Public Comment
Dry Year Report
Deadline: 10/15/14 by 12:00 noon

RECEIVED
11-13-14
SWRCB Clerk

Northern California Water Association

LATE COMMENT

To advance the economic, social and environmental sustainability of Northern California by enhancing and preserving the water rights, supplies and water quality.

Drought Planning in the Sacramento Valley: Recommendations for 2015

November 13, 2014

The Northern California Water Association (NCWA) and Sacramento Valley Water Users appreciate the various efforts that have been made to help California and its water suppliers during these dry years. The administration adapted quickly in its approach to the drought this year, including: 1) the Central Valley Project (CVP)/State Water Project (SWP) Drought Operations Plan, 2) the related Temporary Urgency Change Permit (TUCP), and 3) following the priority system for water rights, including issuing curtailment notices and orders for post-1914 water rights. These operations and institutional approaches have been instrumental in providing water this year for various beneficial purposes in the Sacramento Valley--including cities and rural communities, farms, fish and birds--based on available water supplies and water right priority. While the actions in 2014 were reactive to the dry conditions, we encourage the administration to make more proactive decisions as we enter 2015.

The ongoing drought has cost the Sacramento Valley hundreds of millions of dollars in lost farm production, diminished wildlife habitat and reduced urban water supplies. The water leaders in the Sacramento Valley met in January 2013 for a strategic session on planning for future droughts. Since that time, our drought team has been actively working to ensure water supplies for all these beneficial purposes in the Sacramento Valley, including meeting with State Water Resources Control Board (SWRCB) members and staff many times this year to work through the complex issues facing the Sacramento Valley.

Although we are still working with SWRCB staff on providing fall and winter water for waterfowl and rice decomposition, we are primarily focusing on planning for 2015 operations. In this regard, our August 20, 2014 letter to the SWRCB expressed our appreciation for the SWRCB's inclusion of paragraph 22 in SWRCB Resolution 2014-0031. Our letter also reiterated our desire to immediately work with the SWRCB to learn from the past several years, to develop strategies that will help provide water consistent with the water rights priority system for various beneficial purposes in the Sacramento Valley in 2015, and to better prepare for future dry years.

In planning for dry years, it is important to fully recognize and understand the water management dynamic in the Sacramento Valley and how the water resources managers provide water for various beneficial purposes, including cities and rural communities, farms, fish, birds and recreation. The ability to use surface water in the Sacramento Valley is essential to supply these various beneficial purposes. Surface supplies are also critical to sustainable groundwater management in the Sacramento Valley, including groundwater recharge opportunities and lessening the demand on groundwater pumping. Importantly, in 2014, water supplies were available for these beneficial purposes by honoring and following the priority system for

California water rights, including the various contracts that provide the foundation for water management in the Sacramento Valley and throughout California.

As the administration and SWRCB plan for 2015 and future dry years, we urge the SWRCB to consider the following:

A. CVP/SWP Operations Plan

The operations of the Central Valley Project (CVP) and State Water Project (SWP) are important to the Sacramento Valley and are a key foundation for water management decisions throughout the region and state. The water agencies in the Sacramento Valley and their technical consultants are modeling various operations for 2015 to assist the federal and state agencies in operational scenarios for the projects. Although the process started slowly for the 2014 water year, it is important to recognize that the Drought Operations Plan, while not perfect, was generally accurate and provided water suppliers and the SWRCB with sound information necessary to make water management decisions and provide reliable water supplies this year. In the Sacramento Valley, the water managed as part of CVP and SWP served triple duty (fish, farms and birds), while water was also available for various purposes downstream and in the Delta. The attached documents show 2014 operations in the Sacramento Valley.

As we are already planning for the 2015 water year and future dry years, we offer the following thoughts on how to make this coordination with the CVP and SWP more effective. These proposed actions follow a similar path outlined in Jay Lund's "Drought Curtailment of Water Rights – Problems and Technical Solutions," pages 4-5.

1. **Facilitate Earlier Coordination Among Sister Agencies.** SWRCB staff should immediately begin meeting with the project operators to better understand how the projects can perform under different hydrologies. The SWRCB's revised order WR 2014-0029 provides specific dates for the project operators to submit their updated operations plan to the SWRCB Executive Director. Here, it is important that the sister agencies respect their roles and responsibilities. In our view, the project operators, with some initial, timely, direction from the SWRCB as described below, have the expertise and experience to develop a sound operations plan for 2015 that will work for the Sacramento Valley.

2. **Provide Direction on TUCP.** As part of this earlier communication, the SWRCB should provide some early information on potential standards to the project operators on the requirements expected in 2015, including:

    a. outflow requirements;

    b. export provisions in a Temporary Urgency Change Permit (TUCP); and

    c. depletions in the Delta and assumed water use for delta diverters (if any).

    We believe in-Delta operations in 2014 were inefficient and could be improved. This in turn affected upstream storage supplies, as additional water released from storage was depleted in the Delta for various purposes that we believe was unnecessary and, in some cases, unauthorized. As the SWRCB considers its 2015 priorities, we encourage it to

focus on more efficient use of water in the Delta.

3. **Develop Rationale Sacramento River Temperature Requirements.** With respect to the process for setting temperature requirements, we sent a letter on December 12, 2013 requesting a water supplier representative on the Sacramento River Temperature Task Group (SRTTG). This is still a closed process that needs to be broadened to include suppliers managing water in the Sacramento Valley. SWRCB staff has reported that operational decisions are not made in the SRTTG and are instead elevated to an "operations group" that is separate and apart from Board Orders 90-05 and 91-1. The Sacramento River Settlement Contractors (Contractors) are requesting to participate in the "operations group" since decisions made by the project operators or the SWRCB could directly affect the Contractors' water supplies, diversions, and water rights. The Contractors will be working with MBK to develop temperature models that will help operate the system this year in a more real time manner. We are also working closely with the Nature Conservancy, American Rivers and Golden Gate Salmon, who will also provide valuable counsel to the SWRCB.

   Water agencies in the Sacramento Valley coordinated with the CVP and SWP operators in 2014 to meet temperature requirements and flow targets. Under WR 2014-0029, Reclamation will provide a temperature management plan for the Sacramento River starting on January 15. It will be critical that we move toward real time management based on temperatures in the Sacramento River; otherwise, too much water is lost from storage that does not benefit the intended purposes. Again, last year, the water agencies on the Sacramento River worked with the project operators and the fishery agencies to voluntarily change the timing of water diversions to benefit salmon and meet various beneficial purposes. Similar coordination would bring great value to the temperature management process.

4. **Explore Physical Solutions.** In hindsight, it appears to us that the barriers in the Delta would have helped with the Delta inefficiency discussed above, and could have preserved more water in storage. We encourage the SWRCB to first perform an analysis of how much water the barriers would have preserved in storage. With the benefit of this analysis, the SWRCB should further explore barriers with the Projects and other physical options to use water more efficiently and save water, and the SWRCB should be poised to help with the approval process. This includes better understanding any concerns by Delta water users and the necessary efforts to avoid these impacts.

B. Curtailment Process

Based on our experiences in the Sacramento Valley this year, we provide the following thoughts on the curtailment process in future years.

1. **Follow the Priority System**. We appreciate the SWRCB's commitment in 2014 to the water right priority system and making decisions based on water availability. For 2015 and future years, we encourage the SWRCB to follow the same approach in Water Code §1058.5 and implement a process "to require curtailment of diversions when water is not available under the diverter's priority of right…." From our perspective, this approach is orderly, will avoid chaos associated with other approaches, and will work well for the Sacramento Valley, particularly if the SWRCB is able to develop a sound water

availability analysis that truly reflects the Sacramento Valley, as discussed in more detail below. On the other hand, the process to order curtailments on Deer Creek, which focused on waste and unreasonable use, is in our view, neither an effective or particularly thoughtful way to proceed with water allocations in the Sacramento Valley. We believe there is a better way to provide fishery flows, as we discuss below.

2. **Refine the Water Availability Analysis.** MBK Engineers and Steve Grinnell have been working with SWRCB staff to align the water availability curves with actual and projected water supplies and demands in the Sacramento Valley. This alignment is central to an effective curtailment process. As we understand it, the SWRCB relies on information from DWR's Bulletin 120 forecast, which during normal years appears consistent with hydrology, mainly since more data exists in these year types. However, for 2014, we saw that the runoff forecasts prepared by DWR uses historical averages for depletions and diversions instead of actual data and delivery schedules which resulted in under-predicting actual runoff and flows.

   The October 15, 2014 MBK letter on dry year reports and the Marc Van Camp Declaration for the July 2, 2014 workshop are very helpful in framing these issues. As the SWRCB paragraph 22 suggests, "the primary objective is to improve the State Water Board's and the water users' confidence in the technical tools and analysis that will be used for making determinations on water availability relative to water rights priority." We look forward to further discussions to improve the accuracy of the SWRCB's analysis, particularly improvements in the estimates of the demands in the system so that the SWRCB's demand estimates recognize monthly variations in demands, avoid double counting the same demands, and do not include demands for non-consumptive uses. With these improvements, the SWRCB's demand estimates will hopefully have enough precision so the SWRCB can curtail specific tranches of water rights (i.e., 1976 to 2014) in future years without blanket curtailment notices.

3. **Appropriate Timing**. The SWRCB sent a notice to water right holders on January 17, 2014 that curtailments could be expected if dry conditions continue. Although water right holders did not like receiving this notice, it provided advance warning to help people plan for the year. (If appropriate in 2015, we encourage a similar notice.) As the year developed, however, the SWRCB was slow in sending the notices for curtailment, waiting until May 27, 2014. This delay occurred despite our group providing technical information that supported such curtailments earlier in the year. Appropriate timing of curtailments is essential for planning in the Sacramento Valley. Additionally, if the Board is considering limiting diversions in the delta, notices should be sent to those water right holders or claimants at the same time.

4. **Health and Safety.** In our view, the abstract manner in which the SWRCB attempted to address public health and safety issues in 2014–such as through the allowance for Delta pumping in the CVP/SWP temporary urgency orders–increased tension among water users and impeded productive discussions about possible transfers without providing any real benefits to water suppliers. As a helpful starting point, the SWRCB, working with its sister agencies, should identify communities truly at risk for water supplies, both short-term and long term. Strategies for assuring water for these communities, most of which are not reliant on the CVP, SWP or other agency supplies, will be dependent upon each situation and can then be appropriately tailored. Adhering to the water right priority

system is critical to these efforts and the SWRCB should identify its authorities for meeting these needs. As an example, the SWRCB was considering setting storage targets in Lake Shasta, a CVP facility, and considering deliveries water from Shasta to communities not within the CVP place of use, yet no discussion occurred about how legally the Board would accomplish this. If such actions are being considered for 2015, the Board staff should be notifying the CVP and SWP operators and their respective users of the authorities the Board is considering. Absent trumping existing water rights, project operations, and contracts, the SWRCB should allow for voluntary water transfers to meet the potential shortages that may exist.

5. **Protection of Water Releases from Storage.** Term 91 was imposed on May 18 this year and appeared to be very effective in the Sacramento Valley. We encourage the SWRCB to continue to use a real time system with respect to Term 91.

6. **Fully Utilize Complaint Process**. We appreciate the SWRCB developing its complaint process that is available on the website at: http://www.waterboards.ca.gov/waterrights/water_issues/programs/enforcement/complaints/index.shtml. This process is very important for several reasons. First, it provides a public process to raise legitimate complaints for actions that affect senior water rights. Second, it allows the SWRCB more flexibility in administering the curtailment process, by relying on senior water right holders to raise issues rather than anticipating every water right that could possibly be affected by water use in the system. We encourage the SWRCB to rely upon this program and more visibly announce the website and the opportunities to file a complaint. The SWRCB should also consider more traditional methods (such as the newspaper) of announcing this process for complaints in more remote areas of the state.

7. **Flexible Process to Lift Curtailments**. We appreciate the SWRCB's flexibility in establishing a process to temporarily lift curtailments this fall based on storm events, including a real time on-line system. We also support the long-term lifting (that could have started on November 1) for this year and in future years, as detailed in the October 15 and October 31, 2014 MBK letters. The SWRCB should recognize the importance of lifting the curtailments to facilitate storage of water after the significant reduction in irrigation demand by direct diversion. The fact that water right holders of storage projects, including the CVP and SWP, must comply with all terms and conditions of their water rights, including minimum instream flow, together with the rapid change in water availability and the complaint process, should help the lifting of curtailments during this time period.

8. **Tributary Regulations**. We were very disappointed with the way the emergency regulations emerged for the three tributaries in the Sacramento Valley, including Mill, Deer and Antelope Creeks. As we stated in our May 19 comments to the SWRCB, we believe that a categorical declaration and sweeping determinations that every diversion along a waterbody is per se unreasonable is not constitutional, is not a particularly thoughtful approach to serving beneficial purposes and will not be effective in the long-term to meet beneficial purposes in the region. There are flow arrangements on nearly every watercourse in the Sacramento Valley, which are all focused upon instream flows while maintaining other uses of water (see attached). We encourage the SWRCB, in cases where it believes there are specific needs, to engage the leaders in the watershed to develop solutions to meet those needs. When necessary, the SWRCB could pursue

targeted enforcement proceedings against water users who have allegedly violated these legal requirements. The SWRCB could also encourage parties to work with the fishery agencies to develop physical improvements, such as deepened channels, as a first option before reallocating water. In addition, we believe that, where the SWRCB takes action to implement what it believes are necessary streamflows for sensitive fish to the significant detriment of water users, the SWRCB, along with the resource agencies, correspondingly accepts a heightened responsibility to ensure that the relevant fish are actually present in the affected areas and to not apply the curtailments when those fish are not present.

9. **Delta Water**. The recent correspondence and workshop on water use in the Delta raised many important issues before the SWRCB. With respect to the Sacramento Valley, it is important to note that the Department of Water Resources (DWR), under its contract with the North Delta Water Agency (NDWA), has an obligation to provide water supplies for various water users in the North Delta. For other Delta water users south of the NDWA, the SWRCB has consistently found that water rights on the Sacramento River system should not be curtailed for those southern Delta water users' benefit, given the SWRCB's determination of the source of those users' water rights. (See e.g., Order WR-89-8.). We encourage the Delta Watermaster, working with the SWRCB staff, to develop a <u>focused</u> enforcement strategy for water rights that addresses these issues in a narrow and defensible manner. The SWRCB January 1978 report also provides several recommendations that are still salient today and should be considered by the SWRCB.

C. Enforcement

We have been very surprised by the lack of SWRCB enforcement in 2014 against non-reporting and possibly illegal diversions of water. The sanctity of the SWRCB water rights process is dependent upon aggressive enforcement with appropriate due process. The stated purpose of the emergency regulations for post-1914 water rights was a more effective ability to enforce—yet there has been no or little enforcement as a result. Within the water suppliers we represent, there were many water right holders who fully complied with the SWRCB process to curtail water rights in 2014, which had significant economic and environmental consequences for them and their area. To the extent other water right holders have not complied with the SWRCB's notices and orders, we encourage the SWRCB to pursue more aggressive investigations and enforcement.

D. Transfers

The SWRCB has generally done a good job in approving water transfer petitions over the past several years, which we have acknowledged. On the other hand, the SWRCB has not relied upon water transfers as part of its drought strategy in a very effective manner. For the past several droughts, transfers have served as a very effective tool to fill the gaps between supplies and demands in a non-confrontational manner that works within the SWRCB priority system. In our view, the SWRCB, by encouraging and facilitating transfers, can help achieve many of its objectives that it seems to be pursuing through health and safety and safe drinking water policies.

Thank you for the opportunity to provide these thoughts. The Sacramento Valley water resources managers and counsel look forward to discussing these issues in more detail with you. Please call David Guy at 916.442.8333 if you have any questions or thoughts.

Managing the Central Valley Project in the Sacramento Valley for Multiple Purposes and Benefits

May 2014

The Bureau of Reclamation (Reclamation), in consultation with the National Marine Fisheries Service (NMFS) and the State Water Resources Control Board (SWRCB), can operate the Central Valley Project (CVP) this year to serve multiple benefits (fish, farms and birds) in the Sacramento Valley; to provide water for various Delta purposes, and plan for next year's carryover storage, even if the next year is dry. This effort also requires close coordination with the Sacramento River Settlement Contractors (SRSC) to maximize the efficient operation of the CVP.

Current Hydrology

The storage in Lake Shasta is more than 2.4 million acre-feet (May 5), which is 53 percent of capacity, with additional inflow for the water year (through September 2014) projected to be approximately 1,250,000 acre-feet. Based on conservative estimates, there is enough water available this year under Reclamation's operational plan to meet the various needs described below, plus plan for next year if dry.

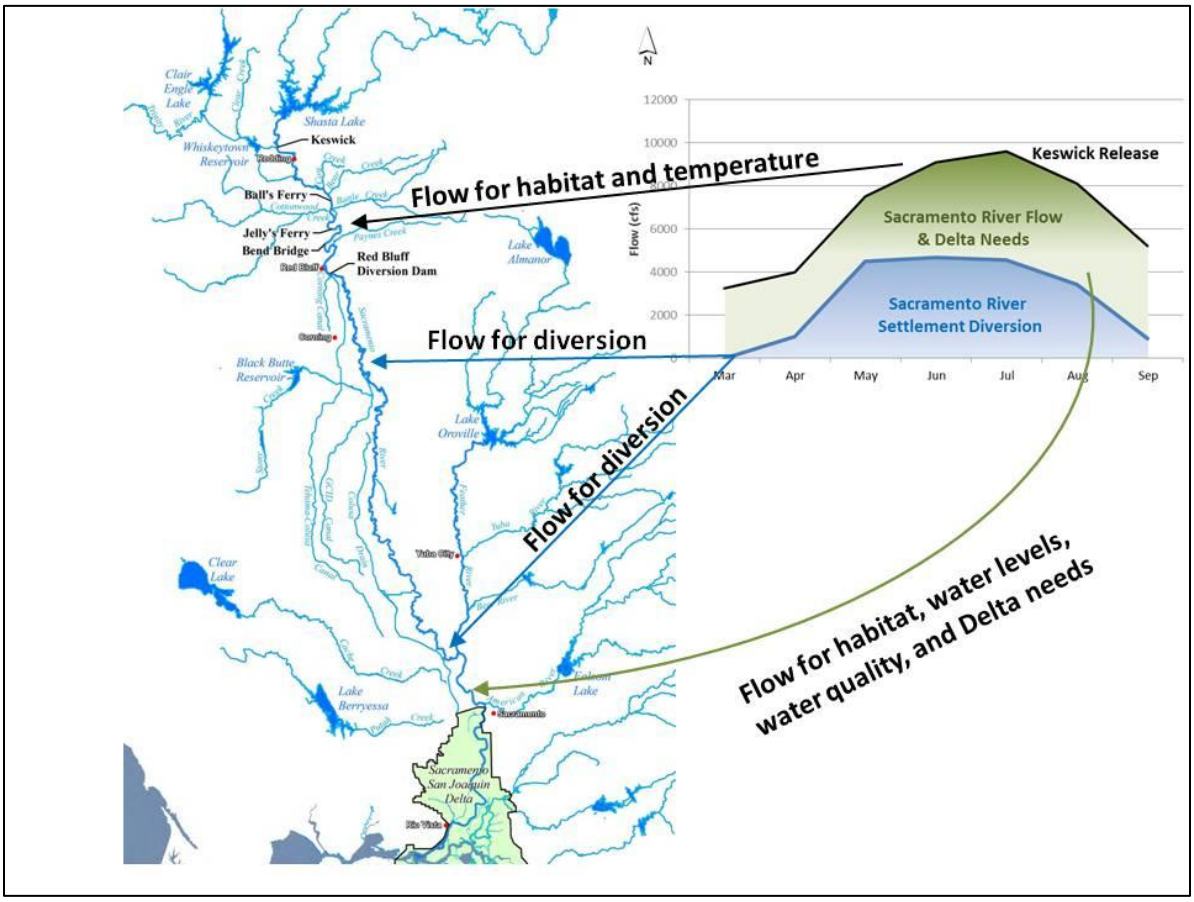
Water Serves Triple Duty in the Sacramento Valley

As the diagram below shows, water released from Shasta Lake will serve triple duty:

1) Below Keswick Dam, water will be released for temperature control for the winter-run salmon rearing in the upper mainstem of the Sacramento River. This satisfies the Sacramento Valley requirements in the (NMFS salmon Biological Opinion and SWRCB Orders 90-5 and 91-01. These releases also reflect the priority that the fishery agencies are placing on salmon for this year. Once water serves this first purpose, it continues to flow downstream, then;

2) A portion of the released water is diverted by the SRSC's for use by farms and habitat in the Sacramento Valley. These districts and agencies will have their supplies reduced by 25 percent under their contracts this year. The districts will explore creative ways to maximize this water within the districts and agencies, they will work with Reclamation and fishery agencies to schedule water for the benefit of fish and birds, and they will work with neighbors to help provide water supplies during this challenging year. Most importantly, the SRSC's will re-time their diversions and operations to align diversions with fishery releases to maximize the efficient operation of the CVP. Along with the SRSC diversions;

3) Water will be diverted for the Pacific Flyway and other bird habitat. Ricelands with the SRSC's service areas will be farmed to provide fall and winter food sources for the Pacific Flyway. Glenn-Colusa Irrigation District (GCID) will also deliver water to the three National Wildlife Refuges: Delevan, Sacramento and Colusa. The water thus serves millions of birds along the Pacific Flyway.

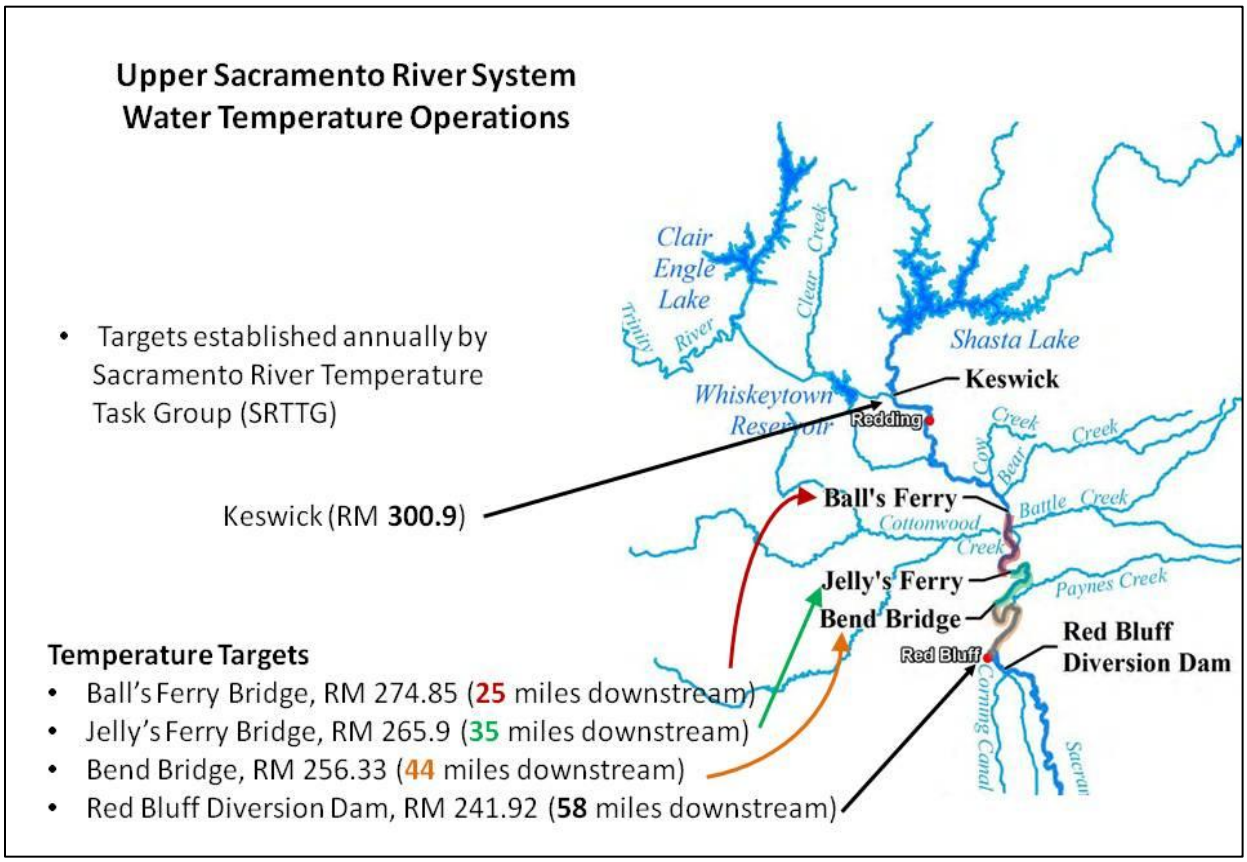


Water Flows into the Delta for Beneficial Purposes

During the summer months water is released from Shasta Lake to meet temperature requirements for salmonids in the Sacramento River above Red Bluff. A portion of this water is then diverted for various beneficial uses within the Sacramento Valley as described above. The water that is not diverted for beneficial uses within the Sacramento Valley flows into the Delta, where it will serve various beneficial purposes including salinity control, fisheries, in-delta needs, and other water uses under projects purposes as authorized by the SWRCB. Additionally, recognizing the water supply challenges in other parts of the state, including areas of the San Joaquin Valley that have no surface supplies, the SRSC's will forbear a small part of their overall water supplies to help meet these other demands for water. In return, the SRSC's will use the revenues from the forbearance to invest in local water supply infrastructure to provide water for fish, birds and farms.

Carryover Storage for Next Year

Under this operations scenario, there will be significant water in Lake Shasta at the end of the water year on September 30, 2014. With a base flow in the upper Sacramento River system above Lake Shasta of approximately 180,000 acre-feet per month (even without any precipitation in the fall and winter next year), and an operational commitment by Reclamation, NMFS, and the SRSC, there is a real opportunity to refill Lake Shasta with significant storage going into the 2015 water year. Reclamation and the Department of Water Resources (DWR) have estimated 1,100,000 acre-feet of storage in Lake Shasta at the end of the water year, which they have determined is adequate for health and safety supplies for both this year and 2015.



If you have any questions, please call Thad Bettner, Glenn-Colusa Irrigation District General Manager (530.934.8881) or Lewis Bair, Reclamation District General Manager (530.437.2221).

May 6, 2014

Managing the State Water Project in the Sacramento Valley for Multiple Purposes and Benefits
May 2014

The Department of Water Resources (DWR) can operate the State Water Project (SWP) this year to serve multiple benefits (fish, farms and birds) in the Sacramento Valley; to provide water for various Delta purposes, and plan for next year's carryover storage, even if the next year is dry. This effort also requires close coordination with the Feather River Settlement Contractors (FRSC), whose water uses predated the SWP, to maximize the efficient operation of the SWP.

Current Hydrology

The storage in Lake Oroville is 1.87 million acre-feet (May 5), which is approximately 53% of capacity, with additional inflow for the remainder of the water year (through September) projected to be approximately 483,000 acre-feet. Based on conservative estimates, there is enough water available this year under DWR's operational plan to meet the various needs described below, plus plan for next year if dry.

Water Serves Triple Duty in the Sacramento Valley

As the diagram below shows, water released from Lake Oroville will serve triple duty:

1) A portion of the water is diverted from the Thermalito Afterbay by the FRSC for use by farms and habitat in the Sacramento Valley. Additional water is diverted by FRSC's further downstream. The districts will explore creative ways to maximize this water within the districts and agencies, they will work with DWR to schedule water for the benefit of the SWP and fish and birds, and they will work with neighbors to help provide water supplies during this challenging year.

2) Below Oroville, water is released for temperature control for salmon rearing in the Feather River. This satisfies the requirements in the 1983 DWR/California Department of Fish and Wildlife Agreement, the Federal Energy Regulatory Commission (FERC) license and the State Water Resources Control Board WQ 2010-0016. These releases also reflect the priority that the fishery agencies are placing on salmon for this year. Additionally, FRSC's and others have facilitated dam removals, installed fish screens and ladders as well as other fish passage improvements on nearby Butte Creek, which has contributed to a successful spring-run salmon program.

3) Water will be diverted for the Pacific Flyway and other bird habitat. Ricelands within the FRSC's service areas will be farmed to provide important food sources for the Pacific Flyway. Overall, rice provides nearly 60 percent of the food for millions of migrating ducks and geese each winter. In addition to the delivery of water during the irrigation season, this habitat is also dependent upon the delivery of water in the fall to harvested rice fields, managed wetlands and National Wildlife Refuges and State Wildlife Areas. As examples, Biggs-West Gridley Water District delivers water to Gray Lodge Wildlife Area, Sutter Extension Water District delivers water to the Sutter National Wildlife Refuge, and Richvale Irrigation District and Western Canal Water District (WCWD) provide water for wetlands in the Upper Butte Basin Wildlife Area. The water thus serves millions of birds along the Pacific Flyway, which are viewable on the WCWD webcam at: http://westerncanal.com/wildlife-rice-farming-webcam/.

Water Flows into the Delta for Beneficial Purposes

All of the water released from Lake Oroville and not diverted by the FRSC's or delivered to refuges and wildlife areas in the Sacramento Valley, as described above, is available to serve various beneficial purposes downstream including the Delta. This includes salinity control, fisheries, in-delta needs, and other water uses under projects purposes as authorized by the SWRCB. Additionally, recognizing the water supply challenges in other parts of the state, including areas of the San Joaquin Valley that have no surface supplies, the FRSC's will forbear a small part of their overall water supplies to help meet these other demands for water. In return, the FRSC's will use the revenues from the forbearance to invest in local water supply infrastructure and to contain costs for landowners.

Carryover Storage for Next Year

Under the operations scenario, DWR and the Bureau of Reclamation have estimated 1,000,000 acre-feet of storage in Lake Oroville at the end of the water year, which they have publicly determined is adequate for health and safety supplies for both this year and 2015.

Regional Management Plan

As part of their ongoing efforts for progressive water management, the FRSC's are developing a Feather River Regional Agricultural Water Management Plan. This will include an inventory of surface water and groundwater supplies and uses and, through water balance analyses, will characterize the interaction between irrigated lands and underlying groundwater systems. It will also include analysis of opportunities to enhance regional water management and monitoring among the water agencies, as well

as specific actions that the suppliers could take to enhance water management and monitoring both within their service areas and, collectively, within the region.

If you have any questions, please call Ted Trimble, Western Canal Water District General Manager (530.342.5083); Donnie Stinnett, Joint Water Districts Watermaster (530.846.3307); or Nicole Van Vleck, Garden Highway Mutual Water Company (530.674.2837).

May 6, 2014

Re-managing the Flow

The major rivers and streams of the Sacramento Valley provide essential pathways for spawning salmon and steelhead. Flow agreements to benefit these fish are on every major watercourse in the Sacramento Valley.

Trinity and **Shasta Lakes** are important sources of cold water storage. Timing the release of this cold water into the rivers is vital if spawning fish are to thrive.

Trinity Lake

Shasta Lake

Whiskeytown Reservior

Keswick Reservior

Clear Creek

In May and June, water is pulsed into Clear Creek to attract Spring-run salmon from the Sacramento River. From June through October, water released from Whiskeytown Reservoir keeps water temperatures cool.

Sacramento River Tributaries

Various flow agreements benefit spring run salmon.

Feather River

A water quality certification adopted in 2010 provides for specific flow and temperature requirements to accommodate spawning salmon and steelhead.

Lake Oroville

Sacramento River below Keswick Dam

In 1960, flow objectives were established for the protection of fish and wildlife. In 1990 and 1991 this policy was modified requiring more cold water when warmer temperatures would be harmful to fish.

Sutter Buttes

Bullards Bar Reservior

Yuba River

In 2008, the Yuba River Accord increased the streamflow requirements over previous levels, which benefits fish while insuring sufficient water supplies for irrigation and municipal uses.

Sacramento River at Wilkins Slough

The Rivers and Harbors Act of 1935 mandated a specific flow rate at Wilkins Slough be maintained. The primary goals at that time were navigation and flood control. In 1992, Congress made protection of fish and wildlife a secondary goal and this requirement was updated in 2009.

Folsom Lake

American River below Nimbus Dam

In 2000, the Flow Management Standard was developed, which established minimum flow standards to improve the conditions for fall-run Chinook salmon and steelhead. Additionally, releases are adjusted to maintain sufficiently low water temperatures for steelhead rearing in summer and Chinook spawning in the fall.

NCWA Northern California Water Association

For more details visit www.norcalwater.org/efficient-water-management/instream-flows/