Responses to Delta Vision Task Force Questions
-DRAFT-
August 24, 2007

Overview: At its July 19, 2007 meeting, the Governor's Delta Vision Task Force submitted a series of questions to the California Department of Water Resources (DWR). These questions covered a range of biological, hydrological, and policy questions. This document presents DWR responses to the Task Force questions. DWR appreciates this opportunity to provide input to the Task Force as we work together to formulate plans for a sustainable Sacramento-San Joaquin Delta.

DWR actions and policies in the Delta are guided by two goals. First, we must maintain and improve water supply reliability; second, we must protect and restore the Delta environment. Some may view these goals as incompatible or mutually exclusive. To the contrary, we believe that it is essential to pursue both goals together.

There is increasing evidence that the estuary, as it is being managed today, is unsustainable. DWR has been involved in many of the studies that have revealed the nature and extent of challenges that the Delta faces today or will face in the future. Some of these are described below.

The technical memorandum report *Progress on Incorporating Climate Change into Management of California's Water Resources*, DWR, July 2006 devotes an entire chapter to impacts of climate change on the Sacramento-San Joaquin Delta under four modeled climate change scenarios. Delta inflows are projected to increase during the winter and early spring and decrease during the summer and fall. Sea level rise will tend to drive higher salt concentrations into the Delta unless counteracted by significantly greater fresh water flows. A one-foot rise in sea level, coupled with tidal and seasonal effects, would cause occasional overtopping of existing Delta levees.

DWR scientists have been heavily involved in the search for causes of the recent Pelagic Organism Decline (POD) through the Interagency Ecological Program. Evidence is mounting to suggest that perhaps the most significant impact to pelagic fish species in the Suisun and Delta portions of the Estuary has been the reduction in both the quantity and quality of important food supplies at the base of the food web caused by a series of invasive species. When coupled with changes in salinity, reduced turbidity, possible toxic effects and the effects of SWP and CVP water project operations it becomes clear that a comprehensive set of actions and policies will be necessary to successfully protect and restore the Delta's ecosystem. Single-action responses to multi-factor problems are invariably ineffective. The *Pelagic Fish Action Plan*, Resources Agency, Department of Water Resources, and Department of Fish and Game, March 2007, reflects a multi-agency effort to apply the best available science and recommend several system-wide actions designed to improve the abundance of at-risk fish species in

the Delta as it exists today. However, it has become increasingly clear that a more comprehensive multifaceted approach including changes in how water is conveyed through the Delta is needed to provide for a more productive and sustainable Delta System.

The Delta is also vulnerable to damage from seismic events. A review of seismic activity in the Bay-Delta region shows considerably less seismic activity during the last 100 years when compared to records more than a century old. The conclusion is that seismic energy has accumulated and will eventually be released, perhaps with catastrophic consequences. Furthermore, we continue to exacerbate the vulnerability of Delta islands by carrying out land use practices that cause soil oxidation and subsidence.

To respond to these challenges DWR is participating in several initiatives to quantify risks and develop alternatives for sustainable Delta management. In addition to the Delta Vision process, these initiatives include the Delta Risk Management Strategy and the Bay Delta Conservation Plan.

The 2000 CALFED Record of Decision included a recommendation for the completion of a Delta Risk Management Strategy (DRMS) that would look at sustainability of the Delta, and assess major risks to the Delta resources from floods, seepage, subsidence, and earthquakes. DRMS would also evaluate the consequences, and develop recommendations to manage the risk. A report describing Phase I of the program, identification of risks, is set for release in the next few weeks. Phase II, evaluation of response strategies, will be completed at the end of 2007.

The Bay Delta Conservation Plan Program (BDCP) is a collaborative effort among the Resources Agency, Fishery Agencies, Potential Regulated Entities, and Non-Governmental Organizations. The goal of the BDCP Program is to “provide for the conservation and management of Covered Species.” Selecting an alternative Delta water conveyance method is a key conservation action that needs to be decided early, for it will drive the formulation of other conservation actions. The BDCP is an extremely important complement to the Delta Vision process, so we provided additional details on this process below.

As part of the BDCP development process, potential habitat restoration and enhancement opportunities are being identified that would benefit covered fish species, including State and federal listed Threatened and Endangered fish, as well as other components of the aquatic ecosystem.

Early in the BDCP process the Steering Committee recognized that the method of water conveyance through the Delta played a key role in designing conservation actions. The more isolated the water conveyance system, the greater the opportunity for more expansive restoration actions. Selecting the preferred water conveyance method was identified as a key conservation action that needs to be decided early for it will drive the other conservation actions. The BDCP Steering

Committee has developed four water conveyance options around which the comprehensive conservation program will be based. They are:

Option 1. Existing pumping and associated facilities would be used, potentially including opportunistic water pumping and export during high flows (i.e., drawing water at times that have the least adverse affects for covered fish species). Restoration opportunities would be primarily in the northern and western Delta.

Option 2. Operable physical channel barriers, siphons, and a hydraulic inter-tie would be constructed in the southern Delta to create flow corridors separating Old River in the central Delta from Middle River. This would focus water conveyance through only Middle River rather than both Old and Middle Rivers, as is the case today. Restoration opportunities would include those identified in Option 1 plus additional opportunities in the Old River area.

Option 4. All SWP and CVP diversions would occur at a new facility on the Sacramento River with a state-of-the-art positive barrier fish screen and water would be conveyed via an isolated aqueduct that would move all SWP/CVP water instead of using the Delta channels. Opportunities for habitat restoration and enhancement under Option 4 could be applied Delta-wide. Fluctuating salinity conditions could be implemented with the greatest flexibility and extent among the four options

Option 3. The facilities alterations under this option would include those identified in Option 2, plus Option 4, in a dual water conveyance system. Habitat restoration and enhancement would be similar to that under Option 2.

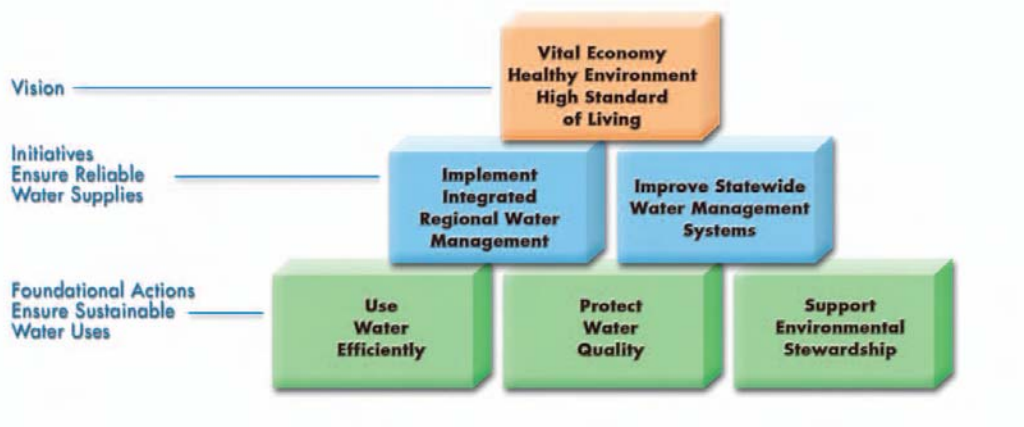
These options are currently being evaluated through August of this year. A conceptual conservation plan is expected before the end of the year and should be available to help inform the Delta Vision Process. As a participant, DWR will continue to work with the BDCP program and assist in developing and evaluating the options that promote multi-species variability within the Delta ecosystem to obtain a productive and sustainable Delta while providing improved water supply reliability.

Question #1 - What is the position of the state and/or DWR regarding protection and preservation of the Bay-Delta Estuary?

The State of California and the Department of Water Resources have long had an interest in preserving and protecting the beneficial uses in the Bay-Delta estuary. The importance of the estuary is reflected in the DWR goal statement which includes the objective to "Protect and improve the water resources and dependent ecosystems of statewide significance, including the Sacramento-San Joaquin Bay-Delta Estuary." The beneficial uses and the services within the Delta are documented in the recent publication *Status and Trends of Delta-Suisun Services*, URS Corporation for DWR, May 2007.

Furthermore, natural resource stewardship is a fundamental tenet of the *California Water Plan Update*, DWR, December 2005. Environmental stewardship is one of three foundational resource management actions identified in the 2005 *Water Plan Update.* The figure below is taken from page 2.2 in Volume 1 of the 2005 *Water Plan Update*. More information can be found at the following website: http://www.waterplan.water.ca.gov/previous/cwpu2005/index.cfm

Figure 2-1 A Framework for Action



By basing California water management on key features of the Framework for Action—foundational actions and initiatives—we can attain the water plan's vision of a vital economy, a healthy environment, and a high standard of living.

To reiterate, DWR actions and policies in the Delta are guided by two goals. As a water supplier we must maintain and improve water supply reliability; as a resource manager we recognize that we must protect and restore the Delta environment.

Question #2 - Is the position of DWR to acquiesce to an inevitable inland salt sea? If not, what actions and measures does DWR plan to prevent the Estuary from becoming an inland salt sea?

The information above details DWR's position on the value of Delta assets and functions. Regarding the prospect of an inland brackish sea, DWR views this as the least desirable Delta outcome, and the most likely result of "no action". DWR seeks economically and physically viable options to avoid this outcome. Several ongoing initiatives such as Delta Vision, DRMS, BDCP (see response to question #3) are expected to guide strategic investment in Delta risk reduction, protection, and restoration. Strategic investment will be based on a broad suite of considerations. DWR looks to the Task Force to recommend feasible future management for the Delta.

Question #3 - What is known about the environmental conditions necessary for healthy [indicator] species in the Bay-Delta Estuary? What is the scientific evidence and documentation? Use 3 species as exemplary: salmon, smelt and striped bass. Answer the following questions for each species:

What are the freshwater and water quality needs of these species?

How much fresh water of what temperature and at what times is needed for the health of these species?

Taking the notion of fluctuating conditions (but nevertheless continue to assume an estuarine ecological system), what is the frequency of freshwater flows and how much water is needed for the health of the species?

What is known about life cycles and freshwater needs, null zones, habitat, etc. of each species?

How much saltwater and for what durations can each species endure?

First, DWR would like to discourage oversimplification of the threat to aquatic species such as singling out fresh water as a primary indicator of aquatic health. In reality, the threat to aquatic species is far more complicated. Creating opportunities for the development of more variable and more productive areas within the Delta is perhaps the most sustainable method to address the long-term protection of this important estuary.

The needs of different fish species vary according to their life history and the ecological niche they occupy. Most current Delta fish species are not native and their needs may be different from those of native species. Several introduced species such as striped bass are important to recreation in the Delta, and they may benefit from management changes that are taken to protect native species. However, it would be unwise to use introduced species as indicator species or to

devise management actions strictly for the benefit of introduced species when native species are experiencing sharp population declines.

That said, the following represents the current understanding of the system and its relationship to at-risk aquatic species: with a focus on water quality and hydrodynamics as reflected in the line of questions. The native longfin smelt thrive in seawater. Striped bass are also able to tolerate a wide range of salinities from seawater to fresh water. However, other estuarine fishes such as Delta smelt have a much narrower salinity distribution focused around 0.5-2 ppt (parts per thousand of total dissolved solids). To put this in context, sea water is about 35 ppt. While Delta smelt can occur at higher salinities (e.g. 8 ppt), higher salt levels are detrimental for extended periods.

Freshwater fishes including pelagic fishes (threadfin shad) and littoral fishes (centrarchids including largemouth bass) do poorly at higher salinities. For example, habitat above about 5 ppt is considered unsuitable for largemouth bass, although they are able to survive for fairly long periods at up to 8 ppt. Salinity is less of an issue for many anadromous species such as salmon and sturgeon because they are adapted to transitions between fresh and salt water. However, very rapid salinity transitions (e.g. 0 ppt to 35 ppt in a day) can cause stress or mortality. There are still many unknowns about the environmental conditions needed for some Bay-Delta species.

Many of the freshwater fishery needs historically identified for the Delta were in one way or another to move fish species outside the influence of the SWP and CVP export operations. A change in the method of moving water through or around the Delta will change this aspect of fresh water needs for the Delta.

Scientists studying the recent decline in pelagic organisms have identified several potential causes besides project operations. Some environmental factors currently under investigation through the pelagic organism decline (POD) studies include investigations of food limitations, toxics and invasive species. The POD studies are currently trying to determine what environmental factors are affecting current pelagic fish populations in the Bay-Delta. An overview of this is given in the *Pelagic Fish Action Plan* cited above. This includes a discussion on the relationship between possible actions to address the POD and stabilize the Bay-Delta ecosystem, including reduced food availability and quality, reduced habitat quality and increased mortality.

The 1995 Bay-Delta Plan and subsequent Decision 1641 issued by the State Water Resources Control Board (SWRCB) require the flow-dependent objectives for fish and wildlife be met by DWR and the U.S. Bureau of Reclamation (USBR) pursuant to their obligations under the State and federal Endangered Species Acts. These flow dependent objectives are now a part of the water right permits of DWR and USBR.

Question #4 - What are the average flows in the Sacramento River today (dry, normal, wet) and what has been the pattern over the last 20-25 years?

The Sacramento River's measured flow data at Freeport were obtained from the United States Geological Survey (USGS) gage, the California Data Exchange Center (CDEC), and DWR's Division of Operations and Maintenance. The USGS gage record has continuous data for water years 1949 through 2004. For this analysis, data for water years 1983 through 2007, 25 years in total, was selected. For water year 2007, no data after August 12 was used since data for this period is not available as of this report preparation.

The water year classification includes Wet, Above Normal, Below Normal, Dry, and Critical water year types. The cut off marks are:

Year Type	Water Volume Cutoff (million acre-feet)
Wet	9.2
Above Normal	7.8
Below Normal	6.5
Dry	5.4
Critical	Below 5.4

Figure 1 shows these classifications along with index magnitudes for the 1983 to 2007 period. Water year type classification for 2007 is based on a May 1, 2007, forecast of DWR's Bulletin 120.

For comparison purposes, the Sacramento Valley water year type frequency for two consecutive 25 year periods (1958 to 1982 and 1983 to 2007) is also shown in Figure 2.

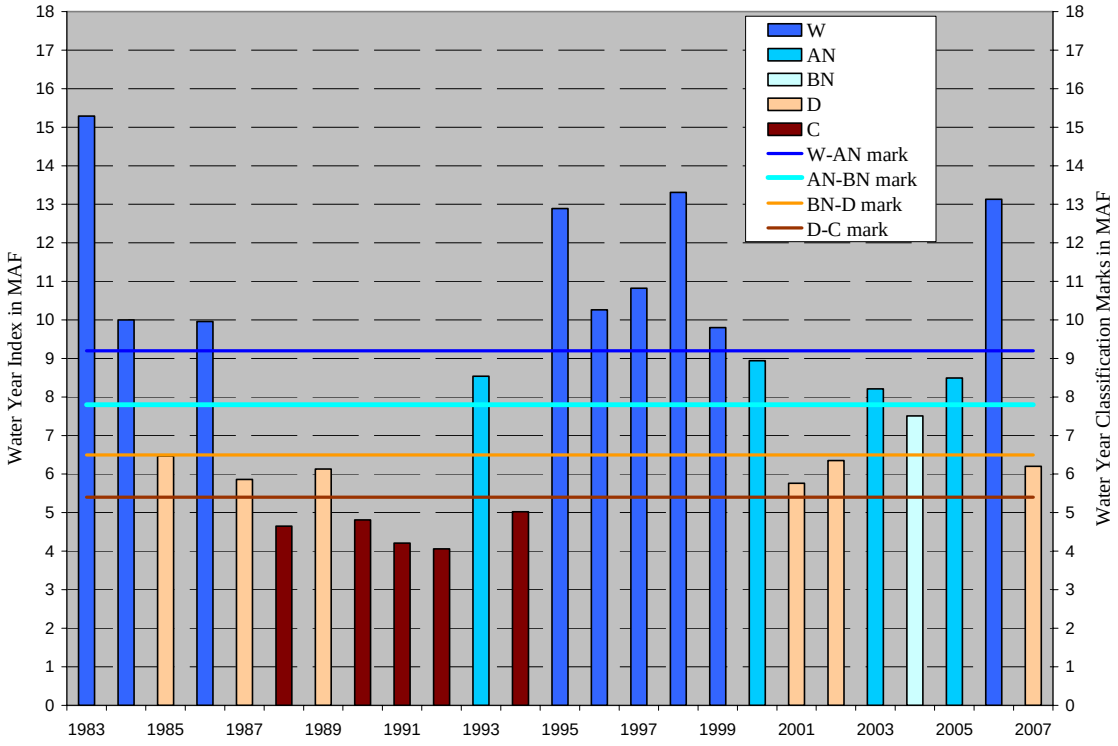


Figure 1
1983 to 2007 water year types according to the Sacramento Valley water year type index

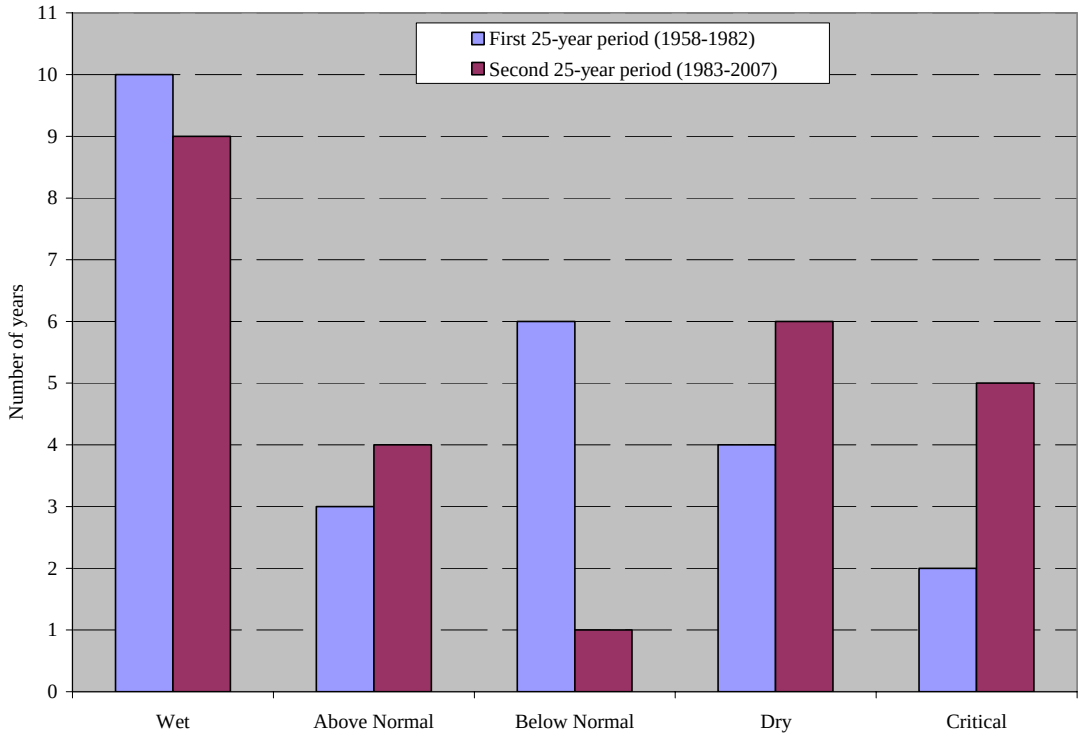


Figure 2
Sacramento Valley water year type frequency for two consecutive 25 year periods

Table 1 gives a summary of the annual flow data during the selected 25 year period as well as for the different water year types during this period. The annual flow volume[1] ranges from 33.9 MAF during the 1983 wet year to 7.6 MAF during the 1991 critical year. The mean and median values are 17.1 MAF and 17.1 MAF, respectively. Figure 3 illustrates the data shown in Table 1.

Table 1. Summary of Sacramento River at Freeport flow data for water years 1983 to 2007 in million acre-feet (MAF)

	1983-2007	**Wet**	**Above Normal**	**Below Normal**	**Dry**	**Critical**
Maximum	33.6	34.0	19.6		13.1	9.9
Average	17.1	25.0	18.1	17.1*	11.3	8.9
Median	17.1	22.6	18.3		11.4	9.5
Minimum	7.6	17.9	16.4		9.6	7.6

* There was only one Below Normal water year type during the selected 25 year period.

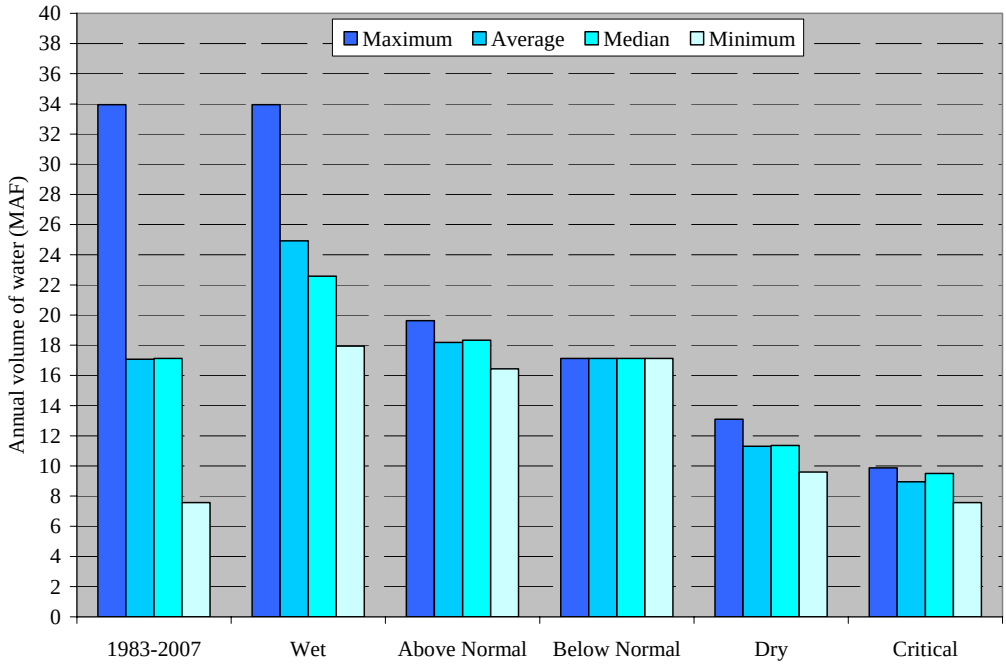


Figure 3
Sacramento River annual volume at Freeport for the 1983 to 2007 water year period

Figure 4 shows the annual volume of flow past Freeport for the 1983 to 2007 period as well as the five year running average. Figure 5 shows the monthly average distribution of Sacramento River flow past Freeport. Figure 6 shows the daily peak flows.

[1] For water year 2007, annual flow volume is as of August 12, 2007.

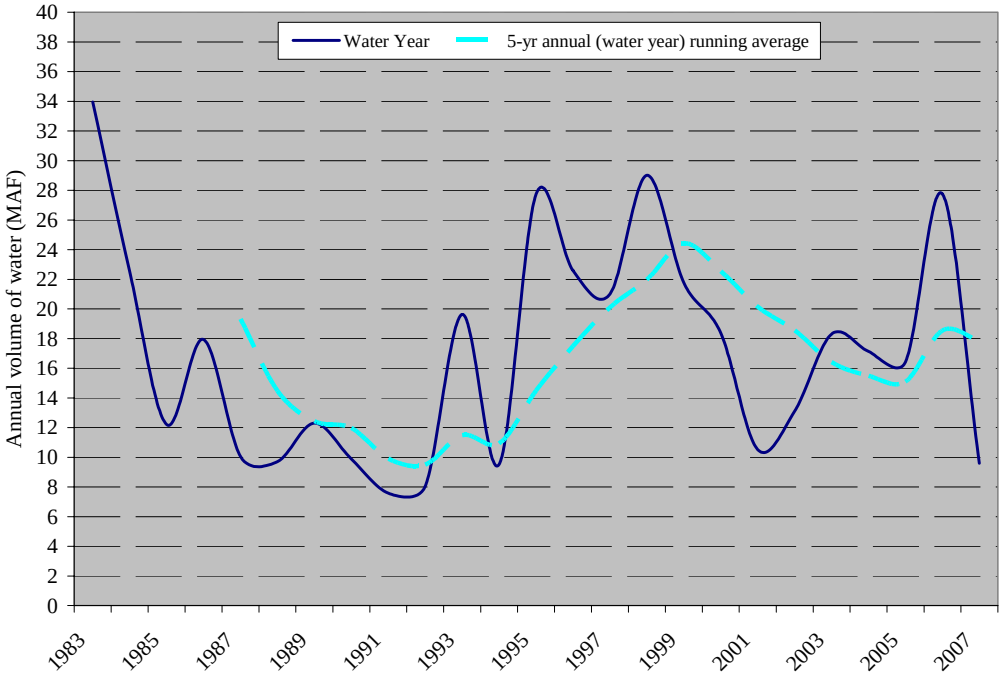


Figure 4
Sacramento River annual volume of flow past Freeport for the 1983 to 2007 period[2]

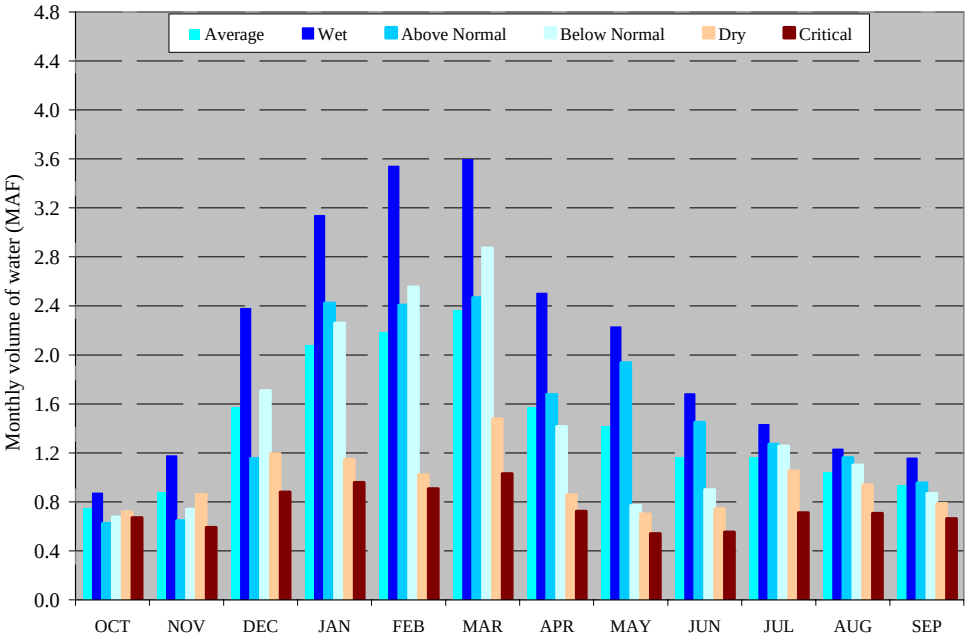


Figure 5
Monthly average distribution of Sacramento River flow past Freeport for the 1983 to 2007 period for different water year types[3]

[2] Annual flow data for water year 2007 is as of August 12, 2007.
[3] August and September average monthly flows are based on 24 years since complete data is unavailable for August and September of 2007.

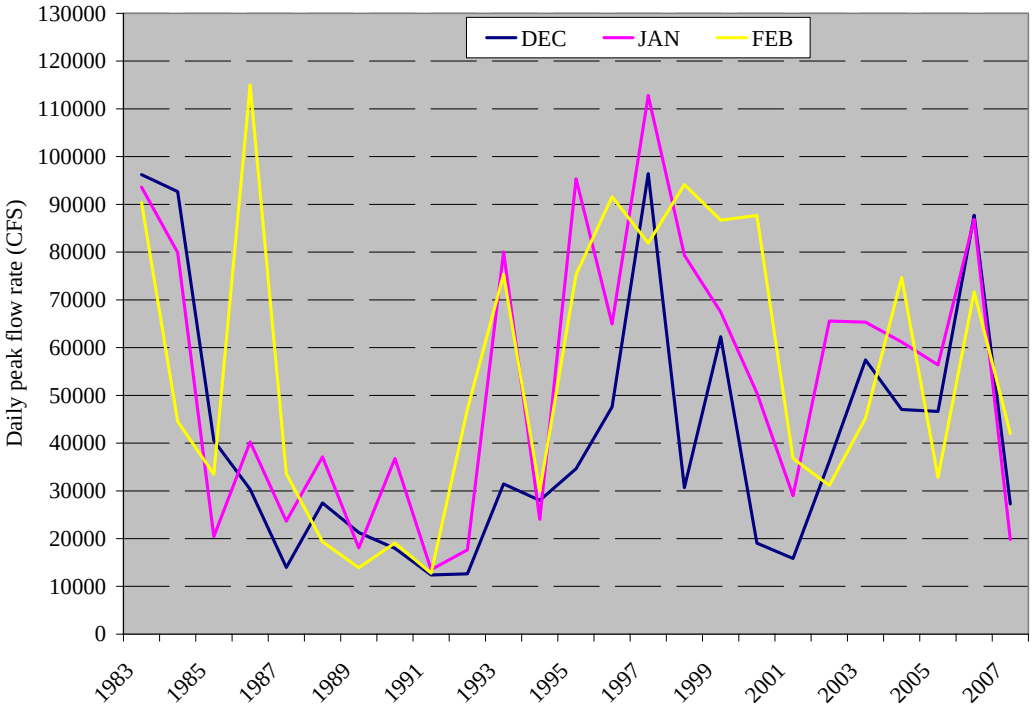


Figure 6
Recorded daily peak flow rates at Freeport for the winter months of December, January, and February.

Question # 5 - The levees define areas that take up space, such that there is less freshwater needed to maintain the Estuary (dynamic freshwater-salt water continuum) and provide water of sufficient quality for exports. If DWR has a different perspective on this function of the levees, then what is it and why?

The levees in the Delta provide many functions including, but not limited to confining flow to channels which allows the control of sea water salinity intrusion with less freshwater. The levees and confined channels in the Delta tend to limit dispersion of sea water more than open water bodies. Therefore, the repulsion of sea water is typically less difficult due to the levees in the confined channels than would be the case if this area was an open body of water. This is particularly true in the Western Delta at the interface between salt water and freshwater in the Delta. The levees also protect the islands for beneficial uses, they form habitat corridors for aquatic and riparian species, many of them serve as roads and others protect transportation assets.

Please also answer the following questions:

5a.) If the catastrophic failure projected occurs, how long will it take to restore the estuarine ecosystem and how much water will it take?

The answer to this question depends on the specific event (how many islands flooded) and the dynamic interplay of various factors, such as the time of year of the failure. For example, if failures occur in the winter, when outflows tend to be higher, islands would fill with freshwater and the impacts would be far less than a summer failure when the islands would fill with brackish water. Location of failures is also an important factor in determining impacts. Based on these and other considerations, the impacts vary dramatically.

The results of the DRMS Phase 1 analysis which considered as many as 30 islands flooded simultaneously, suggest the disruption of water exports could be relatively limited (from 4 days for a seismic event that occurs during winter and is followed by very high monthly inflows) to extensive (885 days for an event occurring in August which is followed by a drought). The amount of water that might be used to help initially flush the Delta following an event could be considerable (hundred's of thousands of acre-feet). In addition, the water volume required to restore the system would have a significant impact on water supplies (i.e., export reductions). This volume varies depending on the specifics of the event.

In order to provide a quantitative response to this question, it is helpful to consider a single hypothetical scenario. The DRMS study looked at several such events and provides the following insights for the 20 island failure scenario:

- Annual probability of occurrence – 2.7%
- Probability over 25 years – 50%
- Duration of repairs – 62 months

- Cost of repairs – $6.2 Billion
- Number of months with no water exports – 11 to 21
- Export Reductions – 6.3 to 6.5 Million Acre-Feet
- Water volume required to restore the estuarine ecosystem is a matter of speculation, however, the failure of Brannan Island in 1972 required 500,000 acre feet of fresh water to restore delta water quality.

5b.) In other words, to what extent are the levees (not the islands, but the levees) serving a function of helping preserve the supply for exports?

Currently the levees are the interface between the Delta islands and the channel. They in effect define the Delta Islands. The question seems to imply that the Delta islands could flood and the levees be maintained solely to help manage salt water intrusion. While this is possible, it is unlikely due to the erosive effects on the land side of the levees that would take place once they were flooded. We saw this in the Jones Tract levee failure. The back-side of the levees are unprotected and erode easily. They would have to be armored in much the same way the channel side of the levees are armored to make this feasible. However, to address the question, the levees do provide some benefit to assist in the repulsion of sea water and should they be lost in the western Delta it would likely require more water to repulse sea water and this would lead to a reduction in exports. As stated previously, the amount of this benefit is difficult to quantify. The hydrodynamic and water quality models we have are developed based on the existing system and large scale changes in the physical system would require these models to be extensively revised. As they currently exist they cannot be reliably applied to quantify a response to this question.

5c.) What impact will an extended saltwater condition have on the fisheries and ecosystem?

Since this type of catastrophic ecosystem failure has not occurred in recorded history, the time to restore the estuarine ecosystem is unknown. Potential ecosystem issues could result from rapid changes from freshwater to saltwater environments and/or a change from slough/channel system to a lake like system (i.e., Franks Tract). For example, rapid conversion from channels to lake systems would likely result in extreme low dissolved oxygen conditions due to a spike in biological oxygen demand from extensive flora and fauna mortality. Over time, species assemblages would likely shift from fresh water species to more salt tolerant species. Native species have evolved to a fluctuating estuarine ecosystem, but whether they could adapt to a system that fluctuated in an extremely short time period is unknown. Non-natives that did not evolve in this type of system may not be able to respond as quickly as natives.

Question #6 - Under the DWR scenarios for a large isolated transfer facility, what is the plan for releasing freshwater to maintain the Estuary?

DWR is involved in several efforts to evaluate risks and develop comprehensive solutions to the Delta issues including: Delta Risk Management Study (DRMS), Delta Vision Program and a Bay Delta Conservation Plan Program (BDCP). These efforts involve participation from federal, State, and local agencies, Non-government Organizations, and the public. Through these efforts, the State plans to develop comprehensive solutions for a sustainable Delta. In support of these processes, DWR is developing information regarding various conveyance configurations. There is no current single DWR scenario.

An altered water conveyance system would require a host of approvals by regulatory agencies. These regulatory processes and agencies that implement them would help determine freshwater releases and operating criteria in the Delta. The agencies and processes include: (1) the United States Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), and the development of biological opinions to protect federally listed threatened or endangered species; (2) the State Department of Fish and Game (DFG) in the implementation of the State endangered Species Act; (3) the SWRCB and the development of updated or revised water right decisions; (4) development of a Bay Delta Conservation Program under the State Natural Communities Conservation Plan (NCCP) and Federal Habitat Conservation Plan (HCP) statues; (5) revised permits from the U.S. Corp of Engineers and Clean Water Act 401 certifications by the SWRCB and other agencies; and (6) others that may be developed as part of the Delta Vision process and subsequent legislation. DWR plans to continue working in the collaborative process to assist California in developing a sustainable future vision of the Delta. DWR believes the vision should come from these public processes.

Question #7 - What are the non-isolated through-Delta conveyance improvements that will reduce impacts on the fisheries?

The major fisheries impacts of non-isolated through-Delta conveyance include direct losses at the water projects, and altered hydrodynamics that cause fish to migrate to the places where they are at risk. Hence, the most important improvements for fisheries include changes in Delta conveyance configuration that would reduce the “zone of entrainment” of the water projects, and minimize altered flow patterns that cause fish to migrate to less suitable habitat.

DWR has several efforts designed to improve conditions for Delta fisheries, both resident and migratory. Among the projects are: improvements to south Delta fish facilities, screens for agricultural intakes, a permanent operable gate at the Head of Old River, the Franks Tract Project, and studies on Option 2 of the Bay-Delta Conservation Plan. Following is a brief description of each effort and its status.

Improve Fish Screens and Salvaging Process at SWP and CVP Facilities
In 2000, DWR studied the potential for using modularized fish protection facilities for screening an intake to Clifton Court Forebay (CCF). Part of the CCF facility design planning was to use information from the then-proposed Tracy Fish Testing Facility (TFTF). The Feasibility Study for the screens estimated the cost to be as high as $1.7 billion for the full project. In 2005, the CALFED South Delta Fish Facilities Forum (Forum), recommended not to pursue the CCF project or TFTF. The Forum had concerns about the high cost and uncertainty of the effectiveness of the approach. The Forum did not eliminate the possibility of including the modular screening approach as a future facility improvement, but instead recommended some immediate actions. The following is a list of actions and studies the Forum requested and the respective status of each.

- *Improved Debris Management*: A new trash screen was installed at the Skinner Fish Facility in 2005.
- S*teelhead Predation Loss Study*: The National Oceanic Atmospheric Administration (NOAA) Fisheries Operation Criteria and Plan (OCAP) biological opinion (2004) requires this investigation. This study, started in December 2006, is expected to finish in June 2008.
- C*ollection, Handling, Transportation, and Release Study:* This study is designed to identify improvements to the process of salvaging and releasing Delta smelt. The study is planned for completion in FY 08-09.
- S*outh Delta Hydrodynamics, Water Quality, and Fish Movement study* is in progress and is expected to be complete in FY 08-09.

Screening of Agricultural Intakes in the Delta
Screening agricultural intakes is assumed to be protective for adult smelt, however it is likely not effective for juvenile smelt or larvae. Most of the small diversions in the Delta are agricultural diversions. DWR has screened 14 diversions on Sherman Island as mitigation for the Temporary Barriers Project. There are approximately 1800 agricultural diversions in the Delta from north of Freeport on the Sacramento River to the Paradise Cut weir on the San Joaquin River. DWR estimates that approximately 1260 diversions could be screened for an estimated $126 million. Screening up to ten active agricultural intakes on Sherman Island and Twitchell Island is included in the Governor's Interim Delta Actions. Screening of these intakes is a priority for DWR because they are located in the heart of the Delta smelt spring habitat.

Install a Permanent Operable Gate at the Head of Old River
DWR and USBR have proposed the South Delta Improvements Program (SDIP) which includes the installation of a permanent operable gate at the Head of Old River to replace the rock barrier that is installed and removed twice each year. This gate would keep out-migrating salmon smolts in the San Joaquin River reducing their chances of being affected by the state and federal diversions in the south Delta. SDIP also proposes other elements to mitigate for the effects of the gate at the Head of Old River and to provide better water quality and water stages

for the south Delta farmers. The Environmental Impact Report is complete and the project is being reviewed by the fish and wildlife regulatory agencies for permitting. Permits are expected by summer 2008 and operable gates are expected by spring 2011.

Franks Tract Project
The Franks Tract Project involves the potential installation of flow modifying facilities in the vicinity of Franks Tract, a flooded island in the Delta. The purpose of the project is to improve export water quality and protect Delta fish. Possible locations include West False River or Three Mile Slough. The facilities could be operated to: (1) reduce salinity of Delta exports, (2) increase interior Delta salinity for Delta fisheries during selected time periods, (3) maintain low salinity at export facilities while the Delta Cross Channel (DCC) gates are closed to protect fish near the DCC, and (4) reduce the presence of Delta smelt and salmon smolts in the interior central Delta. Preparation of environmental documents is being initiated, and the facility is expected to be constructed by 2011.

Study of Through-Delta Conveyance, Option 2 being investigated by BDCP
Conveyance Option 2 in the Bay-Delta Conservation Plan (BDCP) is intended to provide a corridor through the central Delta by which export water could be conveyed, while also creating a corridor in the western Delta that would enhance Delta smelt spring habitat. The proposal would segregate the northern reach of Old River from Middle River. Slower moving waters in the Old River area are thought to enhance food production for Delta smelt and prevent entrainment of these fish. This option requires much more study, which will be done under the BDCP.

Question #8 -If these improvements are made while isolated conveyance is being further studied and possibly constructed, would the through-Delta improvements have any impact on the isolated conveyance? If so, what?

There are a host of Delta improvements that can be implemented before or during the time that would be needed to design and construct an isolated conveyance facility. Some of these improvements are “no regrets” interim Delta actions that Governor Schwarzenegger announced on July 17, 2007 and the State intends to implement. Additional potential actions were listed in materials distributed at the Delta summit between the Governor and Senator Feinstein on August 21, 2007. Some of the actions described above in the response to Question #7 are relatively small projects that could be constructed much more quickly than an isolated facility and might be economically justified even if they eventually were rendered obsolete due to a change in Delta conveyance. These improvements would continue to be useful under a dual Delta conveyance scenario.

Thus, the course of action the State is already taking, which DWR supports, is to implement “no regrets” actions and economically justified actions over the short term. Simultaneously, planning and implementation must proceed on a long-term Delta solution that offers more comprehensive and sustainable benefits.

A comprehensive Delta solution that relies upon through-Delta conveyance should not be viewed as an alternative that could be implemented and tested more rapidly than an isolated facility. Some components of through-Delta conveyance such as channel barriers could be constructed and tested on a temporary basis, but a comprehensive package of actions including sustainable through-Delta conveyance would likely be quite complex and nearly as time-consuming to implement as a solution that included isolated conveyance.

Question #9 - Would the through-Delta improvements have a positive, negative or neutral impact on the isolated conveyance?

The through-Delta improvements currently being implemented or considered are all interim actions that will not conflict with any Delta conveyance alternative, or else they are actions that are likely to be economically justified even though their usefulness might end upon completion of an isolated conveyance facility.

An important question that must be considered by the Task Force and other current Delta processes is whether through-delta conveyance can function successfully as part of a sustainable, comprehensive solution given predicted sea level rise, higher peak flood flows, seismic vulnerability and land subsidence. Selection of a long-term solution that does not truly offer the promise of a sustainable Delta would have a negative impact on California's economy and its environment.

Once again, DWR recommends implementation of "no regrets" actions and economically justified actions over the short term. Simultaneously, planning and implementation must proceed on a long-term Delta solution that offers more comprehensive and sustainable benefits.

Question #10 - If an isolated conveyance facility were to be approved, from the date of approval, how long would it take to design, engineer, certify environmental studies, and construct it? Please delineate range of possible timeframes for each of these critical steps in the process.

DWR does not currently have a good estimate of the time or cost to develop an isolated conveyance system. DWR has not conducted comprehensive analysis of isolated conveyance for over 20 years and many factors have changed. However, DWR is currently working on providing such estimates over the next few months and will provide them to the Task Force as they become available.