San Joaquin River Restoration Program

Water Education Foundation Tour

November 6 & 7, 2014

Overview of the Friant Division of the Central Valley Project and the San Joaquin River Restoration Settlement

San Joaquin River Restoration Area in relation to the Central Valley

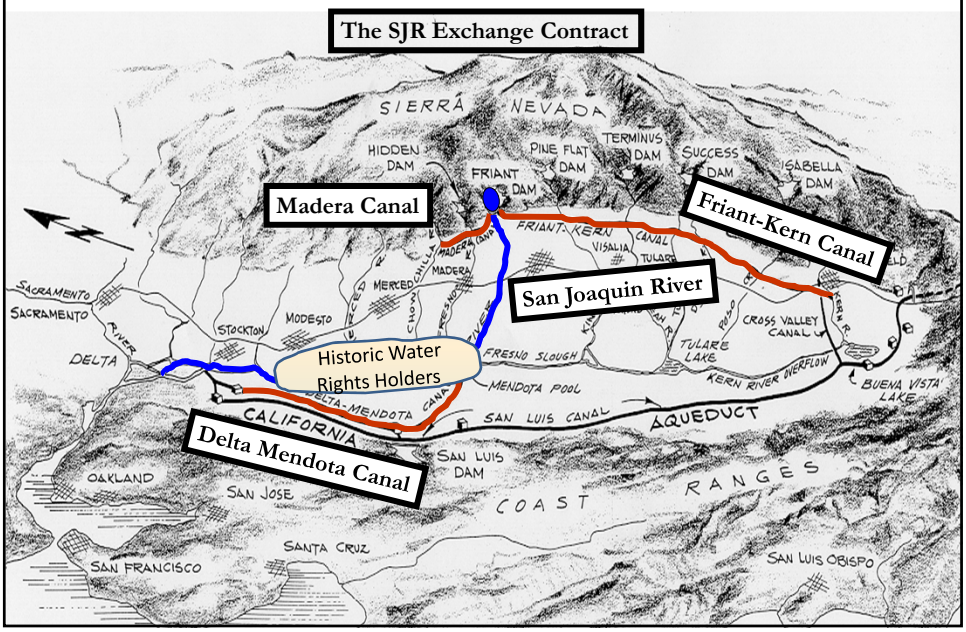
San Joaquin River History

- 1860-1880: Irrigation development; Miller & Lux water rights; first Mendota Dam and Sack Dam
- 1912-1914: Initial development of hydroelectric projects (Now: 8 dams; 611,000 AF Capacity)
- 1933: California Central Valley Project (including Friant Dam) approved by California voters
- 1937: CVP authorized by Congress to be a federal Reclamation project
- 1948: First deliveries to Friant Division

San Joaquin River History

- 1951-1959: Water rights litigation results in Rank v. Krug decision requiring 5 cfs at Gravelly Ford
- 1988: NRDC & others file lawsuit to challenge renewal of long term water supply contracts
- 1992: F&G Code §5937 violation added to complaint
- 1999-2003: Settlement negotiations occur but are unsuccessful
- 2005-06: Settlement negotiations are successful

How The Friant Division Works



The Exchange Contract

- Allowed construction of the Friant Division and irrigation of about 1 million acres
- Allowed the diversion of almost the entire flow of the San Joaquin River
- Provided a firm substitute water supply to the Exchange Contractors (CCID, FCWD, CCC, and SLCC)
- But the diversion of flows resulted in extirpation of salmon runs on the upper SJR

Friant Dam

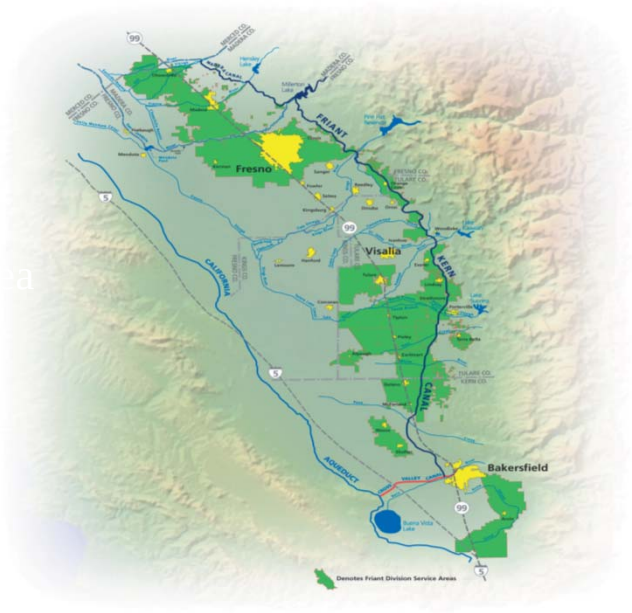
Inflow
1,800 TAF/yr

Millerton Lake
520 TAF

450,000 AF
Average Annual Flood Releases To SJR *

* Based on the past 30 years loss of approximately 14 million AF which is equivalent to approximately 93 years of water supply for the City of Fresno

Friant Division Service Area



Friant Division Facts

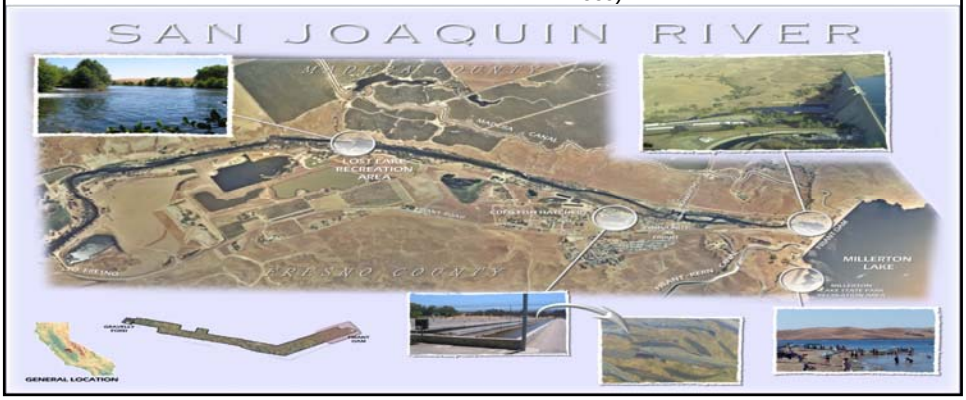
- The SJR is "flashy" (can be very wet or very dry) with an average annual supply of approx. 1.3 MAF available for delivery (pre-Settlement)
- There are 32 contractors (districts and cities)
- Provides water for 15,000 family farms and several cities
- Two class system:
  - Class 1 water: is the first 800 KAF developed that is available for delivery (usually for M&I use or for districts w/o access to g/w supplies)
  - Class 2 water: is the next 1.4 MAF developed (much of which is used for g/w recharge)
  - Some districts have only Class 1 supplies, some have only Class 2 supplies, and some have both Class 1 and Class 2 supplies

Friant Division Facts - continued

- Conjunctive Use Project – no significant surface storage available to carry water over to next year
- Groundwater acts as a form of carryover to be used in dry years, but not available for all districts
- Before Settlement:
  - A live stream had been required for about 40 miles below Friant Dam to satisfy riparian demands
  - Beyond that point, dry river bed except when flood releases were made

Reach 1: Friant Dam to Gravelly Ford (General Overview)

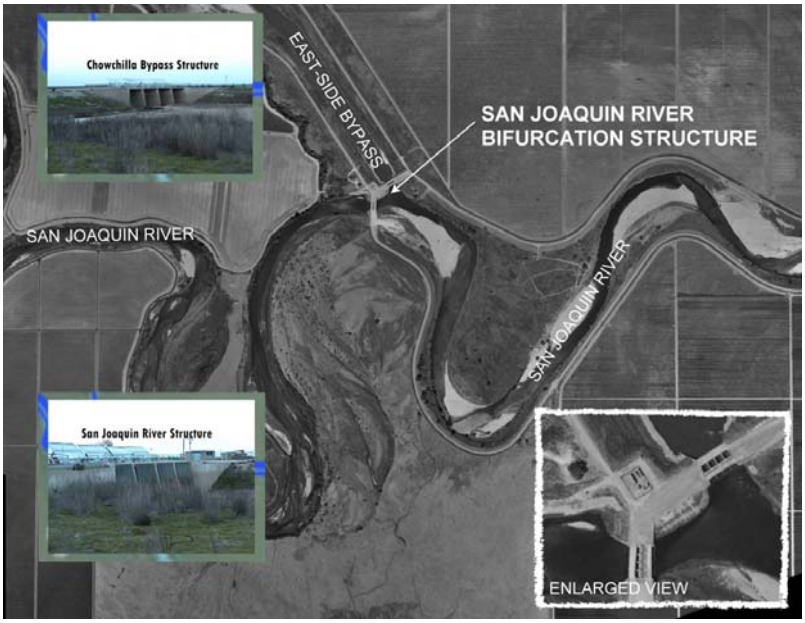
- Approximately 38 Miles
- Average channel width is 3,300 ft..
- Average channel slope is 0.00056
- Design capacity = 8,000 cfs
- Water flowing all year
- Extensive riparian vegetation
- Gravel mining & pits
- Potential spawning habitat
- Current location of fish hatchery
- San Joaquin River Parkway and Conservancy general plan (Land Use)



Source: Friant/NRDC SJR Draft Restoration Strategies for San Joaquin River Report

Reach 2A: Gravelly Ford to Bifurcation (General Overview)

- Approximately 12 Miles
- Average Channel width is 3,300 ft.
- Design capacity = 8,000 cfs
- Anabranched, meandering channel
- State flood flow protection
  - Levees
  - Bifurcation
  - East Side Bypass
- Little or no water
- Little or no riparian vegetation
- Location of 1999, 2000 & 2001 Experimental Pilot Projects



Reach 2B: Bifurcation to Mendota Dam (General Overview)

- Approximately 12 Miles
- Average Channel width is 3,300 ft.
- Design capacity = 2,500 cfs (actual capacity ~1,200 cfs)
- Local levee system
- Little or no water
- Little or no riparian vegetation
- Backwater effect from Mendota Dam

Reach 3: Mendota Dam to Sack Dam (General Overview)

- Approximately 23 Miles
- Average Channel width is 3,000 ft.
- Design capacity = 4,500 cfs
- Single threaded channel
- Water flowing all year (conveyance to Arroyo Canal)
- Water is imported from the Delta
- Extensive riparian vegetation

- **Sack Dam – Built during the Mid-1800's for Miller & Lux**
- **Located Approx. 86 River-miles Downstream of Friant Dam**

Reach 4A: Sack Dam to Sand Slough Control Structure (General Overview)

- Approximately 16 Miles
- Average Channel width is 2,300 ft.
- Design capacity = 4,500 cfs
- Bounded by Poso and Riverside Canals and local dikes
- Operationally dry (minus operational spills below Sack Dam)
- Relatively shallow groundwater feeding riparian vegetation
- Terminates into East Side Bypass

Reach 4B: Sand Slough Control Structure to Bear Creek (General Overview)

- Approximately 30 Miles
- Average Channel width is 2,300 ft.
- Design capacity = 1,500 cfs (actual capacity ~300 cfs)
- Operationally dry
- Relatively shallow groundwater and drainage tailwater feeding riparian vegetation
- Connectivity to East Side Bypass
  - Sand Slough
  - Mariposa Bypass
  - Bear Creek

Reach 5: Bear Creek to Merced River (General Overview)

- Approximately 18 Miles
- Average Channel width is 3,500 ft.
- Design capacity = 26,000 cfs
- Flow all year
  - Bear Creek
  - Salt Slough
  - Ag drainage
- Relatively shallow groundwater feeding riparian vegetation
- Backwater effect from Merced River
- Floodplain habitat opportunities
- Location of DF&G Hills Ferry fish barrier

Levees in the Area

- Lower San Joaquin Flood Control Project
  - Federally authorized in the 1940s
  - Constructed by the State in the 1950s and '60s
  - Operated and maintained by the Lower San Joaquin Levee District
  - Conveys flood flows through the area
  - About 193 miles of levees and associated structures
- Private Levees
  - Operated and maintained by adjacent landowners

SAN JOAQUIN RIVER RESTORATION PROGRAM

Settlement History

1942 - Friant Dam completed

1988 - Lawsuit filed challenging Reclamation's renewal of the long-term contracts with Friant Division contractors

2004 - Federal Judge rules Reclamation violated Section 5937 of the California Fish and Game Code

2005 - Settlement negotiations reinitiated

2006 - Settlement reached; implementation begins

2009 - Federal legislation enacted (Public Law 111-11); Interim Flow releases began October 1

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Settlement Goals

- Restoration Goal
  - To restore and maintain fish populations in "good condition" in the main stem of the San Joaquin River below Friant Dam to the confluence of the Merced River, including naturally reproducing and self-sustaining populations of salmon and other fish.
- Water Management Goal
  - To reduce or avoid adverse water supply impacts to all of the Friant Division long-term contractors that may result from the Interim Flows and Restoration Flows provided for in the Settlement.

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Settling Parties & Implementing Agencies

Settling Parties

- NRDC Coalition
  - 14 organizations
- Friant Water Authority
  - 29 water agencies
- Federal Government
  - Department of the Interior
    - Bureau of Reclamation
    - Fish and Wildlife Service
  - Department of Commerce
    - National Marine Fisheries Service
- State of California
  - Department of Water Resources
  - Department of Fish and Game
- Restoration Administrator

Implementing Agencies

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Settlement Funding Sources

Source	Amount
Friant Surcharge (average collected)	$5.6 million/year
Recovered Water Account Receipts (average collected)	$0.8 million/year
Unreleased Restoration Flows sales	unknown
Sales of Other Water and Property	unknown
Friant Capital Repayment (est. collected)	$225 million
Non-Federal Contributions	unknown
CVPIA Restoration Fund (maximum)	$2 million/year
New Federal Appropriations (maximum)	$300 million
State Funding (stated commitment)	$200 million

Deposited into the San Joaquin River Restoration Fund

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Restoration Goal Activities

- Increase flows from Friant Dam
- Improve channel and structures to convey flows and improve fisheries habitat
- Reintroduce spring-run and fall-run Chinook salmon

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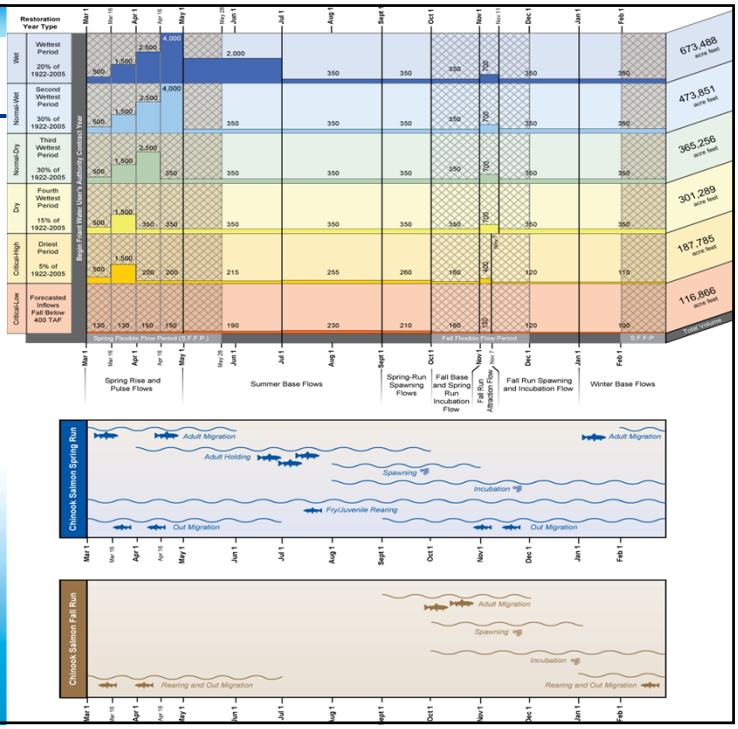
SAN JOAQUIN RIVER RESTORATION PROGRAM

Friant Release Schedule with Fisheries Migration Timing

- Interim Flows through 2013
- Restoration Flows began in 2014
- All flows released up to "then current" channel capacities



SAN JOAQUIN RIVER RESTORATION PROGRAM

Major Channel and Structural Improvements

- Settlement requires 10 specific channel and structural improvement projects to address:
  - Channel capacity limitations
  - Fish habitat limitations
  - Fish passage and entrainment issues
- Combined into 4 major projects
- 3 underway

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Reintroduction of Salmon

- Settlement requires reintroduction of spring-run and fall-run Chinook salmon
- Spring-run broodstock efforts began in 2012
- Permitting and approvals received Dec 2013 for direct release of spring-run to river
- First direct release of juvenile spring-run into the river in April 2014

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Water Management Goal Activities

- Water Accounting and Recovery Activities Underway
  - Restoration Flow Guidelines
  - Recovered Water Account implementation (allocated 680,440 acre-feet to date)
  - Recapture and re-circulate Interim and Restoration flows
- Physical Projects in Planning
  - Friant-Kern Canal Capacity Restoration Project
  - Madera Canal Capacity Restoration Project
  - Friant-Kern Canal Reverse Flow Project
  - Financial assistance for groundwater banks

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Revised Implementation Framework

- Some actions required by the Settlement are unavoidably behind schedule
- Implementing Agencies, Settling Parties, and Third Parties are working to develop a revised schedule that will:
  - Address the requirements of the Settlement for expeditious action
  - Meet the requirements of the legislation to minimize impacts on third-party interests
- Revised schedule and budget will be realistic and achievable
- Will provide common vision / path forward for implementing the Program
- Will identify Implementing Agencies roles and responsibilities and have more accountability by all agencies
- Target completion is spring 2015

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Interim Flows in Reach 2A

- The Settlement is a substantial change in the last 60 years of operations of the San Joaquin River and CVP Friant Division.
- We are working to implement the Settlement in an open, transparent, and collaborative process.

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Benefits of Settlement to the Non-Federal Parties

Benefits of Settlement to Friant Contractors

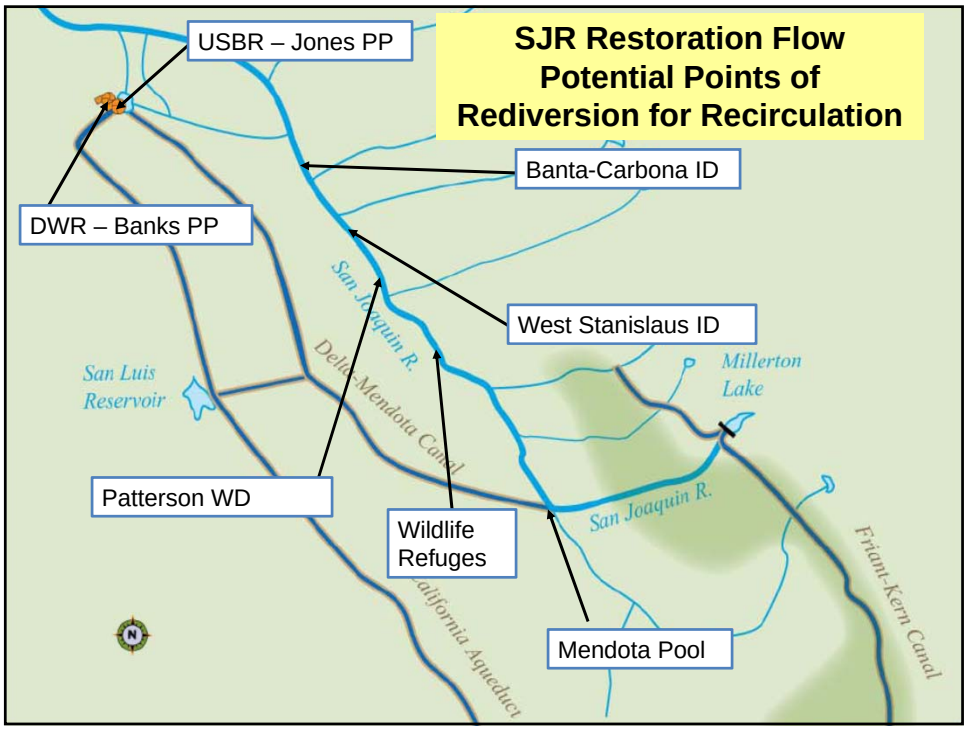
- Water Supply Certainty – River releases are prescribed and a set amount of water is designated for fish;
- Financial Certainty – Friant financial commitments limited to payments already being made;
- Water Recovery Opportunity – Equal goal to recover water released for fishery purposes;
- Water Management – Greater ability to transfer water by relief from certain provisions of CVPIA;

Benefits of Settlement to Friant Contractors

- Reliable Water Contracts with Reclamation;
- Ensures that the federal and state governments are partners and committed to the restoration and water management goals and funding; and
- End of Litigation – Settlement ended all aspects of the *NRDC v. Rodgers* litigation including ESA and Reclamation Law issues and claims, and protects Friant Contracts from being invalidated by the federal Court.

Water Management Goal

- Equal Goal of the Settlement
- The Secretary of the Interior is required to
  - Develop and implement a plan for recirculation, recapture, reuse, exchange or transfer of water to mitigate impacts
  - Implement a Recovered Water Account program to reduce impacts
  - Make water available in wet years at reduced prices
  - Provide funding assistance for local groundwater recharge and banking projects



Role of RA and TAC in Settlement Implementation

Implementation of the Settlement

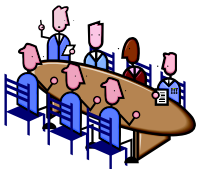
To assist in implementation, the Settlement provides for:

- A Restoration Administrator

  Appointed by Friant and NRDC

- A Technical Advisory Committee

  Appointed by Friant and NRDC



Role of the Restoration Administrator

- Recommendations for submittal to the Secretary on:
  - additional measures not provided for by the Settlement to enhance the success of achieving the Restoration Goal
  - the need to provide for Buffer Flows during a particular Restoration Year
  - acquisition of additional water from willing sellers over and above Settlement water year allocations

Role of the RA - continued

- Recommendations for submittal to the Secretary on:
  - measures for reintroducing of spring run and fall run Chinook salmon
  - the program of Interim Flows designed to collect relevant information concerning flow temperatures, fish needs, seepage losses, recirculation, re-capture and re-use of water (Interim Flows ended in 2013)
  - the manner in which Restoration Flow hydrographs shall be implemented and when Buffer Flows shall be needed

The Secretary of the Interior is to consult with the RA on:

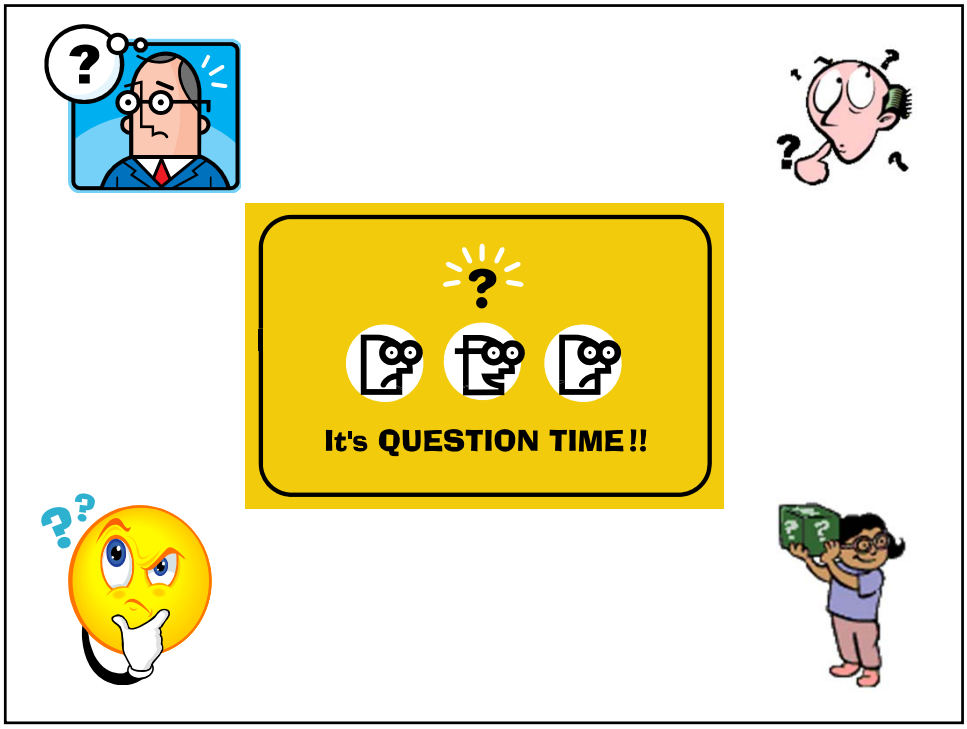
Completion of river improvements specified in Settlement Paragraph 11

Reintroduction of Chinook salmon at the earliest possible date after commencement of sufficient flows and issuance of necessary permits

Determination of existing channel capacity and impact of flows on channel construction

Technical Advisory Committee

- A Technical Advisory Committee (TAC) was established to assist and advise the RA on implementation of the Settlement
- Made up of 6 members (two named by Friant, two named by NRDC, and two selected jointly by Friant and NRDC) along with two non-voting, *ex-officio* members (representing and appointed by DWR and DFW)


It's QUESTION TIME !!