

Stanislaus River Operations Group

Meeting Summary

Date 17 February 2010

Attendees

Liz Vasquez, Rob Schroeder, Randi Field, Liz Kiteck, and Carol Nicolos, USBR; Barb Byrne and Rhonda Reed, NMFS; J.D. Wilkert, FWS; Andy Chu, DWR; Greg Wilson (phone), SWRCB; and Tim Heyne (phone), DFG.

Handouts

- Agenda
- New Melones – Stanislaus River Basin Storage
- Goodwin Dam (GDW) Discharge
- Orange Blossom Bridge Temperatures
- New Melones Lake Daily Operations, Run date: February 17, 2010
- Tulloch Reservoir Daily Operations, Run date: February 17, 2010
- Goodwin Reservoir Daily Operations, Run date: February 17, 2010

Reclamation representative apologized for confusion on the start of the meeting. Some people had thought the meeting started at 1pm and others that it started at 2pm

Decision: All reoccurring SOG meetings would start at 1 pm *unless specifically agreed to by the group.*

Announcements and Reviewed Agenda Items:

The group reviewed the agenda and opted to address operation status and questions related to temperature and flow first so that CVO could participate.

Items that need to be discussed at future meetings include more discussion on Stanislaus fish research, invasive species, gravel augmentation, potential restoration project funding and priority, and biological monitoring.

Updates related to biological system include the verification that mud snails are now in the Stanislaus system; FWS representative stated he wanted to post signs at the various river accesses. Reclamation representative indicated that signs were seen posted at Knights Ferry and Valley Oak in January when Reclamation was completing River 2D survey. She thought perhaps the USACE had already posted mud snail information.

FWS representative discussed research on Stanislaus fish otoliths. This research specifically gets at the question of successful spawning of anadromous fish as a function of when the fish leave the Stanislaus River. This research and other biological information should be discussed at SOG.

Reclamation representative suggested that as implementation of the RPAs become better understood, addressing biological issues and reviewing current research will become more of a priority during SOG.

At some point, SOG needs to talk about gravel augmentation. The RPAs indicate that, “Reclamation shall submit a plan, including monitoring, and schedule to NMFS for gravel augmentation by June 2010.”(OCAP 2009). This is a priority item not only because of the RPA deadline but as an opportunity to include some gravel augmentation as part of an upcoming restoration project at Honolulu Bar. Currently, Reclamation has not included gravel augmentation at this site for this fiscal year. This is a unique opportunity to partner with several agencies to accomplish some gravel augmentation. Any gravel augmentation in the Stanislaus needs to be coordinated through the CVPIA gravel augmentation program.

Agenda Item: Discuss gravel augmentation on the Stanislaus River and request that the CVPIA gravel program to participate in the next SOG.

Discussions on the Charter could take up several full SOG meetings. Reclamation and NMFS proposed that a break out session specifically on the charter be held. If Reclamation and NMFS can agree on the language, this would be a big step towards getting a workable document for the full SOG group. For this reason, Reclamation representative and Barb will take the lead on this.

Action Item: Reclamation representative and Barb need to set up a meeting to clarify the Charter language.

The FWS representative announced that Melanie Fisher of the Stanislaus RCD would be holding the first Stanislaus Watershed meeting on 2/24/10 at Knights Ferry. He encouraged the SOG members to attend.

At this time, the group began to work through the items on the agenda.

Operations Summary:

The Biological Opinion uses the term New Melones Index (NMI) in several places in the RPAs. The NMI is specifically defined in section **Action IV.2.1 San Joaquin River Inflow to Export Ratio** Footnote 32 (p 642). In Footnote 32, it states that, ‘The New Melones Index is a summation of end of February New Melones Reservoir storage and forecasted inflow using 50% exceedance from March through September’. From previous discussions on **Action III.1.3. Operate the East Side Division Dams to Meet the Minimum Flows, as Measured at Goodwin Dam, Characterized in Figure 11-1, and as Specified in Appendix 2-E**, it has become clear that the modeling for Action III.1.3 utilized this index as the determiner of which water year type to use in Figure 11-1 and Appendix 2-E. Also, it has become clear that the year types used in the model have water volume ranges which are not those used by Reclamation for its Interim Plan of Operations(IPO).

Confusion on this point is compounded by the fact that in **Action III.1.3.**, the following is included in the rationale section:

‘**Rationale:** This flow schedule includes the following components:

Minimum base flows based on IFIM (Aceituno 1993) to optimize available CV steelhead habitat for adult migration, spawning, and juvenile rearing. These base flows are scaled to water year type as defined by the Interim Operations Plan (IOP) water supply parameter 30, with lowest flows in critically dry years and highest flows in wet years.’

and subsequent footnote 30: ‘³⁰ The IOP water supply parameter is a function of end of February New Melones Reservoir storage and forecasted inflow from March through September. ‘

Reclamation’s Interim Plan of Operations water supply parameter, which seems to be the parameter referenced in footnote 30, is a summation of end of February New Melones Reservoir storage and forecasted inflow using 90% exceedance from March through September. The IPO established this parameter and it is referenced in several legally binding documents.

Reclamation is not comfortable with the current system to decide on which minimum flow schedule to use due to the ambiguity in these definitions. Reclamation requests a memo from NMFS to clarify the system to be used to decide the water year type for **Action III.1.3.** In particular, the memo needs to specify the function to determine the parameter used for **Action III.1.3**, the interval of the calculation (i.e. monthly), the exceedance forecast to be used in that function, and the water year type ranges that trigger the different flow regimes indicated in **Figure 11-1** and in **Appendix 2-E.**

Randi Field has calculated the IPO water supply parameter (1570) and it indicates a ‘Dry’ year water type. Reclamation also calculated a number using the formula for the NMI (Summation of end of February New Melones Reservoir storage and forecasted inflow using 50% exceedance from March through September). The value using the NMI formula equaled 1931. Reclamation then compared it to the year types provided by NMFS at the January SOG meeting. This process also indicated that this year is a ‘Dry’ year water type. Though currently there is no difference in the water year type between the NMI and IPO formulas, clearly there will be water years when these two formulas will not agree.

Action Item: Reclamation representative will provide NMFS with available historical WSP data. NMFS will draft a memo to clarify Action III.1.3 implementation. Reclamation and SOG will have the opportunity to review and comment.

Reclamation provided several handouts describing January and February reservoir operations (see attachments). Stanislaus River Basin Storage, had not changed much since the first SOG meeting in January. In the last few weeks, outflows were beginning to exceed inflows at New Melones. Storage at New Melones was up 6,000 AF for

February and was 71% of the 15 year average, making it about the same as last year's February storage volume.

Releases from Goodwin Dam began to increase right after the January meeting due to Bay-Delta requirements. Flows released for the Bay-Delta requirements were re-shaped to accommodate a NMFS fishery pulse (as specified in Appendix 2E) because the increased flows exceeded the NMFS minimum flows. Following the fishery pulse that took place in early February, where the flow was dropped to 400 cfs, flows increased again to meet the Bay-Delta flow requirement at Vernalis which requires a monthly average of 2,280 cfs. FWS indicated that approximately 100 fish were observed in the Caswell screw trap following the fish pulse. It is unclear whether this was the January or February pulse.

The pulse flow completed in February was well received. The steeper declining limb seemed to more closely resemble a 'natural' storm event than the steep drop off that was originally proposed and indicated in the RPAs. It was suggested that a template be developed so that Reclamation has more time to make operational changes. This storm template should be based on a literature review and possibly storm pulses from the Consumnes which is in another nearby Central California watershed, but has a more 'natural' flow regime as there is no large reservoir to impede flow. Since the SOG members seemed satisfied with the February pulse, it was recommended that for the time being that could be a template for the Stanislaus River.

Action Item: Reclamation representative agreed to generate a template for the Stanislaus river from the February pulse.

Orange Blossom Bridge has been seeing an increase in temperature for the three-day average. This increase approaches exceedence of the temperature criterion included in Action III.1.2.

There was a question about the Biological Opinion having two temperature requirements for the same time period in Temperature Criterion Table in Action III.1.2:

- 57° from Jan 1- May 31 at Orange Blossom Bridge (OBB) for Smoltification and
- 55° from Jan 1 - May 31 for OBB for Spawning and Incubation.

What was the intent of including the two separate temperatures for the same time period in the same locations in the RPAs? Should Reclamation target operations to 57° or 55°?

NMFS representative stated that, during work on RPA development, a management decision was made to include all the applicable temperature criterion from the literature. Because of this, temperature targets were included that were overlapping in the RPAs.

The more stringent criterion is to achieve temperatures of 52° F at Knights Ferry. This target is unambiguous during the January 1 to May 31 timeframe.

Decision: The SOG indicated that a conservative approach should be taken when possible; Reclamation should target the 55° for OBB from Jan 1 to May 31 as well as 52° at Knights Ferry.

Also there currently is no recent temperature data for Knights Ferry available through CDEC. DFG representative verified that the historic data available through CDEC was taken by DFG who downloads Tidbit data samplers on a monthly basis. This information is disseminated at about 6 month intervals to CDEC. Compliance at Knights Ferry, therefore will be difficult to determine and management to control temperature even more difficult.

Can a new gage be installed or measurements downloaded more often?

In the long-term, a new gage would be the most reliable fix if compliance and management of temperature at two locations on the Stanislaus River is necessary. Reclamation does not have an instrument to get that work accomplished or program funding this fiscal year to install a gage.

The existing instrumentation at Knights Ferry could be downloaded more frequently by either DFG or USACE. Since the USACE offices are located at the site, we could seek assistance from USACE to get more frequent information.

If USACE was willing to help with getting temperature data, the issues with USACE assistance are that Reclamation cannot get USACE support for the personnel time to take temperatures, quality and consistency would be difficult to guarantee, and it would take a lot of coordination between Reclamation and USACE.

If DFG was willing to help with getting temperature, there is an existing agreement related to the 1987 Agreement which could be modified to include this work and DFG has technical expertise and equipment on-site. DFG would have to find personnel to check temperatures at Knights Ferry more frequently; dedicating one person on an almost 20 hour a week basis to take temperatures at Knights Ferry would not be realistic at this time.

SOG proposed coming up with a relationship from historic data between Knights Ferry and OBB. Reclamation representative agreed to develop this relationship.

Action Item: Reclamation representative will develop a temperature relationship between Knights Ferry and OBB sites.

A discussion of the tools to manage temperature in the Stanislaus system should be planned and not be squeezed into a SOG meeting. A separate break-out session on temperature should be planned.

Action Item: Reclamation representative will plan a separate meeting to discuss tools to manage temperature.

Reclamation also summarized next month's expected operations. The NMFS B.O. average flow requirement for the Stanislaus in March is 200 cfs. The Vernalis Bay-Delta monthly flow requirement of 2,280 cfs will have to be met in March, so average Goodwin flows will likely be greater than the NMFS flow

CVP wide operational outlooks are scheduled to be released next week; set up for discussion at next month's meeting.

Next Meeting

Date: Wednesday, 17 March 2010

Location: Central Valley Operations Office
3310 El Camino Ave.
Sacramento, CA 95821

Room: 302

Time: 1300

Notes by: Carol Nicolos and Liz Vasquez

AGENDA
Stanislaus Operations Group
February 17, 2010
Central Valley Operations Office, 3310 El Camino Avenue, Room 300, Sacramento, CA
95821
1:00 PM to 3:00 PM
Telecon Number 1-866-718-0082
Participant Code #2620147

RPA Action

- Action III.1.1 **Stanislaus Operations Group (SOG)**
 - Charter and MOU**
 - Public Involvement and Stakeholder Language**
 - Meeting Minutes Format**
 - Team Members**

- Action III.1.3 **Stanislaus Operations Summary**
 - Water Year Types and Forecasts**
 - Pulse Flow February**

- Action III.1.2 **Temperature Criterion**

NOAA OCAP Biological Opinions: RPAs

| ACTION ID | RPA NAME |
|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11.2.1.3 (584) | Monitoring and Reporting: (e) Adult escapement and juvenile monitoring for steelhead on the Stanislaus River |
| Action III.1.1 (581-583, 620) | Establish Stanislaus Operational Group (SOG) for Real-Time Operational Decision-Making |
| Action III.1.2 (620-621) | Provide Cold Water Releases to Maintain Suitable Steelhead Temperatures. |
| Action III.1.3 (622-625, Appendix 2-E) | Operate the East Side Division Dams to Meet the Minimum Flows, as Measured at Goodwin Dam. |
| Action III.2.1 (262) | Increase and Improve Quality of Spawning Habitat with addition of 50,000 Cubic Yards of Gravel by 2014 and with a Minimum Addition of 8,000 Cubic Yards per Year for the Duration of the Project Actions. |
| Action III.2.2 (627) | Conduct Floodplain Restoration and Inundation in Winter or Spring to Inundate Steelhead Juvenile Rearing Habitat on One- to Three- Year Schedule. |
| Action III.2.3 (627) | Restore Freshwater Migratory Habitat for Juvenile Steelhead by Implementing Projects to Increase Floodplain Connectivity and to Reduce Predation Risk During Migration. |
| Action III.2.4 (628) | Evaluate Fish Passage at New Melones, Tulloch, and Goodwin Dams |
| Action IV.2.1 (641) | Phase I: Interim Operations in 2010-2011: Reclamation shall increase its releases at Goodwin Reservoir, if necessary, in order to meet the flows required at Vernalis |

from ACOE

17 FEB 10 09:45:33

New Melones - Stanislaus River Basin

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T
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1
2
Gross Res

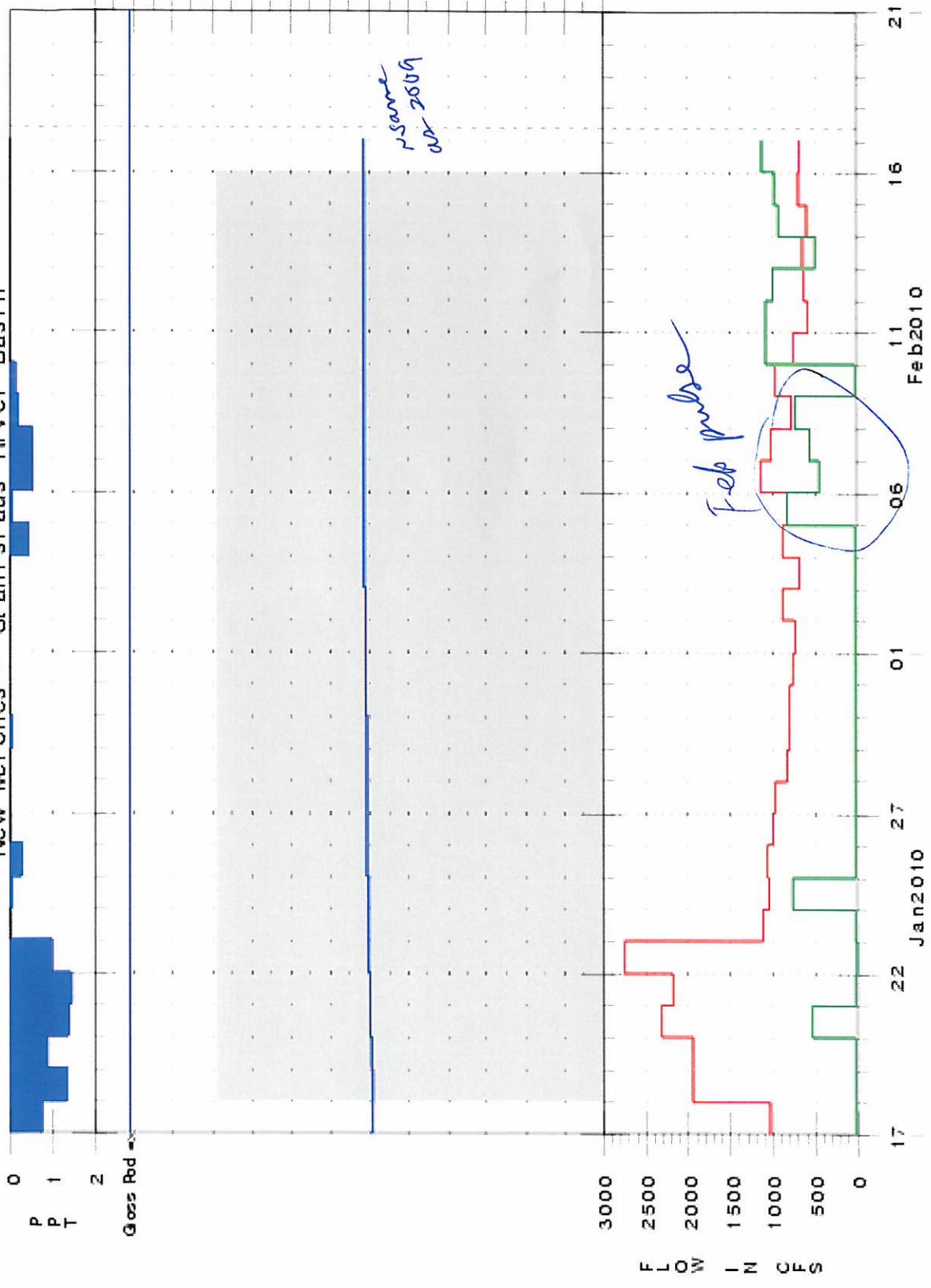
x10⁶
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0

STORAGE IN ACFT

71%
of 15yr
ave

same
as 2009

Feb pulse

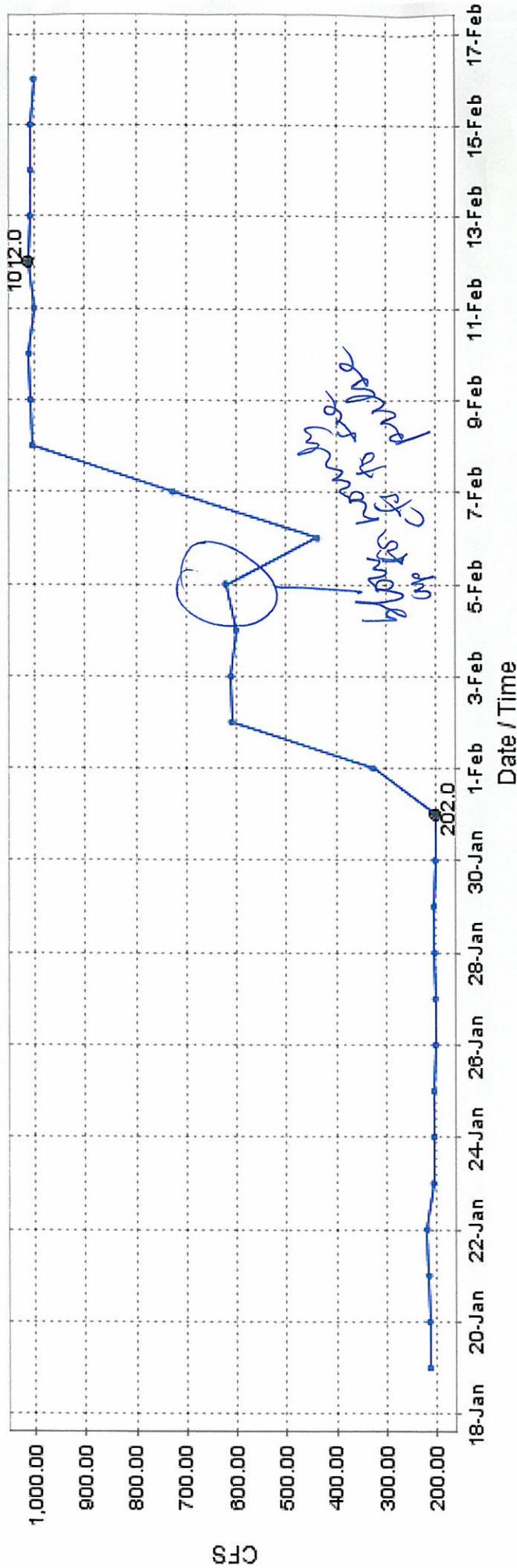


Inflow
Outflow
Reservoir Storage
Top of Conservation Pool
Precipitation

GOODWIN DAM (GDW)

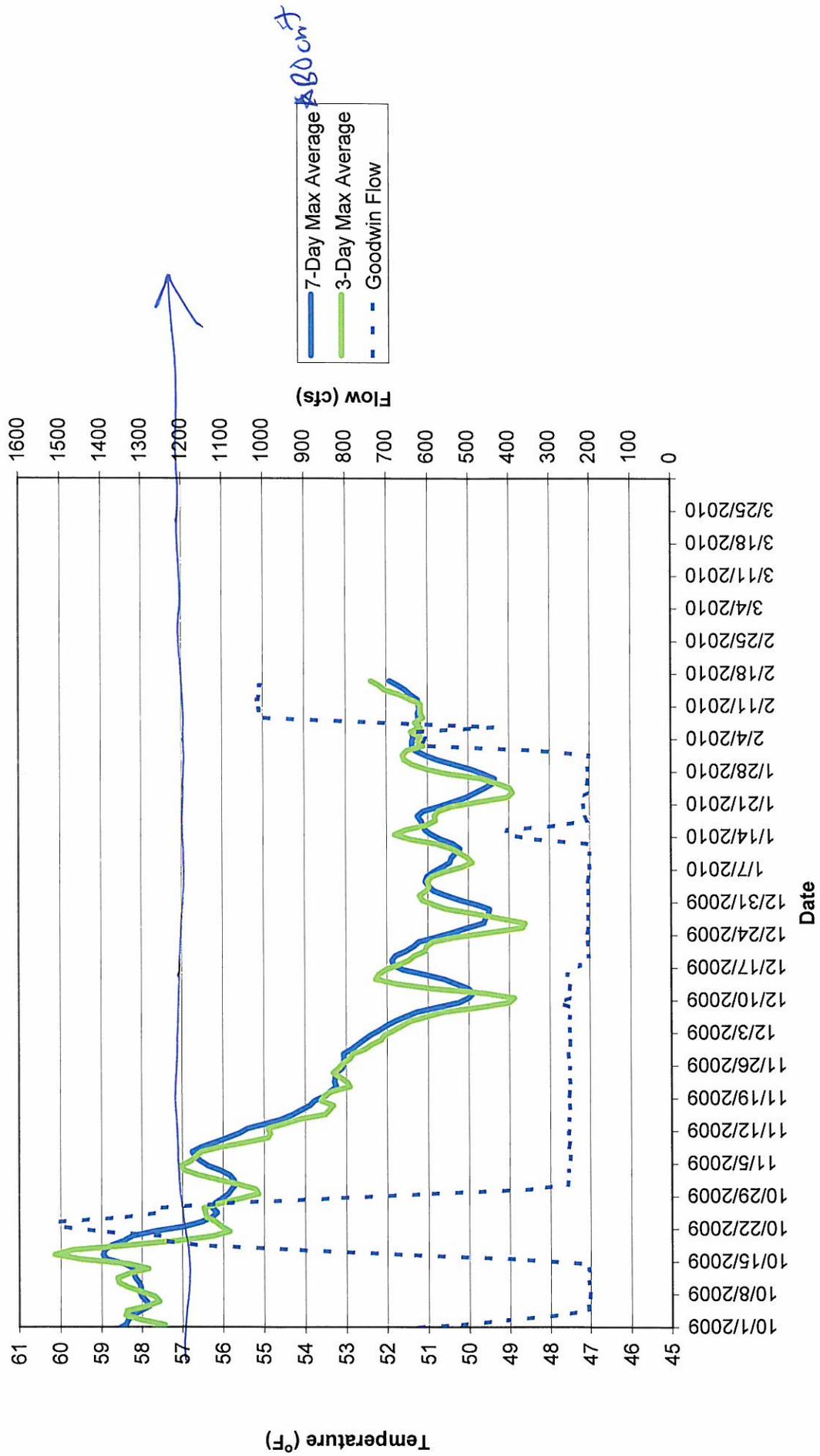
Date from 01/18/2010 10:37 through 02/17/2010 10:37 Duration : 30 days

Max of period : (02/12/2010 00:00, 1012.0) Min of period: (01/31/2010 00:00, 202.0)



DISCHARGE, SPILLWAY - CFS (9183)

Orange Blossom Bridge Temperatures



UNITED STATES DEPARTMENT OF THE INTERIOR
U.S. BUREAU OF RECLAMATION-CENTRAL VALLEY PROJECT-CALIFORNIA

FEBRUARY 2010

NEW MELONES LAKE DAILY OPERATIONS

RUN DATE: February 17, 2010

| DAY | ELEV | STORAGE | | COMPUTED* INFLOW C.F.S. | POWER | RELEASE - C.F.S. | | | EVAPORATION | | PRECIP INCHES |
|------------------|--------|---------------------------|---------------|-------------------------------|---------------|------------------|----------|------------|-------------|-------------|------------------|
| | | 1000 ACRE-FEET IN LAKE | CHANGE | | | SPILL | OUTLET | C.F.S. | INCHES | | |
| | | 1,219.8 | | | | | | | | | |
| 1 | 971.20 | 1,221.2 | +1.4 | 732 | 11 | 0 | 0 | 19 | .07 | .00 | |
| 2 | 971.41 | 1,223.0 | +1.7 | 885 | 10 | 0 | 0 | 8 | .03 | .00 | |
| 3 | 971.57 | 1,224.3 | +1.3 | 680 | 9 | 0 | 0 | 11 | .04 | .00 | |
| 4 | 971.78 | 1,226.0 | +1.7 | 888 | 16 | 0 | 0 | 5 | .02 | .00 | |
| 5 | 971.78 | 1,226.0 | +0.0 | 838 | 838 | 0 | 0 | 0 | .00 | .45 | |
| 6 | 971.95 | 1,227.4 | +1.4 | 1,151 | 449 | 0 | 0 | 0 | .00 | .07 | |
| 7 | 972.06 | 1,228.3 | +0.9 | 1,021 | 566 | 0 | 0 | 0 | .00 | .53 | |
| 8 | 972.07 | 1,228.4 | +0.1 | 778 | 736 | 0 | 0 | 0 | .00 | .53 | |
| 9 | 972.30 | 1,230.3 | +1.9 | 972 | 11 | 0 | 0 | 8 | .03 | .20 | |
| 10 | 972.22 | 1,229.6 | -0.7 | 757 | 1,081 | 0 | 0 | 8 | .03 | .12 | |
| 11 | 972.10 | 1,228.6 | -1.0 | 587 | 1,077 | 0 | 0 | 8 | .03 | .01 | |
| 12 | 972.01 | 1,227.9 | -0.7 | 638 | 1,000 | 0 | 0 | 11 | .04 | .00 | |
| 13 | 972.04 | 1,228.1 | +0.2 | 646 | 502 | 0 | 0 | 19 | .07 | .00 | |
| 14 | 971.95 | 1,227.4 | -0.7 | 592 | 940 | 0 | 0 | 24 | .09 | .00 | |
| 15 | 971.88 | 1,226.8 | -0.6 | 703 | 979 | 0 | 0 | 13 | .05 | .00 | |
| 16 | 971.77 | 1,225.9 | -0.9 | 684 | 1,127 | 0 | 0 | 11 | .04 | .00 | |
| TOTALS | | | +6.0 | 12,552 | 9,352 | 0 | 0 | 145 | .54 | 1.91 | |
| ACRE-FEET | | | +6,000 | 24,897 | 18,550 | 0 | 0 | 288 | | | |

COMMENTS:

* COMPUTED INFLOW IS THE SUM OF CHANGE IN STORAGE, RELEASES AND EVAPORATION.

SUMMARY

| | | | | | |
|-------|---------------------|--------|--------|--|------------------------------|
| | RELEASE (ACRE-FEET) | | | | PRECIPITATION |
| POWER | 18,550 | OUTLET | 0 | | THIS MONTH = 1.91 |
| SPILL | 0 | TOTAL | 18,550 | | JULY 1, 2009 TO DATE = 21.28 |

UNITED STATES DEPARTMENT OF THE INTERIOR
 U.S. BUREAU OF RECLAMATION-CENTRAL VALLEY PROJECT-CALIFORNIA

FEBRUARY 2010

TULLOCH RESERVOIR DAILY OPERATIONS

RUN DATE: 02/17/2010

| DAY | ELEV | STORAGE ACRE-FEET RES. | CHANGE | COMPUTED* INFLOW C.F.S. | NEW MELONES RELEASE | POWER | RELEASE - C.F.S. SPILL | OUTLET | EVAP C.F.S. (1) |
|------------------|--------|------------------------------|---------------|-------------------------------|---------------------------|---------------|---------------------------|----------|-----------------------|
| | | 59,750 | | | | | | | |
| 1 | 503.44 | 59,112 | -638 | 22 | 11 | 341 | 0 | 0 | 3 |
| 2 | 502.49 | 58,039 | -1,073 | 35 | 10 | 575 | 0 | 0 | 1 |
| 3 | 501.73 | 57,192 | -847 | 162 | 9 | 588 | 0 | 0 | 1 |
| 4 | 500.15 | 55,466 | -1,726 | -280 | 16 | 589 | 0 | 0 | 1 |
| 5 | 501.02 | 56,409 | +943 | 1,069 | 838 | 594 | 0 | 0 | 0 |
| 6 | 501.28 | 56,696 | +287 | 574 | 449 | 429 | 0 | 0 | 0 |
| 7 | 501.49 | 56,927 | +231 | 811 | 566 | 695 | 0 | 0 | 0 |
| 8 | 501.28 | 56,696 | -231 | 819 | 736 | 935 | 0 | 0 | 0 |
| 9 | 499.81 | 55,100 | -1,596 | 130 | 11 | 934 | 0 | 0 | 1 |
| 10 | 499.45 | 54,716 | -384 | 745 | 1,081 | 938 | 0 | 0 | 1 |
| 11 | 500.55 | 55,899 | +1,183 | 1,563 | 1,077 | 966 | 0 | 0 | 1 |
| 12 | 500.67 | 56,029 | +130 | 1,054 | 1,000 | 987 | 0 | 0 | 1 |
| 13 | 499.88 | 55,175 | -854 | 551 | 502 | 980 | 0 | 0 | 2 |
| 14 | 499.92 | 55,218 | +43 | 991 | 940 | 966 | 0 | 0 | 3 |
| 15 | 500.03 | 55,336 | +118 | 1,027 | 979 | 966 | 0 | 0 | 2 |
| 16 | 500.40 | 55,737 | +401 | 1,167 | 1,127 | 964 | 0 | 0 | 1 |
| TOTALS | | | -4,013 | 10,440 | 9,352 | 12,447 | 0 | 0 | 18 |
| ACRE-FEET | | | -4,013 | 20,708 | 18,550 | 24,689 | 0 | 0 | 36 |

*COMPUTED INFLOW IS SUM OF CHANGE IN STORAGE, RELEASES, AND EVAPORATION.

SUMMARY
 RELEASE (ACRE-FEET)

| | | | |
|-------|--------|--------|--------|
| POWER | 24,689 | OUTLET | 0 |
| SPILL | 0 | TOTAL | 24,689 |

OAKDALE IRRIGATION DISTRICT
 SOUTH SAN JOAQUIN IRRIGATION DISTRICT
 TRI DAMS PROJECT-CALIFORNIA

FEBRUARY 2010

GOODWIN RESERVOIR DAILY OPERATIONS

RUN DATE: February 17, 2010

| DAY | ELEV | STORAGE | | TULLOCH RELEASE | RELEASE - C.F.S. | | | |
|------------------|--------|---------|---------------------|--------------------|------------------|---------------|---------------|----------|
| | | RES. | ACRE-FEET CHANGE | | RIVER OUTLET | SPILL | CANALS | |
| | | | | | | JOINT MAIN | SOUTH MAIN | |
| | | 535 | | | | | | |
| 1 | 360.22 | 552 | +17 | 341 | 0 | 326 | 0 | 0 |
| 2 | 360.24 | 554 | +2 | 575 | 0 | 610 | 0 | 0 |
| 3 | 360.24 | 554 | +0 | 588 | 0 | 611 | 0 | 0 |
| 4 | 360.24 | 554 | +0 | 589 | 0 | 601 | 0 | 0 |
| 5 | 360.16 | 548 | -6 | 594 | 0 | 622 | 0 | 0 |
| 6 | 360.13 | 546 | -2 | 429 | 0 | 438 | 0 | 0 |
| 7 | 360.49 | 571 | +25 | 695 | 0 | 726 | 0 | 0 |
| 8 | 360.49 | 571 | +0 | 935 | 0 | 1,004 | 0 | 0 |
| 9 | 360.49 | 571 | +0 | 934 | 0 | 1,007 | 0 | 0 |
| 10 | 360.49 | 571 | +0 | 938 | 0 | 1,010 | 0 | 0 |
| 11 | 360.49 | 571 | +0 | 966 | 0 | 1,000 | 0 | 0 |
| 12 | 360.46 | 569 | -2 | 987 | 0 | 1,012 | 0 | 0 |
| 13 | 360.49 | 571 | +2 | 980 | 0 | 1,008 | 0 | 0 |
| 14 | 360.49 | 571 | +0 | 966 | 0 | 1,007 | 0 | 0 |
| 15 | 360.49 | 571 | +0 | 966 | 0 | 1,008 | 0 | 0 |
| 16 | 360.49 | 571 | +0 | 964 | 0 | 1,001 | 0 | 0 |
| TOTALS | | | +36 | 12,447 | 0 | 12,991 | 0 | 0 |
| ACRE-FEET | | | +36 | 24,689 | 0 | 25,768 | 0 | 0 |

JOINT MAIN OPERATED BY SSJID AND OID.
 SOUTH MAIN OPERATED BY OID.

SUMMARY
 RELEASE (ACRE-FEET)

| | | | |
|------------------|---|--------|--------|
| JOINT MAIN CANAL | 0 | OUTLET | 0 |
| SOUTH MAIN CANAL | 0 | SPILL | 25,768 |
| | | TOTAL | 25,768 |