sab/dmsa/docs/Status_and_Trends-PRD.pdf

ed
g
l
e
r.



Introduced waterweed can overwhelm low velocity channels



Sacramento River off Brannan Island Fall 2011

No comments

- n/a -



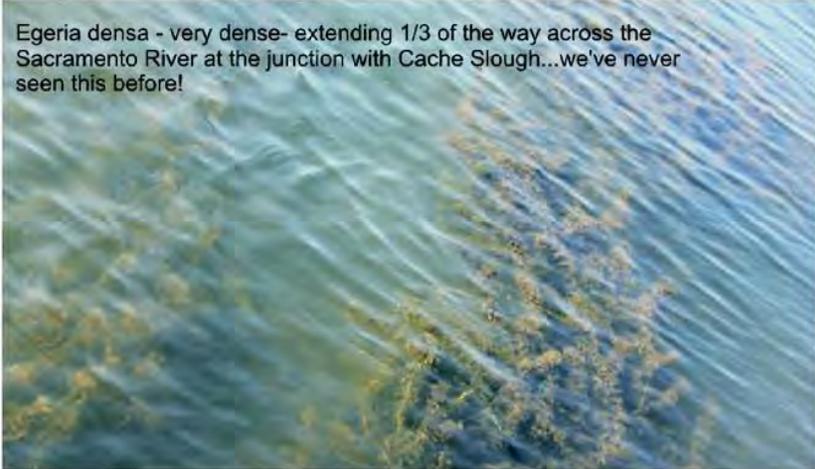
3 Mile Slough at the banks of Brannan Island Fall 2011

No comments
- n/a -



Cove off Steamboat Slough where turtles and river otter used to live...

Egeria densa - very dense- extending 1/3 of the way across the Sacramento River at the junction with Cache Slough...we've never seen this before!



No comments

- n/a -

Unless funding and an annual plan to control invasive aquatic species is included as part of the Delta Plan, the Delta will eventually become clogged, limiting use of exports pumps, limiting use of in-delta irrigation pumps, limiting smaller fish to access to safer shallow habitat, limiting recreation boating and fishing, which will also negatively impact local economies.

It's a simple fact that lower water flows allow for increase in aquatic species growth. How will the Delta Plan deal with this serious Delta-wide issue?

ATTACHMENT H

DELTA HISTORY VS THE DELTA PLAN: Original or natural North Delta waterways

Section of 1852 survey of navigation on the Sacramento River.
For a short video describing navigation and scenes
http://snugharbor.net/old_sacramento_river-video.html or
<http://snugharbor.net/oldriversacramento.html>
Steamboat Slough was the primary navigation route for
steamships transporting passengers to and from Sacramento.
More historic

The Delta Plan for Transportation appears to eliminate the
original natural transportation routes of the North Delta, to
be replaced with the Sacramento Ship Channel-a man-
made waterway. This violates previous laws and codes,
and renigs on previous assurances to Delta land owners
and California boaters.

Steamboat Slough location



Portion of 1873 Irrigation map



Collection:
David Rumsey Historical
Map Collection
Author:
Augustus Cadeseler, 1852
1,047 Street, P. O. (Pres.
D.)
Date:
1852
Sheet Title:
General Staff, San
Francisco Bay



No comments

- n/a -

The following maps and report sections show the quality of work currently produced by the BDCP. If the drafters of the BDCP who have boated by Snug Harbor and some have actually visited the peninsula still confuse its location, how can anyone trust the accuracy of other data provided in the BDCP?

CURRENT BDCP MISTAKES

No comments
- n/a -

http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/Chapter_15_-_Figures/fig15a.htm

This BDCP map shows a marina at the Snug Harbor location, but the written description is of the Sailboat-only marina called Hidden Harbor, which is NOT listed on the map as a private marina. Does this mean Snug Harbor is eliminated or ???

Clearly this is an intentional misrepresentation of important facts. FYI Snug Harbor is a permitted marina and RV park and has been in existence since the 1940's but the name was Martin's Island until the 1960's. DWR knows this, so what is the purpose of providing the false information for the BDCP EIR/EIS?

15-12. Recreation

1 **Hidden Harbor Marina**

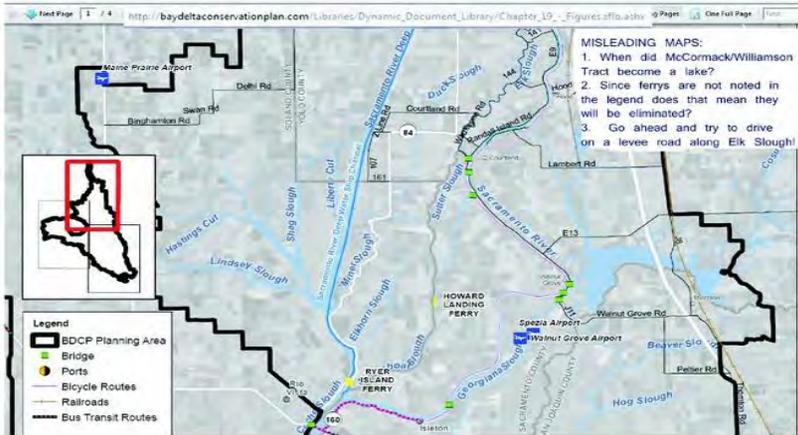
2 Hidden Harbor Marina is an all-sailboat facility located at the junction of Cache and Steamboat
3 sloughs, just west of the Alternative 1C canal alignment. Vehicular access to the marina would be
4 maintained using SR 84 or a detour. Traffic levels on SR 84 may increase because of construction.
5 On-water access to the marina would also be maintained, and use of the marina's boating facilities
6 would not be affected by construction. Boating opportunities would still be available at the marina
7 during canal tunnel construction; however, the recreation experiences of marina users may be
8 affected by construction activities. Construction activities in Steamboat Slough would not be visible
9 to marina users. Marina users may be able to hear construction noise, however, which could

10 Table 15-12 lists the recreation sites that fall within the construction right-of-way, within the CPA,
6 or are within 1,000 feet of the CPA limits. Specific effects are discussed below. See Chapter 17 Visual
7 Resources and Chapter 27 Noise, for additional visual-and noise-related effects on recreationists.

9 **Table 15-12. Recreation Sites Potentially Affected during Construction of Alternative 1C**

Sites in the Right-of-Way	Sites in the CPA	Sites within 1,000 Feet of the CPA Limits
Numerous Marinas or Houses with Docks	Cliff's Marina	Clarksburg Marina
Twitchell Island	Clarksburg Fishing Access	Stone Lakes NWR
	Arrowshead Harbor	Vieira's Resort
	Hidden Harbor Marina	New Anchor Marina
	Cliffhouse Fishing Access	Hemis Marina
	Jersey Island	Sunset Harbor
	Bridgepoint Marina	San Joaquin Yacht Club
	Viking Harbor	Wood's Yacht Harbor
	Harris Marina	Greg's Harbor
	Sea Horse Marina	Carol's Harbor
	Orwood Resort	Sam's Harbor
	Clifton Court Forebay	Rivers End Marina
	Lazy M Marina	Twitchell Island
	Twitchell Island	Jersey Island

Source: Compiled by DHCCP in 2010.

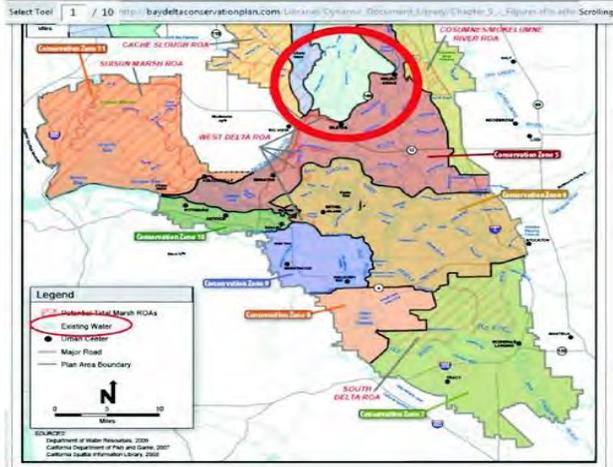


No comments

- n/a -

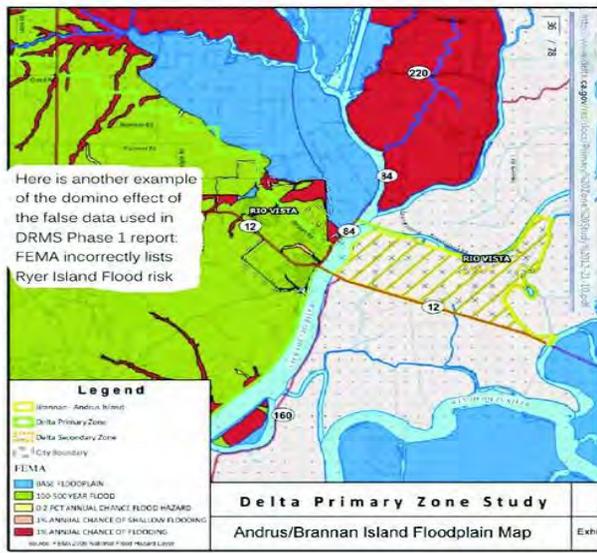
Another example of a misleading map from BDCP:
The map key says the blue color is "existing water"

Last time we looked out the window Ryer Island was not
A lake and neither was Grand, Sutter or Merritt Islands.



DRAFT

Figure 9-1
Restoration Opportunity Areas



Note that the above BDCP map was based on a FEMA map that was based on false Ryer Island flood history which FEMA was provided by DWR as part of the DRMS Phase 1 technical studies.

No comments
- n/a -



No comments

- n/a -

December 27, 2011

Benjamin Carter, President, Board of Directors, Central Valley Flood Protection Board jpendleb@water.ca.gov
Jay Punia, Executive Officer, CVFPB jpunia@water.ca.gov
Len Marino, Chief Engineer, CVFPB marino@water.ca.gov
David Williams, Sr. Engineer, Flood System Improvements Section davidw@water.ca.gov

Printed copy mailed to

Board of Directors, Central Valley Flood Protection Board
3310 El Camino Avenue Room 151
Sacramento, CA 95821

Central Valley Flood Management Planning (CVFMP)
KerouAcroj, Chief, Merritt Rice, Project Manager
Department of Water Resources
P.O. Box 942836
Sacramento, CA 94236

Melinda Terry, Executive Director, Central Valley Flood Control Association and
NDWAMelinda@northdw.com

& Gary Kienlen, MBK Engineers kienlen@mbkengineers.com

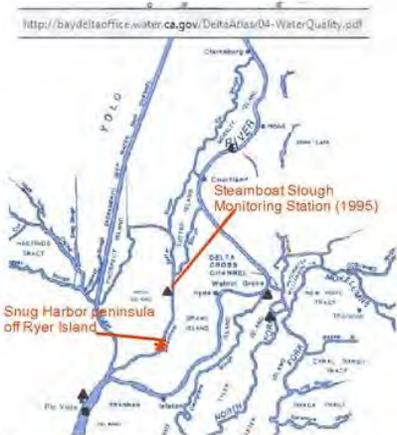
Dear CVFPBoard:

This letter is written to request review and revision of the proposed flood control plan for select locations within the Delta region, with a focus on the proposed flood flow capabilities for Steamboat Slough, between river miles 15 to 26, as shown on the CVFMP map, from the State Plan for Flood Control¹. "Public safety is the top priority for the CVFPB" according to your website, so you appear to be the ones to address a potential public safety issue due to the proposed flood flow design capability of Steamboat Slough, Sutter Slough and the Main Stem of the Sacramento River, as shown in current documents online. Below is a map of the area of the Delta that is the topic of my concern, which is flow on Steamboat Slough and the effect of that flow on the landowners of Snug Harbor.

¹<http://www.water.ca.gov/cvfmp/docs/SPFCDescriptiveDocumentNov2010.pdf>

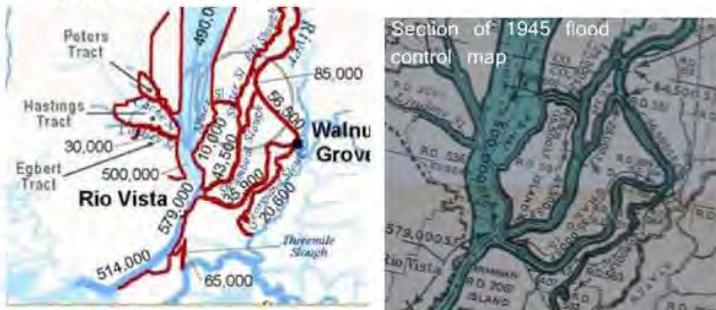
No comments

- n/a -



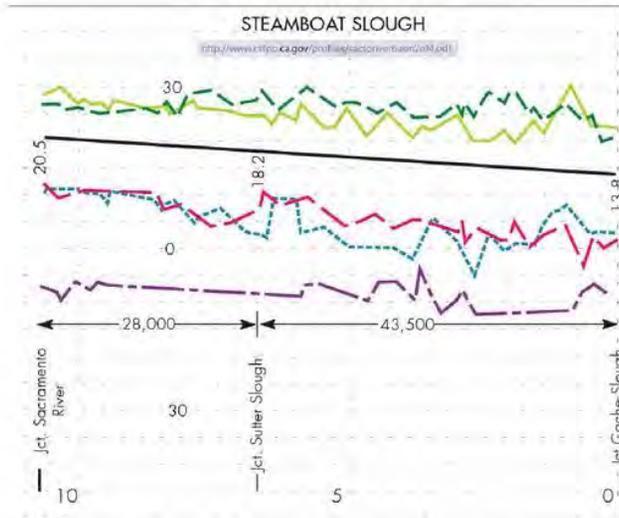
Location of Snug Harbor on Steamboat Slough

Snug Harbor is a peninsula off Ryer Island, on Steamboat Slough about river mile 17.5. (Solano County 1961 survey map refers to the land as Martin's Island)². The SPFC indicates 43,500 cfs flood capacity flow for Steamboat Slough, the same flow as proposed in the 1945 Sacramento River Flood Control Project. However, the 1945 plan assumed Steamboat Slough would be maintained at a much deeper depth than it is today; no dredging of the silt has been done since 1977 according to local records. **Based on observation and experience over 14 years of ownership of property on Steamboat Slough, I believe the flood flow capacity of Steamboat Slough is more in the range of 15,000 cfs to 20,000 cfs total.**



Note how the section of the 2011 draft flow map (left) matches the 1945 Sacramento River Flood Control Project map of the same area. (right)

²http://snugharbor.net/historic_steamboat_slough.htm



This graphic shows an estimated profile for Steamboat Slough that does not appear to account for current channel margin changes observed summer 2011.



In addition, the riparian restoration project off Grand Island south of Snug Harbor, combined with the levee toe & restoration project on the opposite side of Steamboat Slough, along Ryer Island, at about river mile 16.5, are creating a "bottle neck" effect that further causes back up of water flow onto Snug Harbor. If you consider flood water exiting Steamboat Slough as an important flood control "structure" then the importance of the continued water flow restriction in this area becomes more clear, as it is a known fact that sedimentation upstream from flood control structures obstructs flow and reduces capacity. The turbidity or particles in the water settle to the

No comments

- n/a -

bottom if the velocity of flow is slowed, thereby causing more silting in or raising of the slough bed, further reducing flood flow capacity.

In addition, the *reduction* of flow during summer and fall appears to have created an environment where the invasive aquatic plant species like egeria densa has flourished greatly along both sides or banks of Steamboat Slough for the entire length of the slough. Both the egeria densa infestation and the expansion of the tules on the growing sandbars will create further water flow hindrance, which further reduces flood capacity on Steamboat Slough. Basically, Steamboat Slough is receiving too much flow during high water times, and not enough fresh water flow during the summer and fall months.

Another problem has been the extreme ebb and flood tides on Steamboat Slough during the "fish studies" of the last few years. The "pulse flows" on Steamboat Slough from January through May, particularly in 2011, have been washing away the banks of Snug Harbor, especially the area at the north end of the peninsula, which is the sole access road for the 28 private home parcels and resort property which comprise Snug Harbor. (see photo on page 3 to locate north end of road) I do not know why the pulse flows of 2011 would cause so much erosion damage to the Snug Harbor banks, but they did.

For example, February through May 2011 we noticed sections of north bank along Snug Harbor Drive were washing away during the times when the extreme ebb and flood tides were present. I contacted Solano County public works and the representative for Reclamation District 501, Ryer Island. Several times we had to place sandbags along the banks. By April 2011, the road bank at the north end of Snug Harbor Drive had eroded to the edge of the pavement, and in one area had eroded as much as three feet under the pavement. We had to add substantially more sandbags, and I again contacted Solano County and Reclamation District 501 office, since if our road completely washed away, it could threaten the levee in that area as well. I also contacted the California Flood Control representative, as advised by



501 representative and Solano County office of Emergency services. By early May 2011, the road pavement was cracking and it looked like we could lose at least a quarter of the width of our one-lane road, which could cause risk to persons using the road, especially large emergency vehicles and large recreational vehicles. I contacted Solano County, Fish & Game and RD 501, but no one could provide assistance. In order to make sure the road



No comments

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would not continue to erode (which might cause a risk hazard), I had "riprap" rock placed along the bank of the road, at low tides, over a two day period. A crane with a long arm was used to place the rock carefully so as to minimize water disturbance. I was not able to recapture the full width of the



washed out bank, but the riprap did stop road erosion. I also had riprap placed on the inside curve of the road, as the excess flows on Steamboat Slough had been backing into Snug Cove and eroding the road bank on the inside curve as well. Costs to protect from road bank erosion exceeded \$54,000 in spring 2011.

In addition, several sections of our bank within the park grounds experienced substantial erosion and we lost some very tall and healthy trees that fell into the water due to bank erosion during the extreme ebb and flood flows that seemed to coincide with DCC closure and fish "pulse flows". The cost of cutting up and hauling out the trees was in excess of \$1500 each.

In addition, I have been collecting the historical records of "high water" events at Snug Harbor (Martin's Island) since the property was developed into a marina, RV park and private home parcels starting in the early 1940's when it was reconfigured into a peninsula under written agreement with state & federal authorities at that time, as recorded with resort parcel. (The island was purchased from the state in a land patent recorded 1878) Many of the original home owners along Snug Harbor Drive still have the properties in the same family, and some of seasonal visitors to the resort have been coming here since the 1950's. Written records show that from 1945 to 1996 the only incidents of flooding any portion of the lands of Snug Harbor coincided with major floods Delta-wide: 1955/56, 1962, 1973, and 1986 were the years where flood waters came onto portions of Snug Harbor Drive, at least 6 inches deep, for at least 1 tide cycle. Five "high water" events over a 56 year span, each of which coincided with area-wide high water flow, indicates an average of once per every ten years the park should plan for flood clean up expenses.

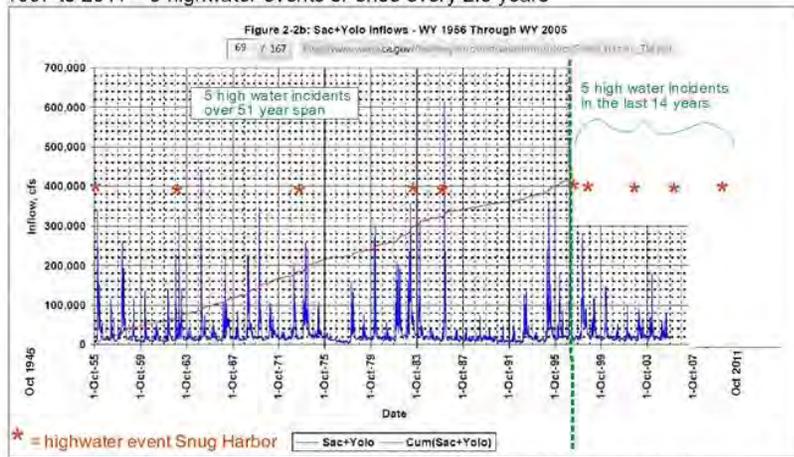
However, from 1997 to spring of 2011, a span of 14 years, we have experienced high water events at Snug Harbor in 1997, 1998, 2002/2003, 2006 and spring 2011. **That is a new average of high water events every 2.8 years over a span of just 14 years!** Some of the high water incidents of the last 14 years have NOT coincided with high flow and precipitation levels on the Sacramento watershed system. Since other areas of the Delta have not had a similar increase in high water incidents, there must be a reason the state is sending excess flows onto Steamboat Slough at specific intervals, even during "dry" or low precipitation winters. The chart below was made by

No comments

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combining DWR Sacramento River + Yolo Bypass inflows for 1956 through 2005³ with the local Snug Harbor documented incidents of high water on Snug Harbor Drive, 1956 through spring 2011, to graphically show the substantial increase in high water incidents over the last 14 years, which did not necessarily correlate to system-wide excess water flow.

1945 to 1996 = 5 highwater events or once every 10 years
 1997 to 2011 = 5 highwater events or once every 2.8 years



Note: Steamboat Slough/Snug Harbor highwater events added to DWR chart of historic flows

No comments

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Note that I've been onsite for most of the high water events of the last 14 years. Photos to the left are from the 2006 high water event, where we had up to 12" of water onsite, and from 2011, where a portion of Snug Harbor Drive was affected. I've observed that it is not fast-flowing water that invades the peninsula land, but instead we see a slow rise of the water, like filling a bath tub, as the flow from Cache Slough backs up into Steamboat Slough, and the water flowing down Steamboat Slough gets trapped by the bottleneck around river mile 17 to 18, or blocked by the flow of Cache Slough.

³http://www.water.ca.gov/floodmgmt/dsmo/sab/drmsn/docs/flood_hazard_TM.pdf page 69 or 167.

Clearly, there has been some change in how flow is directed onto Steamboat Slough in the last 14 years. Clearly, flow *capacity* of Steamboat Slough is declining as the slough bed is allowed to continue to silt in and restoration projects create further flow hindrances, all of which increases the average incidents of high water at Snug Harbor during winter or early spring months. It does not appear that the current proposed flood control plan for this area takes into account the above when calculating channel flow flood capacity.

(In addition, I've noted a pattern whereby closure of the Delta Cross Channel gates tends to increase flow on Steamboat Slough, and higher water flow seems to coincide with the "fish studies" regarding salmon and smelt runs, so perhaps when the fish agencies stop doing the studies, the flow issues will also cease?)



Note that the resort infrastructure was upgraded over the last 10 years to make sure we are ready and able to withstand the high water events, but that does not mean we are willing to be intentionally flooded for fish studies, Yolo Bypass annual inundation experiments, or water diversion for other reasons. State flow experiments for fish or export studies should not be allowed to negatively affect private land owner use, even if the properties are able to withstand the more frequent high water incidents. The state does not compensate for the repairs and clean up

costs, nor loss of revenue, when all of us on the Snug Harbor peninsula experience high water events due *not* to natural disasters, but due to the state water flow manager's intentional diversion of excess water into Steamboat Slough for studies and other non-natural disaster purposes.

I firmly believe the damage to Snug Harbor road and banks noted above is due to the state's assumption that Steamboat Slough flow capacity is higher than current physical configuration and experience shows, for the above reasons. I have expressed these same concerns to several DWR representatives since 2008, but my concerns have been ignored. I therefore specifically request that the following actions be considered by the CVFPB in conjunction with the SPFC study:

- (1) That a new monitoring station for flow, water level and salinity be installed and maintained on the lower end of Steamboat Slough between approximately river mile 16 to 17; all data shall be reported online through the state website⁴ and costs for installation, maintenance and monitoring shall be borne by DWR or the state water contractors;
- (2) that the stated flood flow capacity of Steamboat Slough be reviewed and reduced to a reasonable, prudent level to protect land owners along the waterway;
- (3) that the state consider removal of the restoration project(s) that hinder flood flow capacity of Steamboat Slough;

⁴<http://www.water.ca.gov> on the "dayflow" page or other page accessible to the general public.

No comments

- n/a -

- (4) that the entire length of Steamboat Slough be dredged to the 1977 depth if the state plans to continue to allocate so much flood water flow to Steamboat Slough;
- (5) that Ryer Island and Grand Island be closely inspected during one of the extreme low tides (if its not already done) so that the areas where the soil under the levee rocks are being undermined will be noted, and repaired, (at least 5 areas along Ryer Island levee adjacent to Snug Cove need attention and repair);
- (6) that funding be provided to the Department of Boating and Waterways in sufficient amount to eradicate flow-hindering invasive species, including egeria densa, along all banks of Steamboat Slough and the Main Steam of the Sacramento River;
- (7) that a fund be set up, paid by the water exporters, administered by NDWA, to compensate Steamboat Slough property owners and other NDWA landowners for damages caused by restoration projects and any "fish studies" made necessary due to ongoing and planned revision of water exports from the Sacramento River system, and that DWR, USBR and state water contractors assume all liability for damages to property and persons caused by the ongoing revisions to flows on Steamboat Slough and any other lands affected with the legal Delta region;
- (8) and I also request that if any more "fish studies" or other experiments affecting flood flow are conducted on Steamboat Slough, which result in damage to resort property, that funding be available to cover the cost of all such damage. Damage control funding should be included as part of the budget of the flow-affecting studies.

If you have any questions regarding any of the above, please email me at sunshine@snugharbor.net. For full copies of the maps referenced in this letter, please go to http://snugharbor.net/california_delta_water_wars.html or follow the links starting from <http://www.snugharbor.net>

Respectfully submitted,

Nicole (Nicky) Suard, Esq. (Submitted by email)

Nicole S. Suard, Esq., Managing Member, Snug Harbor Resorts, LLC

Cc: Robert Powel, Solano County Emergency contact.

Neil Hamilton, President, RD 501 District Office 3554 St. Highway 84, Walnut Grove Ca 95690
(916)775-1411

No comments

- n/a -

No comments

- n/a -

Attention: Ms. Delores Brown, Chief
Office of Environmental Compliance, Department of Water Resources
PO. Box 942836
Sacramento, CA 94236

Sent by email to: BDCPcomments@water.ca.gov

March 13, 2009

This letter is written to provide comments regarding the scope of the EIR/EIS for the Bay Delta Conservation Plan.

1. General comment: The whole notice is written so broadly that it could include almost anything anyone in BDCP would want to say is included as part of the notice; it is not specific enough regarding which properties or areas of California, which lie within the legal Delta region, will or will not be affected. This, therefore, makes it very difficult for individual property owners within the Delta (those who are or will be most negatively affected by decisions of the BDCP) to know what might or might not impact them, and to know if comments should, or should not be submitted.
2. Notice to land owners within the Delta: as all land owners within the Delta region will or may be affected by the decisions made by the BDCP during the EIR/EIS process, all land owners should receive written notice of the process and also receive written documentation which clearly states with words and visual aids like maps and charts the facts and anticipated results. If the BDCP is not equipped to provide such notice, the counties with lands affected by the BDCP EIR/EIS should be charged with the responsibility to send out legal notice to land owners. Government agencies can not assume all farmers, home owners and businesses in the Delta have access to the internet to be able to print out or read related documents. At the very least, hard copies of all stages of documentation, including all referred reports, should be provided to the city or chamber of commerce offices of each Delta town, or to the reclamation offices for the islands, and notice sent to land owners that documentation is available for viewing. Other locations in the Delta could also be designated as a documentation viewing site for local land owners, so that all those who do not have access to the internet could at least review copies at a location more convenient to their homes and businesses.
3. Setting limits: (#8, page 5: Planning Goals and page 8, #6) All natural resources have limits. Since the state's current water system cannot meet the demands it has now, all state water agencies should be directed to not accept any *new* water contracts that would *increase* demand for water from the Delta region, including the Sacramento and San Joaquin Rivers. There should be no new water contracts allowed until such time as the conflicts between demand vs supply,

No comments

- n/a -

environmental impact vs conveyance, is resolved. And as reductions are required, the Delta region, and those with historic/deeded riparian water rights should be the last area to be impacted by limits when enforcement.

4. **Balancing Potential Environmental Effects:** (Page 8, item 10) against Land Use & just compensation: Land owners within the legal Delta should not be limited in use of their property in order to provide for the benefit of land owners in other areas of the state, without just compensation. Creating excessive limits on existing Delta land use or future development (including existing riparian water rights) is, in effect, attempting to exercise a form of eminent domain over the Delta properties without just compensation. When analysis of land use is made, compensation for limited current uses as well as lost future land values should be considered as a part of the cost of the overall project. Perhaps a specific formula could be developed to avoid excess litigation between Delta land owners and the state or BDCP. For example: For farm lands, determine the market value per acre using 2005 sales, plus add future value for at least a 10 year period of loss of income, to determine the compensation to the farmer if his/her land is or will be negatively affected by the take of water or institution of mitigation measures in trade for the take of water elsewhere in the Delta. For commercial or retail businesses that may be negatively impacted by decisions of the BDCP or DWR in their effort to increase water take from the Sacramento River, a similar formula could also be used, except that capital improvement costs assumed with commercial businesses warrant use of 20 or more years of loss of income calculations. In addition, the state could make special provisions that the state will waive state capital gains taxes on sales to the state or conservation agencies or nonprofits, if such property sale is directly related to conservation efforts for the benefit of the State of California and its population. Note that I suggest the base year of 2005 for valuations because after that year BDCP and DWR reports and activities may have already begun to negatively impact normal land values in the Delta area.
5. Environmental issues related to Steamboat Slough and other sloughs listed in draft BDCP documents: (Page 8, items #5,6 and 10) Various draft documents and maps from the BDCP refer to potential restoration actions suggested for Steamboat, Miner and Sutter Sloughs and the Yolo Bypass area. As the EIR/EIS is prepared, please note that Steamboat Slough in particular can be negatively impacted by actions taken on the Yolo Bypass regarding backup of water flow, and that increase in salinity of the fresh water on Steamboat Slough may negatively impact the beautiful shady banks or riparian habitat found naturally on these sloughs. In addition, preliminary studies or documents seem to indicate an assumption that boat wakes cause damage to levees, but there is no study comparing the damage caused by the waves of winter and wind storms. Prior to boating being limited on any current or historically navigable waterway in the Delta, a study must be conducted to verify it is the boat wakes, not naturally occurring wind and storm waves, actually causing most of the levee or bank damage. If large "no wake" zones are established in the Delta, as some draft maps suggest, clear enforcement measures and ongoing enforcement funding must also be determined at the same time. In addition, the economic effect on the community and land owners affected by the decision to limit boating in a specific area of the Delta should be considered, and just compensation provided to the affected land owners based on current and future loss of value. (Comments

regarding limiting motorized boating apply to all areas of the Delta; the above sloughs are used as a specific example because draft documentation refers to these sloughs.)

Thank you for consideration of my concerns. If documentation review locations are determined to be a benefit for the community in this process, I am volunteering the office at Snug Harbor as a viewing site during normal business hours, for residents of Ryer Island , if our reclamation district office is not available as a document viewing site.

Respectfully submitted:

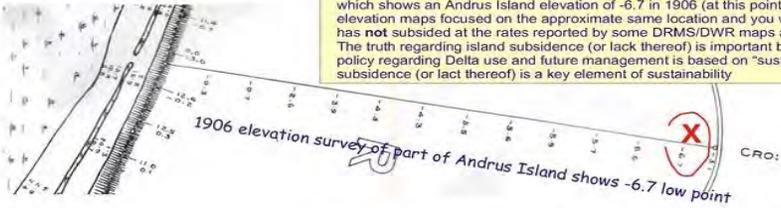
Nicole S. Suard, Esq., Managing Member, Snug Harbor Resorts, LLC
916-775-1455 sunshine@snugharbor.net

No comments

- n/a -

**COMPARING ELEVATION MAPS
1906 TO 2007 Focus: Andrus Island**

The first graphic below is a section of sheet 9 of the 1906 official survey of the San Joaquin River for a report to the U.S. Congress. The red "X" was added to show location on Andrus Island on other maps below and on page 2. Compare this map, which shows an Andrus Island elevation of -6.7 in 1906 (at this point) with other elevation maps focused on the approximate same location and you will find this area has **not** subsided at the rates reported by some DRMS/DWR maps and studies. The truth regarding island subsidence (or lack thereof) is important because public policy regarding Delta use and future management is based on "sustainability" and subsidence (or lack thereof) is a key element of sustainability



A section of this 2001 Elevation Map shows the same area of Andrus Island as -5 to -10 feet, or Less. At most, this shows an elevation change from 1906 to 2001 of -3.3 at the lowest point.



Here is an enlargement of the 2007 DWR/URS map which most observers would assume indicates this area of Andrus Island is -25 to -10 feet, which does not match any other elevation records found so far, and in fact inflates the elevation data a minimum of -2 feet and a maximum of -17 feet. See Attachment called 2007_DWR_Subsidence.pdf for full map



This 2007 is a section of the Fish & Game Yolo Bypass elevation map, which used increments of 2 feet. It did not cover the Andrus Island focus point, but comparison of land levels on Grand and Brannen would indicate -8 to -4 elevation but certainly not the "-25 to -10" as indicated by the 2007 DWR maps!

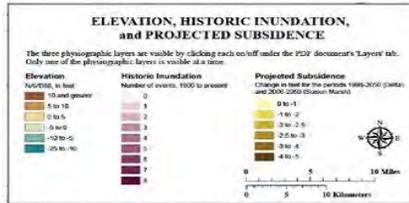


No comments

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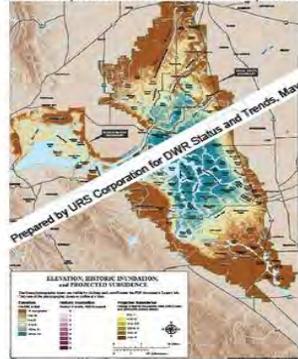
HOW MANY WAYS CAN A MAP BE WRONG?

The DWR 2007 Elevation, Historic Inundation and Projected Subsidence map (small size below) reports **WRONG** data for historic inundation and elevations, as shown the previous sheet. It also uses confusing map key increments for no known or explained reason. It is an interactive map found online that looks impressive but uses incorrect underlying data to produce the various maps depending on the selections made by the viewer. (Full map in pdf provided as separate attachment, called '2007_DWR_subsidence.pdf'). Here are three examples of how the data and map are wrong:



No comments

- n/a -



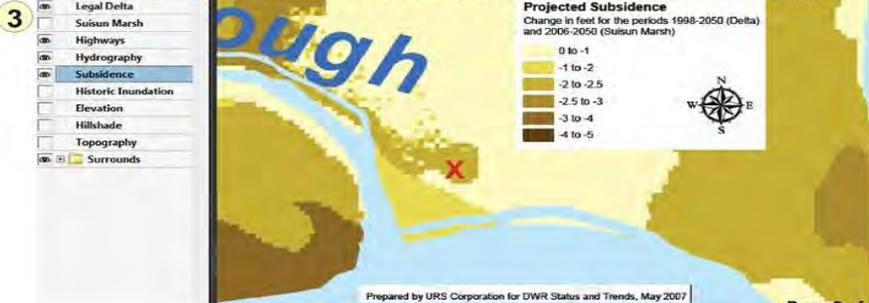
1 URS combines the records of 3 islands and reports it as a single island, thereby inflating the actual totals of all 3 islands. This is just one example.



The map key uses increments of 5 feet, then jumps to 15 foot increment, and based on other elevation maps its not correct anyway. The data is available in increments of 1-2 feet or less. Why not provide that data?



When you ask for subsidence information, you get the "projection" for future subsidence, not the facts. However, the subsidence information for each island is known. Why isn't this provided and why is the map misleading?



Comment:

Reference information listed with the 2007 DWR/URS map which displays incorrect data for Delta Island Inundation History and current elevations. The logical assumption is that if the underlying data regarding historic flooding is wrong, and the underlying data regarding elevation changes over time is wrong, then most likely the projected subsidence map is also wrong. In any case, Mr. Dudas of DWR is aware of the data inconsistencies regarding island inundation histories, at a minimum, and says the data will be corrected and posted at DWR website.

No comments

- n/a -

**METADATA FOR ELEVATION, HISTORIC INUNDATION,
AND PROJECTED SUBSIDENCE**

Elevations

Title: Elevations in the Delta-Suisun region
Source: USACE (NAVD 85, sheet, March 2002) for the Delta and LIDAR (NAVD85, feet, September and October 2005) for Suisun Marsh
Date: 2002-2005
Contact: Sarah Lewis, URS Corporation
sarah_lewis@urscorp.com

Historic Inundation

Title: Historical inundation of islands in the Delta region 1900 - Present
Source: URS Corporation 2006. Island inundation data provided by Joel Dudas of DWR to URS Corp (12 Jan 2006)
Date: 02-2007
Contact: Sarah Lewis, URS Corporation
sarah_lewis@urscorp.com

Projected Subsidence

Title: Delta region projected subsidence 1998-2050 and Suisun Marsh projected subsidence 2006-2050
Source: Supplied to URS by Dave Lagarias of Hydrobosc (Jan 2007)
Date: 2007
Contact: Sarah Lewis, URS Corporation
sarah_lewis@urscorp.com

Legal Delta

Title: Legal Delta boundary version 2002.4 - delineates the legal Delta established under the Delta Protection Act (Section 21229 of the Water Code) passed in 1992
Source: DWR's Delta Lewis Program
Date: 04-2002
Contact: Joel Dudas, DWR

Status and Trends of Delta-Suisun Services

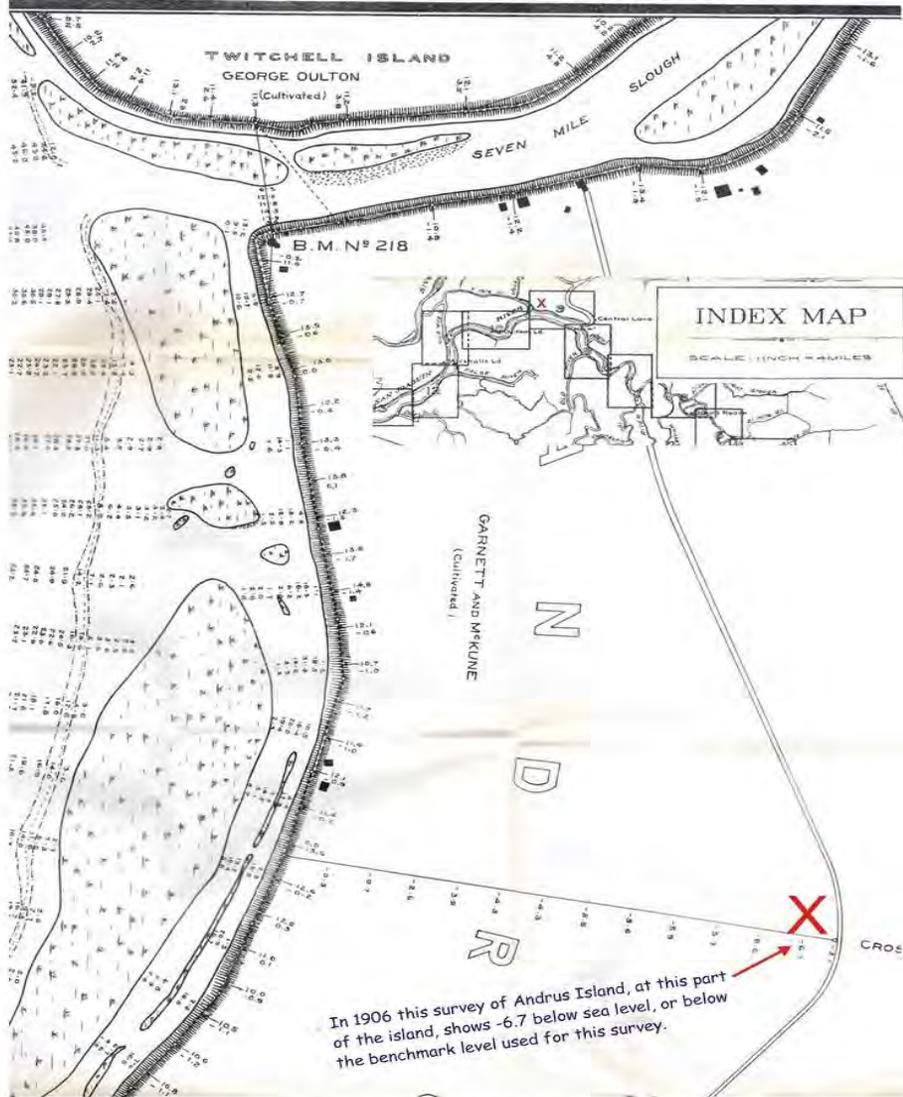
Suisun Marsh

Title: Suisun Marsh boundary
Source: "Suisun Marsh Protection Plan Map" published by San Francisco Bay Conservation and Development Commission in December of 1976
Date: Paper - 1976, Digital - 2006
Contact: Amy Keeley, URS Corporation
amy_keeley@urscorp.com

Scan of one section of sheet 9 of the 1908 survey of the San Joaquin River, including island elevations. This full size scan is provided as an example of the information that is available to DWR and scientists, so why not provide the data to the public so others can assess for themselves the facts regarding Delta island subsidence?

No comments

- n/a -



This review of Sacramento San Joaquin Delta elevation maps was compiled by N. Suard for review of the Delta Stewardship Council, June 2010 meeting

ATTACHMENT-N COMMENTS ON DELTA PLAN Prior to 2010 the Real McCoy Ferry saw peak traffic of about 700 vehicles per day

No comments

- n/a -

TechnicalStudies.pdf (application/pdf) Caltrans, Traffic Operations Progr... x

District	Route	County	Post/Mile		Description	Back		
			Prefix	Mile		Peak Hr	Peak Mo	AADT
http://www.dot.ca.gov/hq/traffops/saferes/trafdata/2002all/r082-86i.htm								
4	04	ALA			(BREAK IN ROUTE)			
4	04	ALA	R	17.99	NORTH JCT. RTE. 880			2650 25000 24000
4	04	ALA		24.36	VINEYARD AVENUE	1700	20900 20100	1700 21500 20700
4	04	ALA		24.72	WETMORE ROAD	1700	21500 20700	1750 22500 21700
4	04	ALA		25.24	ALDEN LAKE	1750	22500 21700	1850 24500 23600
4	04	ALA		26.91	LIVERMORE, STANLEY BOULEVARD	1800	24500 23600	2050 23500 27500
4	04	ALA		27.37	LIVERMORE, ARROYO ROAD (L STREET)	2050	27500 26900	2080 27500 26500
4	04	ALA	R	27.76	LIVERMORE, 2ND/ST. STREETS	2750	37000 36000	2000 37500 36500
4	04	ALA		28.05	LIVERMORE, PORTOLA AVENUE	2050	36500 35500	3000 40000 39000
4	04	ALA	R	29.71	LIVERMORE, JCT. RTE. 580	3650	49000 47500	
4	04	ALA			(BREAK IN ROUTE)			
4	04	SOL			SOLANO COUNTY			
4	04	SOL		9.13	RIO VISTA, JCT. RTE. 12			230 2700 2500
4	04	SOL		9.91	ARROYO ROAD	190	2100 1950	1400 1300
4	04	SOL		49	CACHE SLOUGH FERRY	70	710 670	25 240 230
4	04	SOL		7.25	JCT. RTE. 220 EAST	15	160 150	30 310 250
4	04	SOL		12.08	MINER SLOUGH BRIDGE/RYER ROAD	35	360 280	40 390 300
4	04	SOL		13.67	SOLANO-YOLO COUNTY LINE	90	500 410	
3	04	YOL		0	SOLANO-YOLO COUNTY LINE, COUNTY ROAD 161			
3	04	YOL		4.57	COURT AMPHIBIOUS FERRY	70	710 670	25 240 230
CACHE SLOUGH FERRY								
3	04	YOL		18.04	WEST SACRAMENTO, DAVIS ROAD	190	1400 1200	190 1700 1600
3	04	YOL		18.62	WEST SACRAMENTO, HARMON ROAD	440	3600 3500	750 7100 6700
3	04	YOL		19.65	WEST SACRAMENTO, LINDEN ROAD	760	7100 6700	1900 19500 17200
3	04	YOL		19.85	WEST SACRAMENTO, ARLINGTON ROAD	1900	16000 17200	2000 20100 17900
3	04	YOL		20.2	WEST SACRAMENTO, DEVON ROAD	2040	20200 17900	2100 20400 17900
3	04	YOL		20.9	WEST SACRAMENTO, STONE BOULEVARD	2350	23700 20500	1950 19900 16900
3	04	YOL		21.37	WEST SACRAMENTO, 15TH STREET	2000	20400 17900	2150 23300 19000
3	04	YOL	R	21.76	WEST SACRAMENTO, JCT. RTE. 50	2050	23900 20000	2500 27500 26000
3	04	YOL		21.84	WEST SACRAMENTO, JCT. RTE. 275 EAST	2550	27500 26000	1500 16000 15400
3	04	YOL		22.06	WEST SACRAMENTO, WEST CAPITOL AVENUE	2100	22500 21400	2050 21000 20200
3	04	YOL		22.5	WEST SACRAMENTO, TRIANGLE COURT/F STREET	2000	20000 19400	1950 20000 20200
3	04	YOL		22.68	WEST SACRAMENTO, KEGLE/SACRAMENTO AVENUES	1950	22000 20200	1650 15300 15100
3	04	YOL		23.47	WEST SACRAMENTO, SUNSET STREET	1400	13000 12900	1250 11700 11100
3	04	YOL		21.67	WEST SACRAMENTO, HARMON ROAD PLAZA	1540	11700 11100	1700 17400 16300

No comments

- n/a -

Flood map inconsistencies

September 2, 2008

Comparative study of the data and sources used for the Delta Vision Plan, specifically the studies regarding flooding and seismic activity protections. **DRAFT**

Information compiled by Nicole, S. Suard, Esq., Snug Harbor Resorts, LLC for discussion purposes until written verification is received.

Preliminary findings to be verified:

1. **There are two islands named Ryer located in Solano County.** One island is located in the Suisun/Grizzley Bay area and the other is borderer by Cache and Steamboat Sloughs. The duplication of island names may have led to inadvertent incorrect application of data regarding one island applied to the other island.
2. **Seismic activity reports:** Some of the reports referenced by the Delta Vision use data regarding Ryer Island in the Suisun/Grizzley Marsh area, yet apply the same data to the OTHER Ryer Island off Steamboat Slough, contrary to similar governmental reports.
3. **Flood hazzard reports:** Flood hazzard map data does not appear to match reports regarding risk of flood activity in the Delta for the Steamboat Slough Ryer Island area, based on records of actual floods over the last 100+ years.

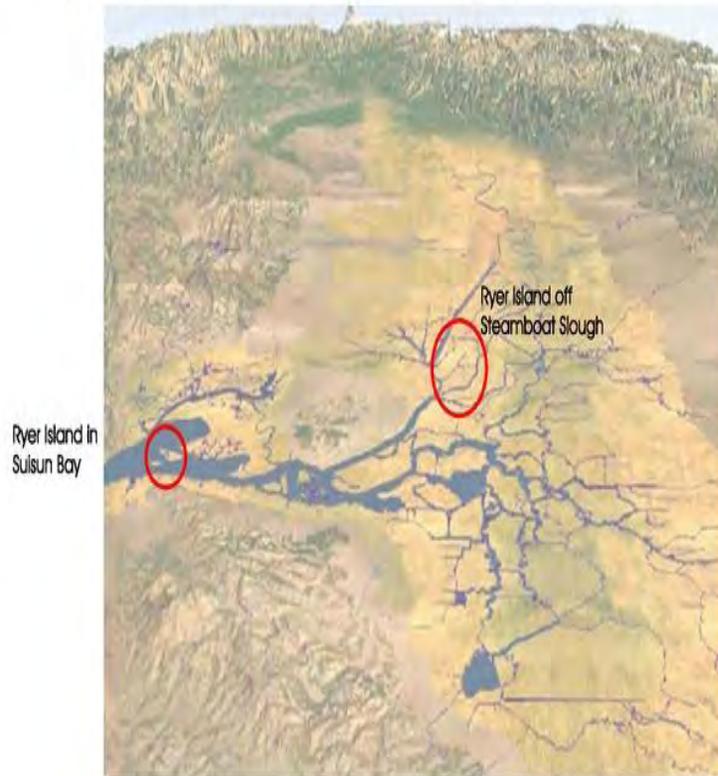
Why is this important now?

Decisions regarding the future of the island of the Delta are under discussion. Decisions should be made based on accurate information in all cases. Since it appears at least some of the data for one island was transposed to the other island, it makes sense to take the time to verify the information is correct prior to making final decisions regarding either of the Ryer Islands in Solano County.

No comments

- n/a -

According to local records, Ryer Island in the Suisun Bay has flooded, but Ryer Island off Steamboat Slough does NOT have flooding records over the last 100 years.



Two Ryer Islands in Solano County

Ryer Island in Grizzley Bay/Suisun area
Ryer Island off Cashe Slough and Steamboat Slough

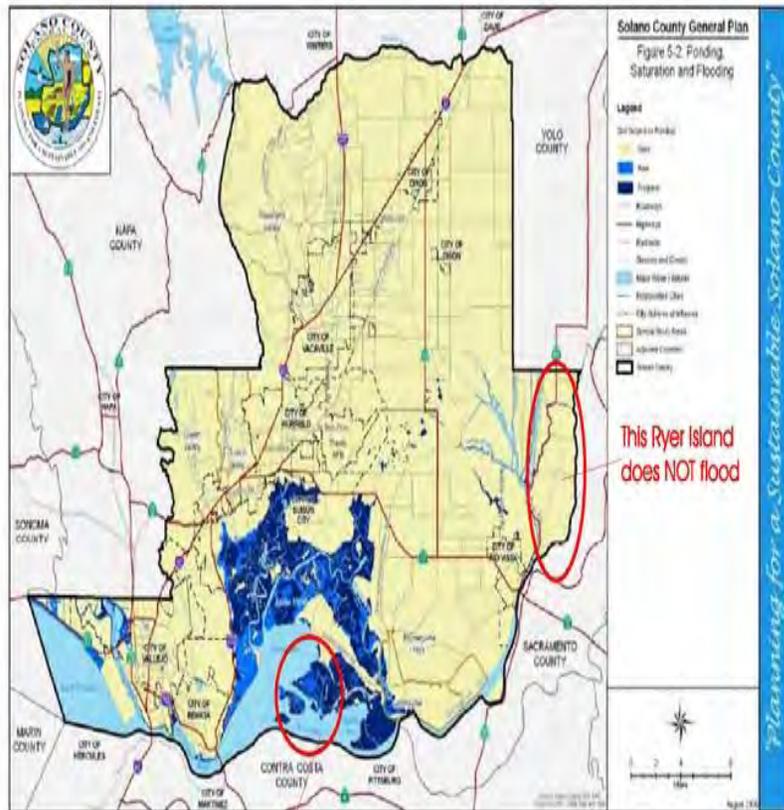


No comments

- n/a -

No comments

- n/a -



Floodprone Areas in the Central Valley



<http://www.water.ca.gov/news/newsreleases/2008/101507challenge.pdf>

The area shown at risk on this map is subject to change, and will likely increase.

This map is based on existing FEMA data.

Levee stability analyses have not been completed for significant areas of the Central Valley.

Flood risk analyses have not been completed for significant areas of the Central Valley.

Ryer Island off Cache & Steamboat Slough is NOT "Floodprone" based on the most recent maps available

No comments
- n/a -

Table B.1 – Summary of Annual Failure Probabilities for Delta Islands

Zone	NAME	Flood	Seismic	Flood + Seismic	Flood PL 84-99	PL 84-99 Flood + Seismic	PL 84-99 Raise Flood	PL 84-99 +1 Raise Flood + Seismic
Central	Bacon Island	0.04	0.02	0.06	0.04	0.06	0.03	0.05
Central	Bouldin Island	0.06	0.03	0.09	0.05	0.08	0.05	0.08
Central	Empire Tract	0.04	0.02	0.06	0.04	0.06	0.03	0.05
Central	Mandeville Is.	0.04	0.03	0.07	0.04	0.06	0.03	0.06
Central	McDonald	0.02	0.03	0.05	0.02	0.05	0.02	0.05
Central	Medford Is.	0.03	0.02	0.05	0.03	0.05	0.02	0.04
Central	Quimby Island	0.04	0.03	0.07	0.04	0.06	0.03	0.06
Central	Rindge Tract	0.01	0.02	0.03	0.01	0.03	0.01	0.03
Central	Venice Island	0.07	0.04	0.11	0.06	0.10	0.06	0.09
Eastern	King Island	0.01	0.01	0.02	0.01	0.02	0.01	0.02
Eastern	Terminous	0.04	0.01	0.05	0.04	0.05	0.03	0.04
Eastern	Wright-Elmwood	0.01	0.01	0.02	0.01	0.02	0.01	0.02
Northern	Brack Tract	0.04	0.01	0.05	0.04	0.05	0.03	0.04
Northern	Canal Ranch	0.04	0.02	0.06	0.04	0.06	0.03	0.05
Northern	Dead Horse	0.03	0.01	0.04	0.03	0.04	0.02	0.03
Northern	Grand Island	0.02	0.05	0.07	0.02	0.07	0.02	0.07
Northern	Bethel Island	0.04	0.04	0.08	0.04	0.07	0.03	0.07
Northern	Ryer Island	0.02	0.03	0.05	0.02	0.05	0.02	0.05
Northern	Staten Island	0.04	0.03	0.07	0.04	0.06	0.03	0.06
Northern	Tyler Island	0.04	0.05	0.09	0.04	0.08	0.03	0.08
Southern	Coney Island	0.02	0.02	0.04	0.02	0.04	0.02	0.04
Southern	Jones Tract	0.05	0.03	0.08	0.05	0.07	0.04	0.07
Southern	Orwood Tract	0.03	0.01	0.04	0.03	0.04	0.02	0.04
Southern	Palm Tract	0.05	0.03	0.08	0.05	0.07	0.04	0.07
Southern	Roberts Island	0.03	0.03	0.06	0.03	0.06	0.02	0.05
Southern	Union Island	0.01	0.03	0.04	0.01	0.04	0.01	0.04
Southern	Victoria Island	0.03	0.03	0.06	0.03	0.06	0.02	0.05
Southern	Woodward	0.01	0.03	0.04	0.01	0.04	0.01	0.04
Western	Bradford Is.	0.04	0.05	0.09	0.04	0.08	0.03	0.08
Western	Brannan-Andrus Is.	0.03	0.05	0.08	0.03	0.08	0.02	0.07
Western	Holland Tract	0.05	0.03	0.08	0.05	0.07	0.04	0.07
Western	Hotchkiss	0.01	0.03	0.04	0.01	0.04	0.01	0.04
Western	Jersey Island	0.05	0.05	0.10	0.05	0.09	0.04	0.09
Western	Sherman Is.	0.02	0.05	0.07	0.02	0.07	0.02	0.07
Western	Twitshell Is.	0.03	0.05	0.08	0.03	0.08	0.02	0.07
Western	Webb Tract	0.05	0.05	0.10	0.05	0.09	0.04	0.09

* Which Ryer Island?

Source: Author calculations, using data from Draft DRMS Phase 1 Risk Analysis (J.R. Benjamin and Associates, 2007).

Notes: "PL 84-99" denotes scenarios in which levees are upgraded to meet the higher federal levee

No comments
- n/a -

September 2, 2008

Seismic map inconsistencies

No comments

- n/a -

Comparative study of the data and sources used for the Delta Vision Plan, specifically the studies regarding flooding and seismic activity protections. **DRAFT**

Information compiled by Nicole, S. Suard, Esq., Snug Harbor Resorts, LLC for discussion purposes until written verification is received.

Preliminary findings to be verified:

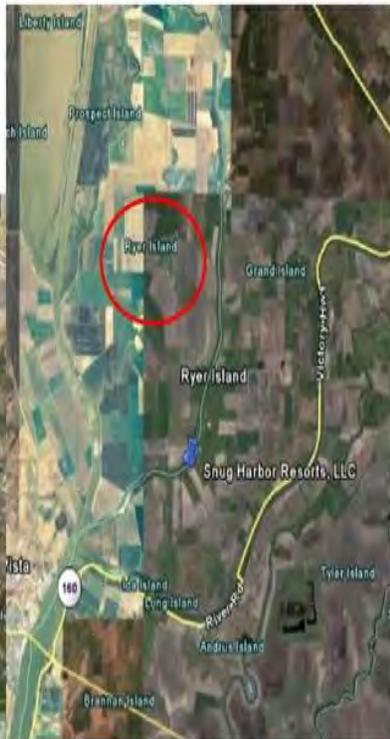
1. **There are two islands named Ryer located in Solano County.** One island is located in the Suisun/Grizzly Bay area and the other is borderer by Cache and Steamboat Sloughs. The duplication of island names may have led to inadvertent incorrect application of data regarding one island applied to the other island.
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Why is this important now?

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Two Ryer Islands in Solano County

Ryer Island in Grizzley Bay/Suisun area
Ryer Island off Cashe Slough and Steamboat Slougy



No comments
- n/a -

<http://www.conservation.ca.gov/cgs/ghm/psha/Pages/pgs.aspx>

No comments

- n/a -

Peak Ground Acceleration

10% probability of being exceeded in 50 years

Shaking (g)

>100%

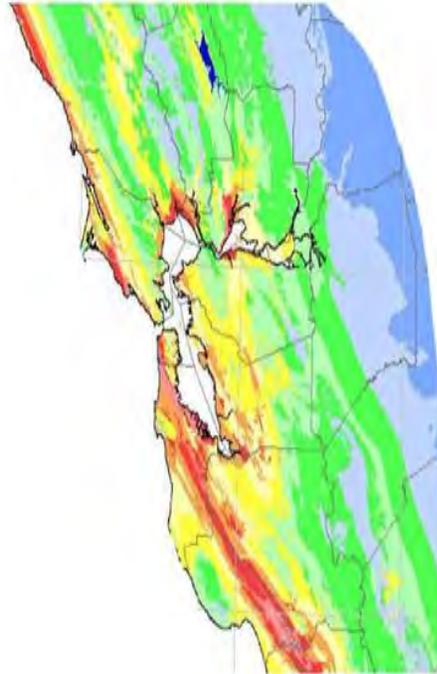
50 - 100%

50 - 60%

0 - 50%

0 - 10%

Water



Ryer Island off Suisun/Grizzley Bay

Department of Conservation
California Geological Survey

Probabilistic Seismic Hazards Mapping
Backgrounds
(Recent & Historic)
CALIFORNIA FAULT
LOSS ESTIMATION
AQUIFERS
EARTHQUAKE FAULT
ZONING ACT
SEISMIC HAZARD
HAZARD MAPS OF
CALIFORNIA

CGS Links
About Us
Contact Us
Jobs
Site Map
Help/FAQ

California Geological Survey
Probabilistic Seismic Hazards Mapping
Ground Motion Page

User Selected Site
Longitude: -122.0148
Latitude: 38.0877

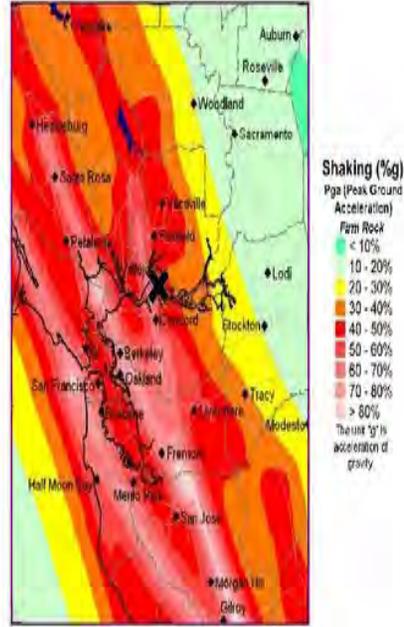
Ground Motions for User Selected Site
Ground motions (10% probability of being exceeded in 50 years) are expressed as a fraction of the acceleration due to gravity (g). Three values of ground motion are shown, peak ground acceleration (Pga), spectral acceleration (Sa) at 0.2 second and 1.0 second (Sa 0.2 sec and Sa 1.0 sec) and peak ground motion (Pgm) at 0.2 second. Ground motion values are defined by the local site conditions. Each ground motion value is shown for 3 different site conditions: firm rock (conditions on the boundary between site categories B and C as defined by the building code), soft rock (site category C) and alluvium (site category D).

Ground Motion	Firm Rock	Soft Rock	Alluvium
Pga	0.492	0.492	0.496
Sa 0.2 sec	1.168	1.168	1.206
Sa 1.0 sec	0.391	0.479	0.568

NEHRP Soil Corrections were used to calculate Soft Rock and Alluvium. Ground Motion values were interpolated from a grid (0.05 degree spacing).

Ground Motion	Firm Rock	Soft Rock	Alluvium
Pga	0.492	0.492	0.496
Sa 0.2 sec	1.168	1.168	1.206
Sa 1.0 sec	0.391	0.479	0.568

NEHRP Soil Corrections were used to calculate Soft Rock and Alluvium Ground Motion values were interpolated from a grid (0.05 degree spacing) of calculated values. Interpolated ground motion may not equal values calculated for a specific site, therefore these values are not intended for design or analysis.



No comments
- n/a -

Ryer Island off Cache & Steamboat Slough

No comments
- n/a -

Department of Conservation

California Geological Survey

Probabilistic Seismic Hazards Assessment Phase 1 (Recent & Historic)

California Fault Database

Loss Estimation

Geologic Earthquake Fault Zoning Act

Seismic Shaking Hazard Maps of California

California Geological Survey

Probabilistic Seismic Hazards Mapping

Ground Motion Page

submit

Search This Site

CGS Links

About US

Contact Us

JOBS

Site Map

Help/FAQ

User Selected Site

Longitude: -121.635

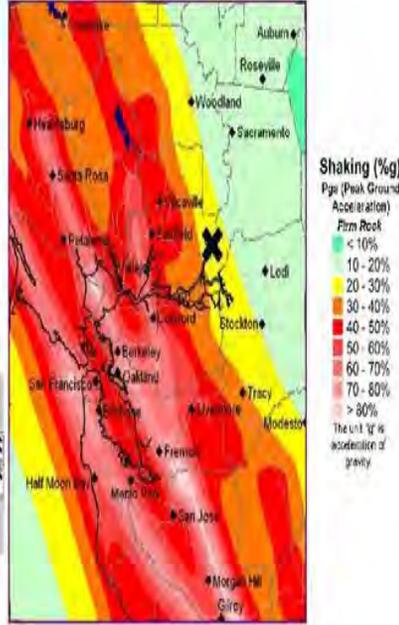
Latitude: 38.216

Ground Motions for User Selected Site

Ground motions (10% probability of being exceeded in 50 years) are expressed as a fraction of the acceleration due to gravity (g). Three values of ground motion are shown: peak ground acceleration (Pga), spectral acceleration (Sa) at short (0.2 second) and moderately long (1 second) periods. Ground motion values are also modified by site conditions. Each ground motion value is associated with a different site conditions: firm rock (code), soft rock (code), soft rock (site category C) and alluvium (site category D).

Ground Motion	Firm Rock	Soft Rock	Alluvium
Pga	0.245	0.267	0.306
Sa 0.2 sec	0.586	0.641	0.74
Sa 1.0 sec	0.212	0.268	0.351

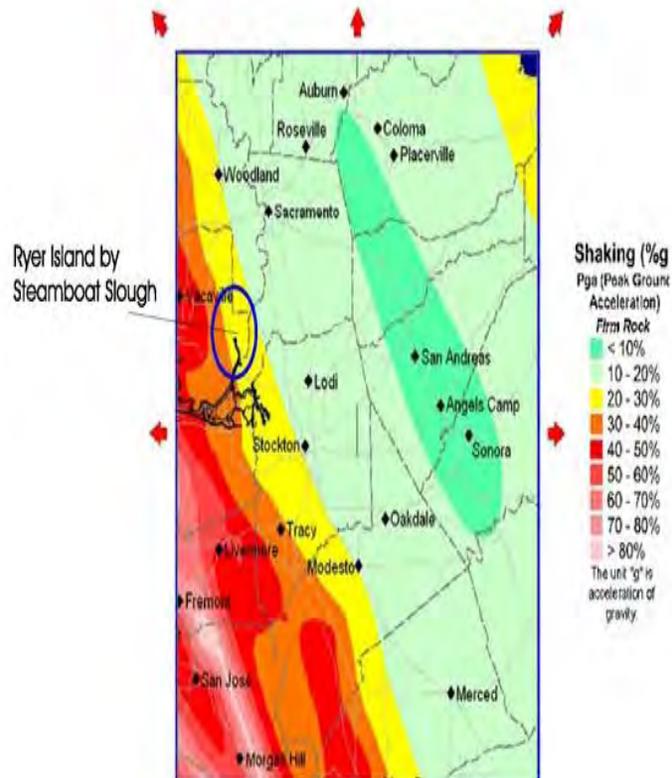
NEHRP Soil Corrections were used to calculate Soft Rock and Alluvium. Ground Motion values were interpolated from a grid (0.05 degree spacing) of calculated values. Interpolated ground motion may not equal values calculated for a specific site, therefore these values are not intended for design or analysis.



Shaking (%g)
Pga (Peak Ground Acceleration)
Firm Rock
< 10%
10 - 20%
20 - 30%
30 - 40%
40 - 50%
50 - 60%
60 - 70%
70 - 80%
> 80%
The unit 'g' is acceleration of gravity

Interactive Ground Motion Map - Centered on 121° W (Longitude);
38° N (Latitude)

Peak Ground Acceleration - 10% of being exceeded in 50 years



No comments

- n/a -

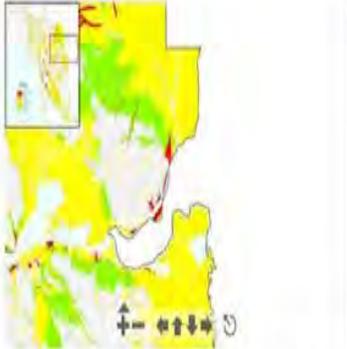
Maps > Susceptibility Map

SFBK Home A cooperative project with the California Geological Survey

Liquefaction Menu *Susceptibility Map of the San Francisco Bay Area*

Introduction
Maps
About Liquefaction
Past Earthquakes
Past Liquefaction
Laws and Guidelines
What Can I Do?
Downloads
Links
References
About This Section

(Note: The following map below requires the Shockwave player to view. You can [download the Shockwave player here](#).)



Roughly one quarter of the San Francisco Bay region may be exposed to liquefaction with the [shaking that has been forecast](#). The area mapped in the Very High, High and Moderate categories makes up about 25% of the 9-county region. Some of the most hazardous areas are beneath our urban core!

The liquefaction susceptibility mapping is based on assessments of the potential for liquefaction to

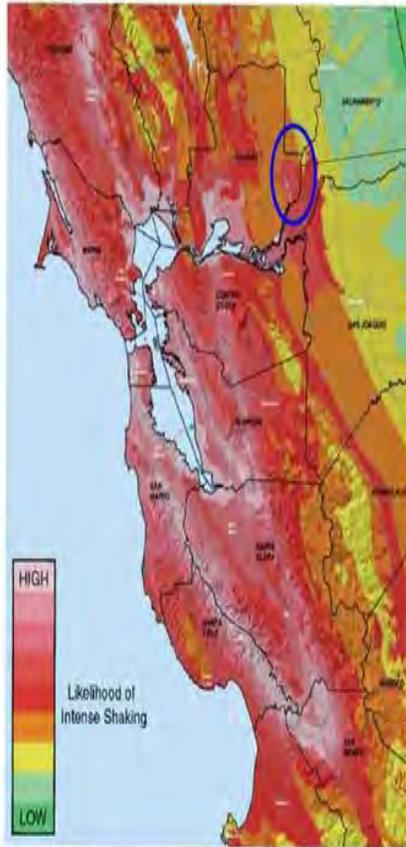
No comments

- n/a -

Map of expected levels of shaking from future earthquakes based on anticipated earthquakes and general geology. Bands of highest expected shaking generally follow the active faults; shaking levels are also influenced by the type of materials underlying an area - soft sediment, like that around the Bay margin, tends to amplify and prolong shaking. Note that much of the Bay region has the potential to be shaken very strongly during future earthquakes. Figure modified from U.S. Geological Survey, General Information Product 15, 2005 and, in turn, from <http://www.consrv.ca.gov/cgs/rghm/psha/index.htm>

No comments

- n/a -

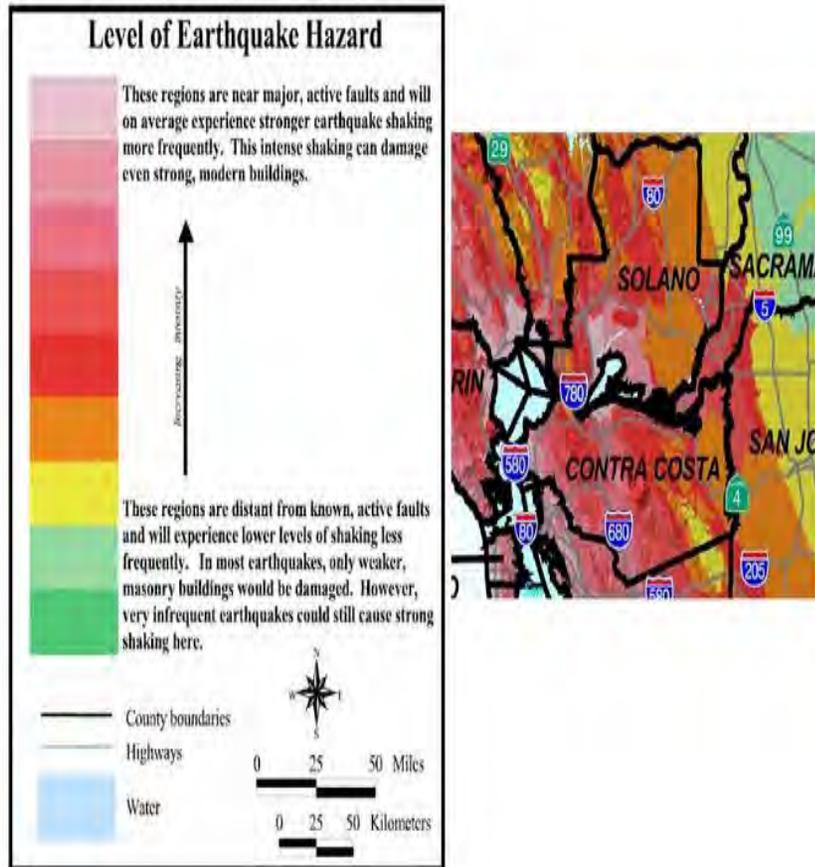


Example of one map currently being used to evaluate levee maintenance and repairs: Ryer Island on Steamboat Slough is categorized wrong based on USGS data previously shown.

Information used by Delta Vision and the various agencies assessing the future of the Delta islands: Ryer Island should be yellow color instead of red based on USGS data shown on previous pages.

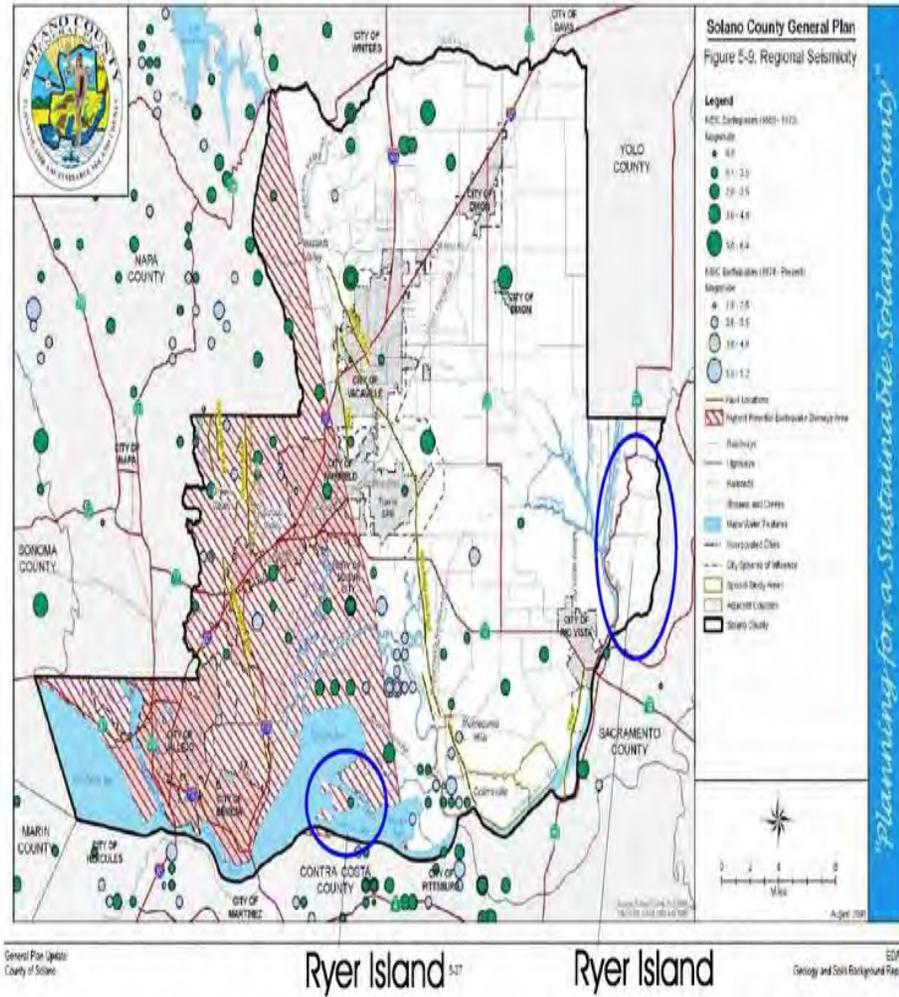
No comments

- n/a -



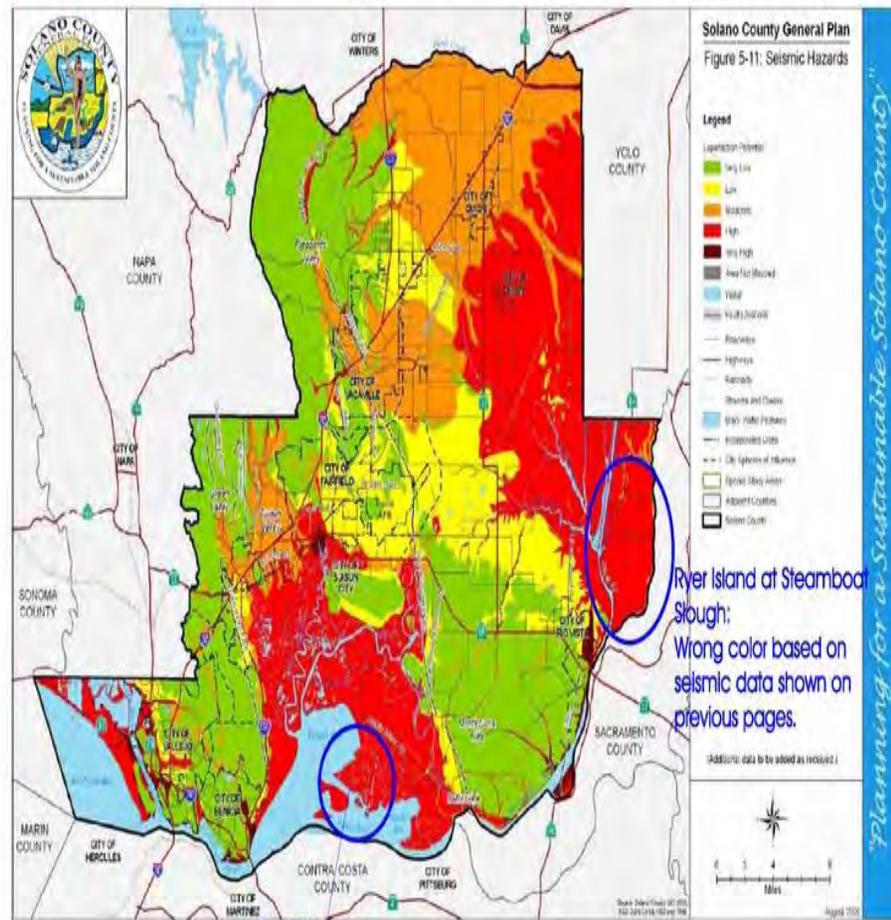
No comments

- n/a -



No comments

- n/a -

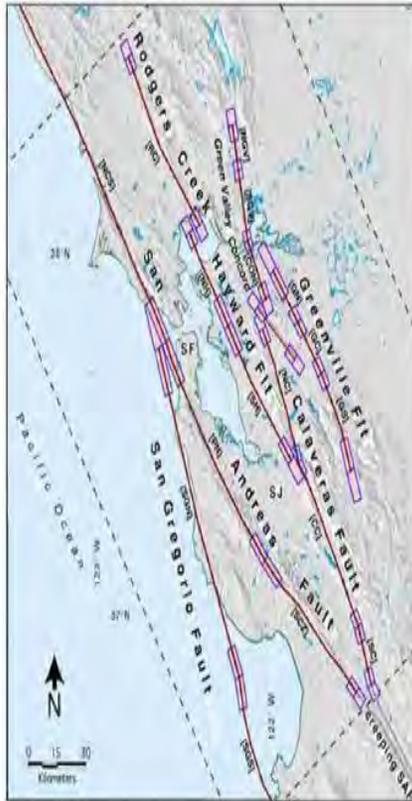


Ryer Island at Steamboat Slough;
Wrong color based on seismic data shown on previous pages.

Ryer Island
Correct color based on seismic data

No comments

- n/a -



Based on maps and data collection points, the study included Ryer Island located in the Suisun/Grizzly area but NOT the Steamboat Slough Ryer Island.

Figure 2. B, Enlarged view of Working Group 1999 box.

Area considered for USGS seismic study

Table B.1 - Summary of Annual Failure Probabilities for Delta Islands

Zone	NAME	Flood	Seismic	Flood + Seismic	Flood PL 84-99	PL 84-99 Flood + Seismic	PL 84-99 Raise Flood	PL 84-99 +1 Raise Flood + Seismic
Central	Bacon Island	0.04	0.02	0.06	0.04	0.06	0.03	0.05
Central	Bouldin Island	0.06	0.03	0.09	0.05	0.08	0.05	0.08
Central	Empire Tract	0.04	0.02	0.06	0.04	0.06	0.03	0.05
Central	Mandeville Is.	0.04	0.03	0.07	0.04	0.06	0.03	0.06
Central	McDonald	0.02	0.03	0.05	0.02	0.05	0.02	0.05
Central	Medford Is.	0.03	0.02	0.05	0.03	0.05	0.02	0.04
Central	Quimby Island	0.04	0.03	0.07	0.04	0.06	0.03	0.06
Central	Rindge Tract	0.01	0.02	0.03	0.01	0.03	0.01	0.03
Central	Venice Island	0.07	0.04	0.11	0.06	0.10	0.06	0.09
Eastern	King Island	0.01	0.01	0.02	0.01	0.02	0.01	0.02
Eastern	Terminous	0.04	0.01	0.05	0.04	0.05	0.03	0.04
Eastern	Wright-Elmwood	0.01	0.01	0.02	0.01	0.02	0.01	0.02
Northern	Brack Tract	0.04	0.01	0.05	0.04	0.05	0.03	0.04
Northern	Canal Ranch	0.04	0.02	0.06	0.04	0.06	0.03	0.05
Northern	Dead Horse	0.03	0.01	0.04	0.04	0.04	0.02	0.03
Northern	Grand Island	0.02	0.05	0.07	0.02	0.07	0.02	0.07
Northern	Bethel Island	0.04	0.04	0.08	0.04	0.07	0.03	0.07
Northern	Ryer Island	0.02	0.03	0.05	0.02	0.05	0.02	0.05
Northern	Staten Island	0.04	0.03	0.07	0.04	0.06	0.03	0.06
Northern	Tyler Island	0.04	0.05	0.09	0.04	0.08	0.03	0.08
Southern	Coney Island	0.02	0.02	0.04	0.02	0.04	0.02	0.04
Southern	Jones Tract	0.05	0.03	0.08	0.05	0.07	0.04	0.07
Southern	Orwood Tract	0.03	0.01	0.04	0.03	0.04	0.02	0.04
Southern	Palm Tract	0.05	0.03	0.08	0.05	0.07	0.04	0.07
Southern	Roberts Island	0.03	0.03	0.06	0.03	0.06	0.02	0.05
Southern	Union Island	0.01	0.03	0.04	0.01	0.04	0.01	0.04
Southern	Victoria Island	0.03	0.03	0.06	0.03	0.06	0.02	0.05
Southern	Woodward	0.01	0.03	0.04	0.01	0.04	0.01	0.04
Western	Bradford Is.	0.04	0.05	0.09	0.04	0.08	0.03	0.08
Western	Brannan-Andrus Is.	0.03	0.05	0.08	0.03	0.08	0.02	0.07
Western	Holland Tract	0.05	0.03	0.08	0.05	0.07	0.04	0.07
Western	Hotchkiss	0.01	0.03	0.04	0.01	0.04	0.01	0.04
Western	Jersey Island	0.05	0.05	0.10	0.05	0.09	0.04	0.09
Western	Sherman Is.	0.02	0.05	0.07	0.02	0.07	0.02	0.07
Western	Twitshell Is.	0.03	0.05	0.08	0.03	0.08	0.02	0.07
Western	Webb Tract	0.05	0.05	0.10	0.05	0.09	0.04	0.09

Which Ryer Island data was used for this rating?

Source: Author calculations, using data from Draft DRMS Phase 1 Risk Analysis (J.R. Benjamin and Associates, 2007).

Notes: "PL 84-99" denotes scenarios in which levees are upgraded to meet the higher federal levee

No comments
- n/a -