

RECLAMATION

Managing Water in the West

Sacramento River Temperature Task Group



2010 OCAP Annual Review

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U.S. Department of the Interior
Bureau of Reclamation

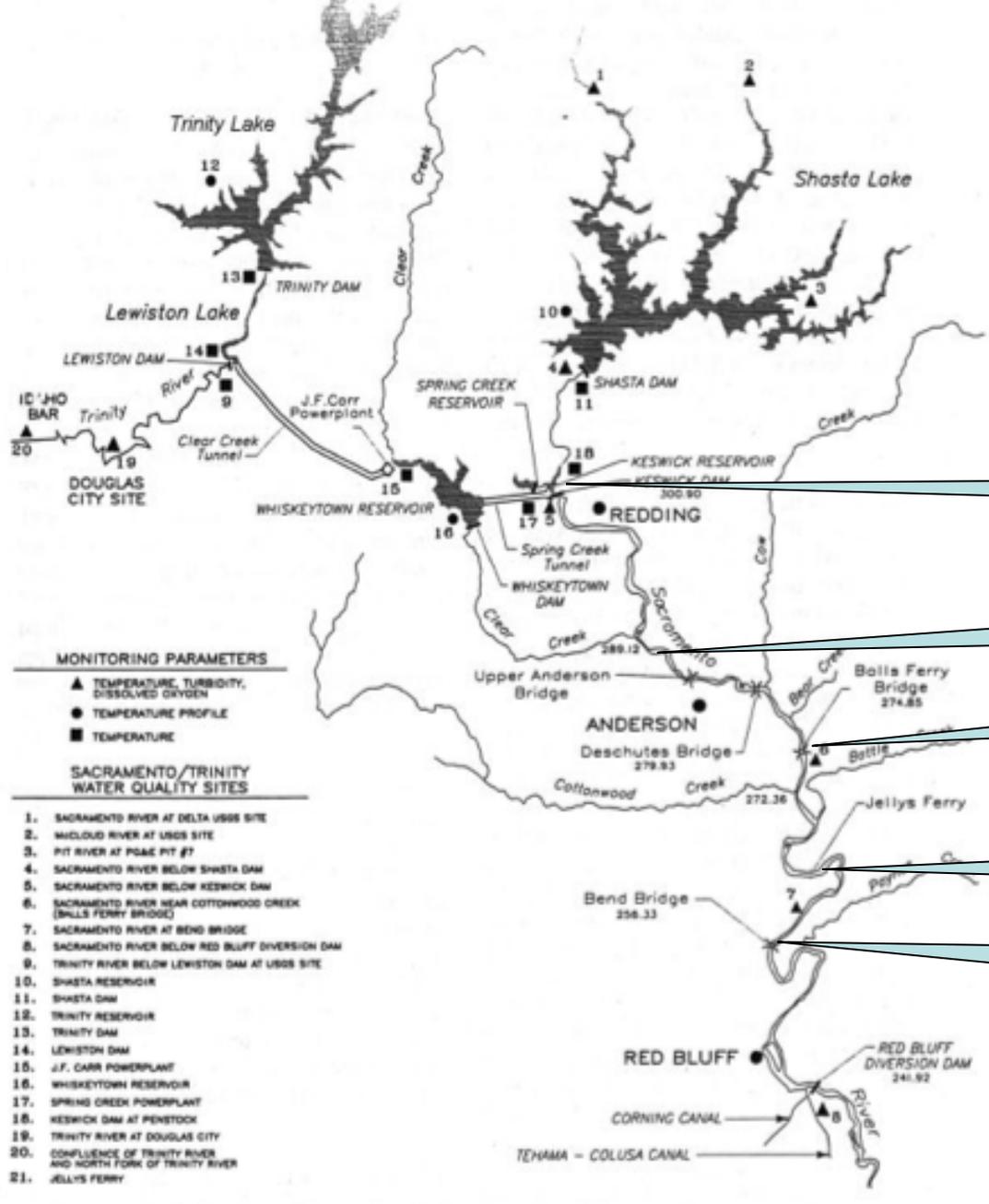
Role of the Sacramento River Temperature Task Group (SRTTG)

- Established in 1990 by the State Water Resources Control Board in Water Rights Order(s) 90-5 and 91-01.
- The group's mandate is to formulate, monitor, and coordinate temperature control plans for the upper Sacramento and Trinity Rivers.

Role of the Sacramento River Temperature Task Group (SRTTG)

- The group's objectives are to provide the best in-river temperatures possible for the protection of winter and spring-run Chinook salmon and Central Valley Steelhead.
- Release rates, the Shasta Dam temperature control device (completed in 1997), and Spring Creek Power Plant releases are the primary tools used to manage instream temperatures.

Northern CVP Network



Keswick Dam, RM 0

Airport Rd: RM 18

Balls: RM 27

Jellys: RM 36

Bend: RM 45

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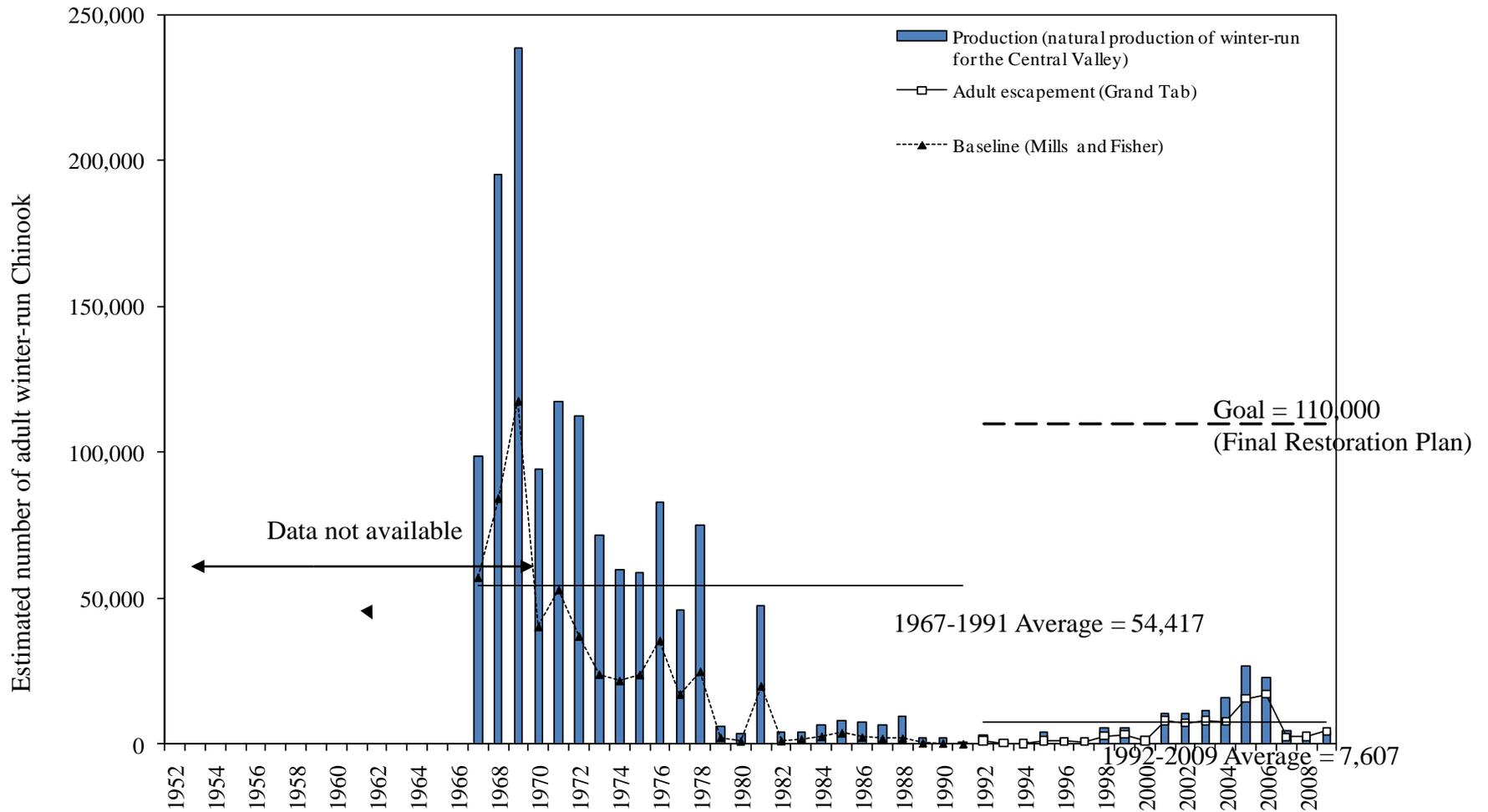


Figure 3. Estimated yearly adult natural production, and in river adult escapements of winter-run Chinook salmon in the Central Valley rivers and streams. 1992 - 2009 numbers are from CDFG Grand Tab (March 10, 2010). Baseline numbers (1967-1991) are from Mills and Fisher (CDFG, 1994).

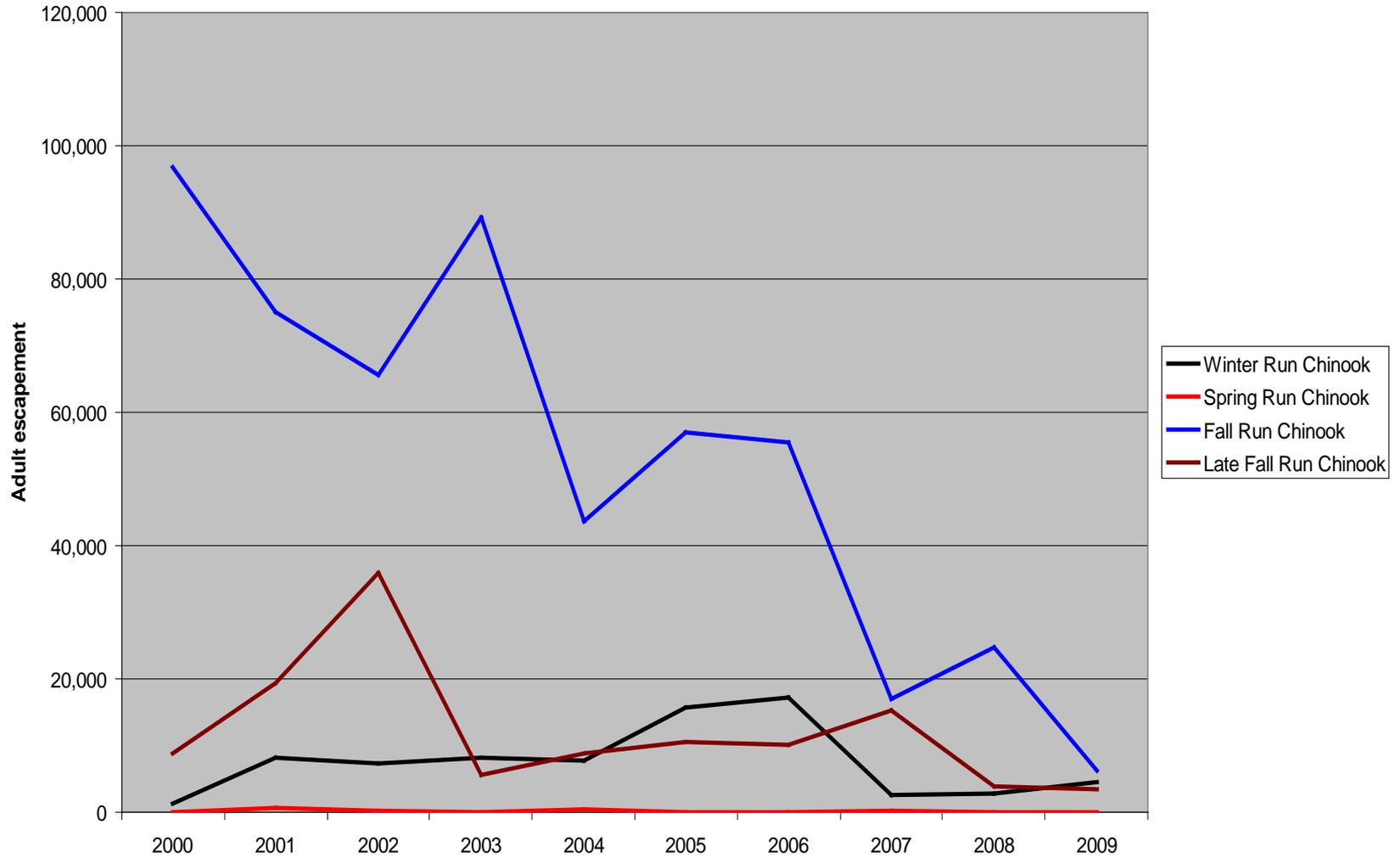
Recent Trends in Chinook Salmon Escapement – Mainstem Sacramento River

	Winter run	Spring run	Fall run	Late fall run
2000	1263	71	96,688	8,751
2001	8120	736	75,152	19,276
2002	7360	273	65,690	36,004
2003	8133	0	89,229	5,494
2004	7784	394	43,604	8,824
2005	15730	30	57,012	10,524
2006	17205	0	55,468	10,171
2007	2487	248	17,061	15,341
2008	2725	52	24,759	3,964
2009	4537	0	6,343	3,489

in-river escapement estimates for naturally-spawning salmon (GrandTab 4/22/10)

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Mainstem Sacramento River instream escapement
2000 - 2009 (GrandTab Data)



The SRTTG is comprised of members from the following agencies:

- US Bureau of Reclamation
- US Fish and Wildlife Service
- Ca Department of Fish and Game
- US National Marine Fishery Service
- Ca State Water Resources Control Board
- Western Area Power Administration
- Hoopa Tribe
- Yurok Tribe

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SRTTG Annual Process

- The SRTTG meets on at least a monthly basis during the temperature control season from April through October.
- The initial SRTTG meeting usually occurs in February to go over Reclamations' initial temperature operations forecast.
- The frequency of meeting after the initial February meeting will be determined by the hydrology.

SRTTG Process cont.

- The SWRCB WR Order 90-5 requires Reclamation to submit a Temperature Operations Plan to the SWRCB at the beginning of the temperature control season (April)**
- The SWRCB will then review the Plan and either accept or provide comments back to Reclamation to address**
- This plan is developed as a result of consultation with the SRTTG on appropriate temperature compliance location and tentative releases required to meet that objective**

SRTTG Process cont.

- Once into the temperature control season, the SRTTG meets as often as necessary but a minimum of monthly, as needed to coordinate operations to meet the temperature compliance location.
- It may become necessary to move the compliance point upstream, this action would have to be agreed upon by the SRTTG and submitted to the Board for approval.

NMFS BO RPA's

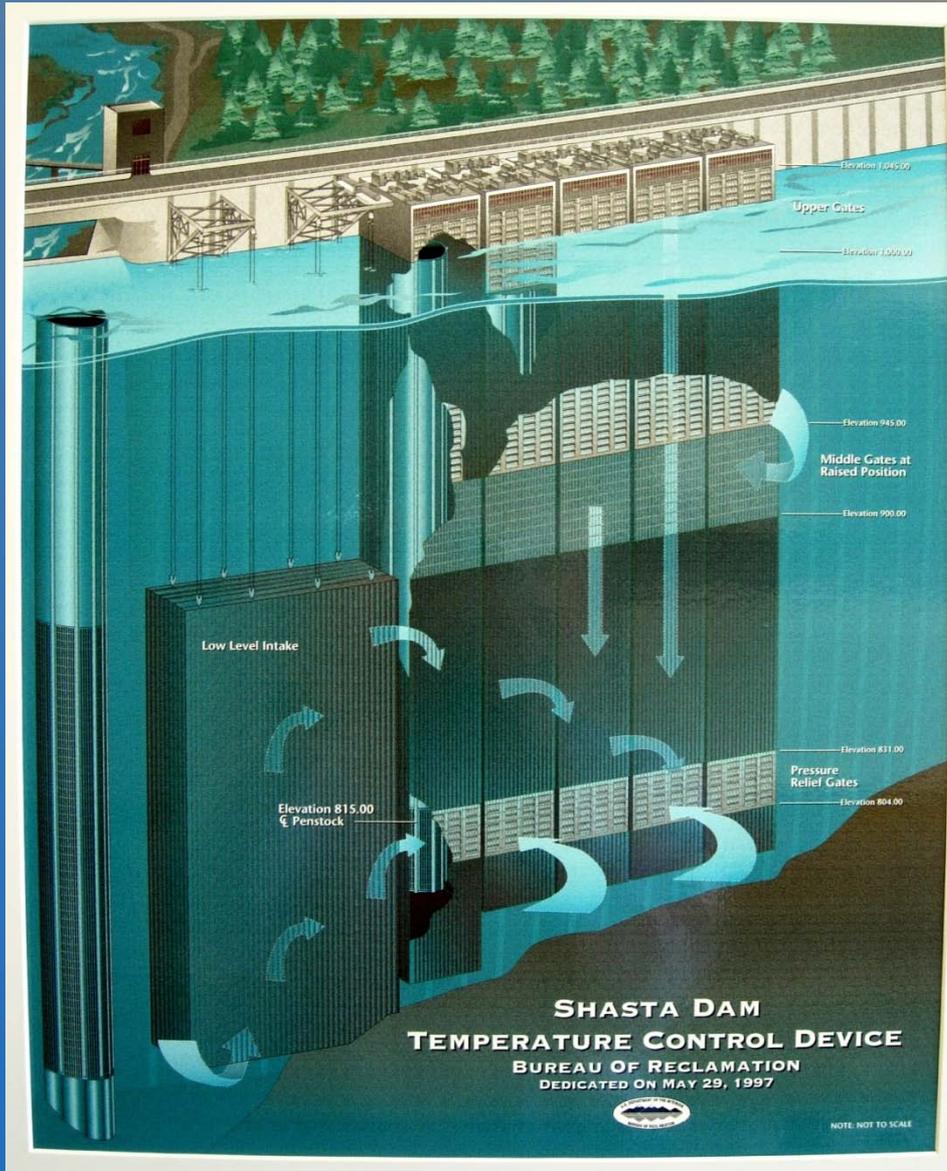
- In general, the NOAA RPA's have adopted the protections in WR 90-5 and added provisions to optimize the use of the cold water pool without sacrificing the potential for cold water management in a subsequent year.
- Established a set of long-term performance measures (10 year horizon) for Shasta end-of-September (EOS) storage targets and temperature compliance points between Clear Creek and Bend Bridge.

NMFS BO RPA's

- **Established procedures for developing November through February flow schedules based on variable Shasta EOS storage conditions.**
- **Established procedures for developing March through May 15 flow schedules based on forecasted Shasta storage conditions and variable temperature compliance points.**
- **Require the development and implementation of a Temperature Management Plan by May 15 for the May 15 through October 31 period.**

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Shasta TCD



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Temperature management in the summer and fall of 2009

- **Pre-conditions:** Due to low storage, a small cold-water pool, and redd surveys that indicated winter run spawning was taking place above Airport Road, the SRTTG set the 56 °F compliance point at Airport Road.
- **We chose Airport Road** because temperature modeling runs indicated Reclamation would be able to maintain temperatures there through October.

Temperature management in the summer and fall of 2009

- The actual EOS storage in Shasta was 1.77 MAF and instream temperatures in September and October ranged from 55 - 58 F.
- In response, Reclamation released 500 – 1,500 cfs through the lower river outlets to access the last remaining cold water (power bypass) between September 23 and November 17.

Temperature management in 2010

- Over the winter of 2010, Shasta Reservoir received above normal inflow and filled. This restored the cold water pool, and allowed for more aggressive temperature control operations during WY 2010.
- In WY 2010 the SRTTG established the temperature control point of 56° F at Jelly's Ferry (approximately 35 miles below Keswick Dam) for the majority of the temperature control season.

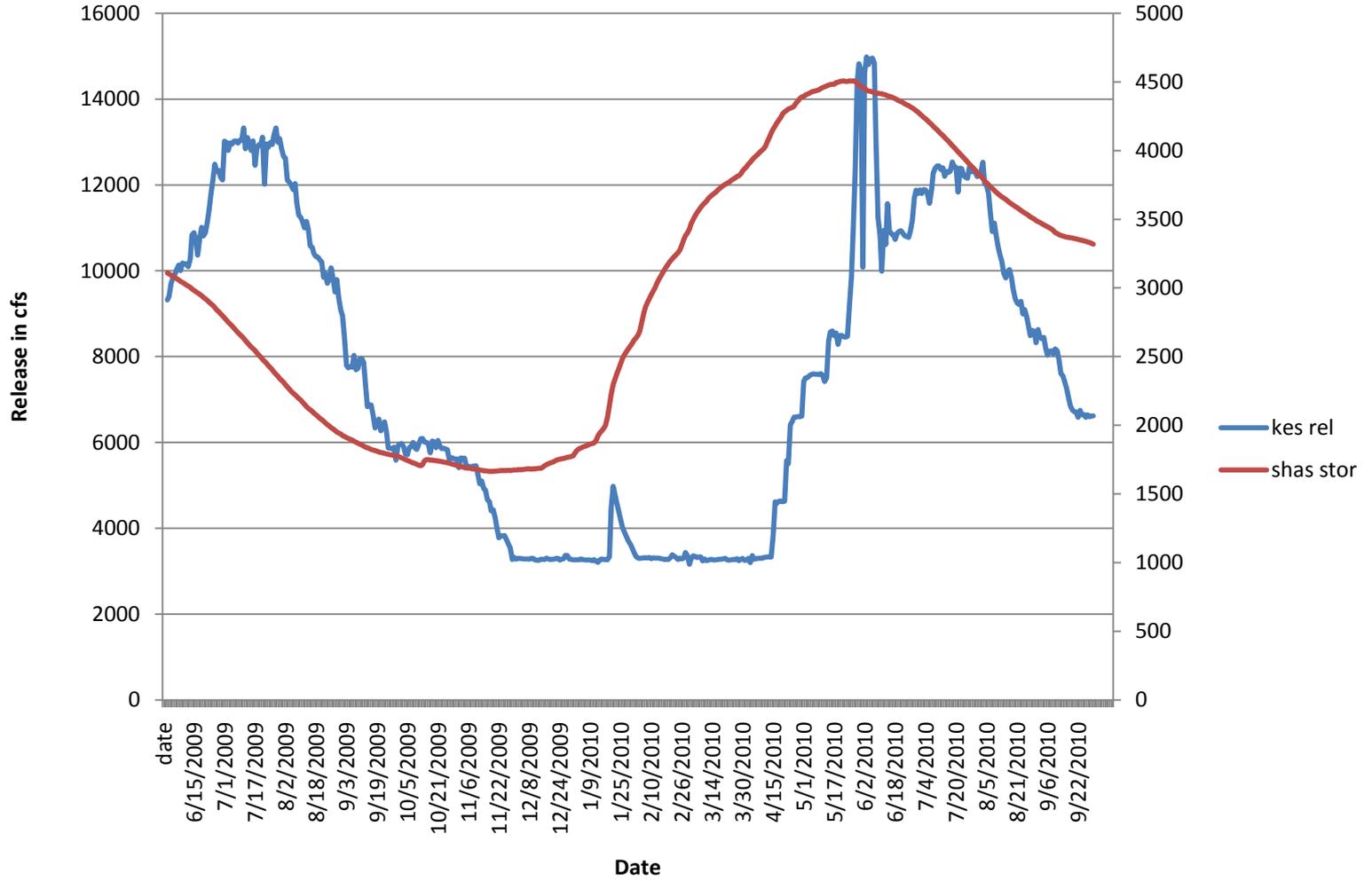
Temperature management in 2010

- Due to the recovery of Shasta Reservoir storage over the winter of 2010, Reclamation was able to operate to a temperature control target of 56°F at Jelly's Ferry during the temperature control season (with minor exceedences).
- EOS carryover storage at Shasta Reservoir for WY 2010 was 3.32 MAF, a significant recovery from WY 2009.

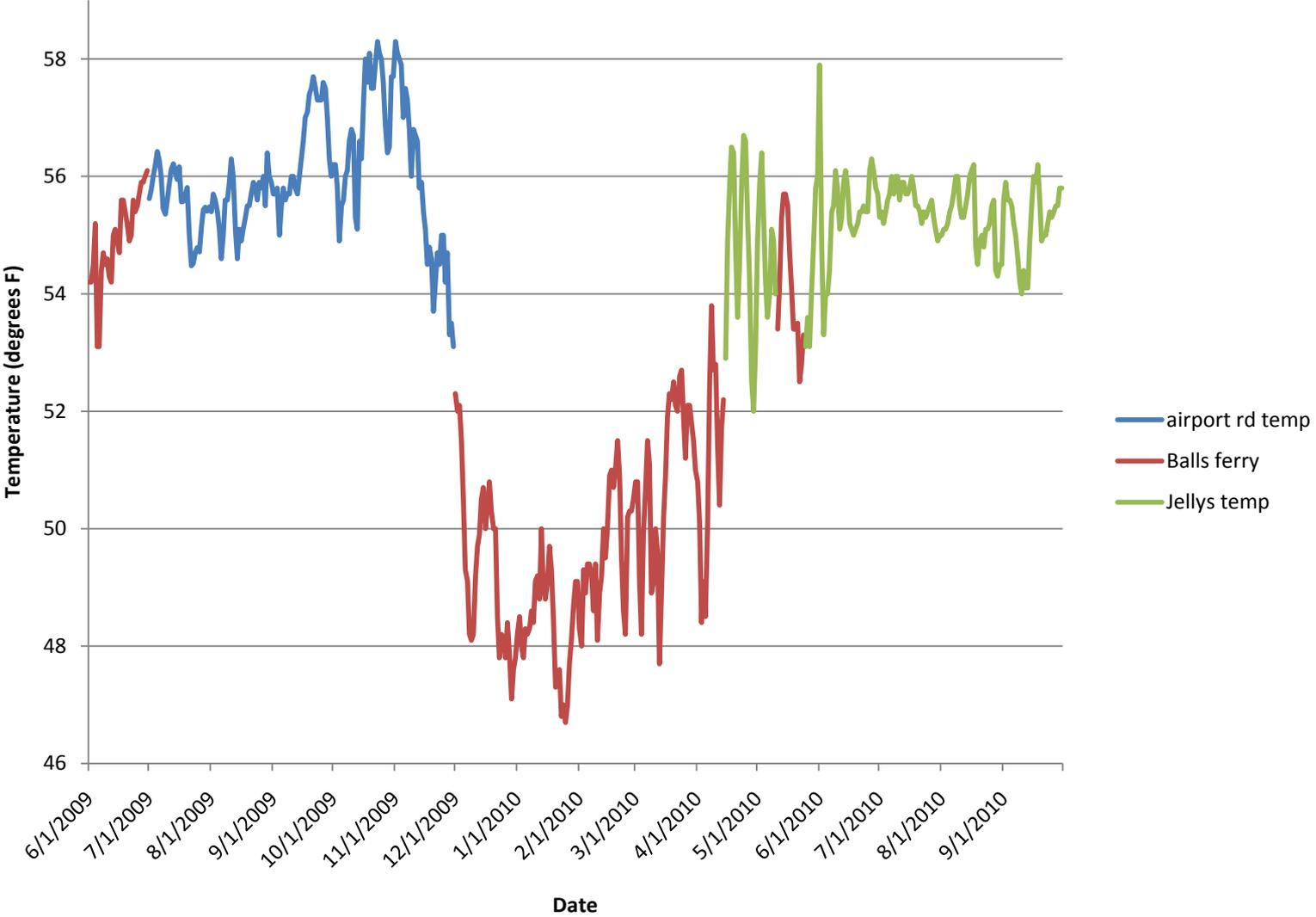
Special Conditions

- **Airport Rd Compliance in 2009 was estimated as a surrogate at Jellys Ferry (Jellys Ferry - .5 degree F).**
- **Spring Creek Arm Dredging Project was completed spring 2010**
- **Shasta TCD middle gate #3 was repaired summer 2010**

Release to Sacramento River



Sacramento River Temperatures



Questions???

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