Stanislaus River Operations Group
DRAFT Meeting Notes
Date 16 May 2010

Attendees
Chelsea Stewart, Randi Field, Liz Kiteck, Rachel Barnett-Johnson, and Carol Nicolos, USBR; Barb Byrne and Rhonda Reed (Phone), NMFS; J.D. Wikert, FWS; Andy Chu and Mike Ford, DWR; Kari Kyler (phone) and Greg Wilson (phone), SWRCB; and Tim Heyne, DFG.

Handouts
- Agenda
- NMFS OCAP Biological Opinion: Reasonable and Prudent Alternatives Ref.
- Spreadsheet; Chinook Salmon Count
- Graph; Chinook Salmon Count
- Chinook catch at Caswell as of 5-18-2010
- New Melones Lake Daily Operations, Run Date: May 19, 2010
- Tulloch Reservoir Daily Operations, Run date: May 19, 2010
- Goodwin Reservoir Daily Operations, Run date: May 19, 2010
- New Melones - Stanislaus River Basin – USACE: May 19, 2010
- Orange Blossom Bridge Temperatures through May 19, 2010
- Estimated Knights Ferry Temperatures through May 19, 2010
- Preliminary – Simulated Stanislaus River Temperatures May 50% Exceedence Outlook

Agenda Items/Announcements:
Introductions were made around the table to meet new people at the meeting. Suggestions were also made to add two additional topics to the agenda: State Water Resources Control Board standards and expected New Melones operations in June.

River 2D project is ongoing, with one more field study currently taking place.

Presentation:
Rachel Barnett-Johnson gave the group a presentation on "The Contribution of Fry vs. Smolt Life-Histories Relative to Flow Regimes on the Stanislaus River". The presentation gave a four tiered look at salmon viability; and touched on diversity in size and temporal migration in hopes of understanding the survivorship of the juveniles outmigrating from the Stanislaus River in 2000. Strontium isotopes in otoliths from adults from this cohort were analyzed to determine the size in which they outmigrated from the Stanislaus River as juveniles. The size distribution of juveniles leaving in 2000 (dominated by fry) was compared to the reconstructed size distribution that the adults left the river. It was determined that while fry do contribute to the overall survivability of the salmon, parr and smolt are much more likely to survive to return to the Stanislaus River as adults. The study also found that the majority of the adults returning to the Stanislaus River from this cohort were from the Stanislaus River (52%) or hatchery strays from the

Mokelumne River Hatchery (21%), Merced River Hatchery (26%), and Nimbus Hatchery (1%).

Fisheries:

FWS provided the Caswell fish screw trap numbers for May 2010. For each Stanislaus River flow pulse at Caswell there seemed to be a corresponding response in fish migration. To date, 997 fish have been counted, which is an improvement over year 2008 and year 2009 and is consistent with a wetter water year.

DFG noted that last year there was one trout caught and this year there have been three, but the numbers are lower than in previous years.

FWS reported that one Chinook was seen passing through the weir this week; it was most likely not tagged. During turbid water some mistaken identity can take place between Steelhead and Chinook. Staffing and permits for holding and tagging Chinook is hampering efforts to tag fish on the Stanislaus.

Gravel Augmentation:

NMFS clarified the NMFS 2009 BO RPA III.2.1 gravel augmentation target: the action should read 50,000 "cubic yards" by year 2014, not "tons".

Reclamation is required to submit a Gravel Augmentation Plan with monitoring and schedule of projects including expected costs to NMFS. The work plan will include $62,000.00 for Honolulu Bar.

FWS also provided a summary of on-going and potential projects. Lover's Leap Project has $200,000.00 of AFRP Funds for planning and permitting this year if property owners can submit their necessary paperwork. This includes approximately a mile of habitat that could be graded down. Additional funds will need to be secured and could be initiated as early as 2012. The Lancaster site side-channel work is currently not funded.

FWS attempted, but could not purchase property on 2-mile Bar because the owner wanted to be paid with inclusion of mineral rights; raising the cost so the Realty Personnel would not approve the purchase.

CDFG suggested placing gravel up into the canyon area and recommended that Reclamation should plan for a site visit in the canyon.

FWS also suggested that if an agreement can be acquired between Reclamation and the Knights Ferry community, there is an area up-stream of Sonora Road Bridge that could be augmented. Concerns of the Knights Ferry community regarding Reclamation's past gravel augmentation was discussed.

Reclamation plans to distribute a draft gravel augmentation plan, in accordance with the NMFS BO RPA III.2.1, on June 16th for review. Comments from SOG members will be requested within a week of distribution.

Operations Summary:
New Melones Lake increased 2,800 AF to date over the past month. There is little anticipation of further storage increases at New Melones and the volume will remain at roughly 50% of capacity through the end of June.

Tulloch should continue to fill through May when it will reach its target elevation of 509 ft. It will remain at approximately this elevation for the summer and fall season.

Goodwin Dam released 1,000 cfs from April 9 until May 16 as proscribed in the NMFS BO RPA minimum flow schedule. On May 17, 2010 projected Vernalis flows fell below the VAMP flow target. In response, releases were returned to 800 cfs after a brief reduction down to 650 cfs, to maintain the flow target.

The Water Supply Parameter for May 2010 was calculated as 1890 TAF for the 90% and 1979 TAF for the 50% *(Note: The 90% value discussed in the meeting was incorrect, the correct information was distributed to the SOG members by e-mail).* Both of the exceedence forecasts result in a Dry year category for the minimum flow schedule.

Temps:
The Stanislaus River system experienced large daily swings (approximately 20 ^{o}F) of air temperature in the month of May and releases were insufficient to achieve the 7-day maximum average for Orange Blossom and Knights Ferry at 55 ^{o}F and 52 ^{o}F respectively. A notification of the temperature exceedence was sent to NMFS by Reclamation on May 5, 2010.

Reservoir temperature profile information was not collected, however, Reclamation plans to update the temperature simulation when the data becomes available. DFG is scheduling to provide the temperature profiles by the third week of the month in future months.

NMFS questioned if SOG should hold a Stanislaus River temperature model workshop. The consensus was that it would be helpful to discuss both temperature simulation tools and review the Sacramento River temperature management process. NMFS expressed interest in decreasing the simulation time step from 6-hours to 1-hour.

State Water Resources Control Board (SWRCB) Standards:
SWRCB provided an update to the San Joaquin River water year type classification. The month of May resulted in a change of classification from Below Normal to Above Normal changing the Vernalis-Bay-Delta flow requirement to 3,337 cfs. There was also a discussion on the interpretation of meeting the objective with or without "carry-over" days.

Expected Operations for June:
June operations are expected to be driven by SWRCB Bay-Delta requirements at Vernalis. Flows from Goodwin will be dependent on San Joaquin River flows upstream

of the confluence with the Stanislaus River. It is likely that Tuolumne River releases will remain elevated for fill management/spill control at New Don Pedro Reservoir which will influence the amount of water required from the Stanislaus River to meet the Vernalis objective.

Next Meeting

Date: Wednesday, 16 June 2010

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

Room: 302

Time: 1300

Notes by: Carol Nicolos and Randi Field

AGENDA
Stanislaus Operations Group
May 19, 2010
Central Valley Operations Office, 3310 El Camino Avenue, Room 302, Sacramento, CA 95821
1:00 PM to 3:00 PM
Telecon Number 1-866-757-8460
Participant Code #9068008

RPA Action	Agenda Items
	Announcements
Action III.2.2	Presentation by Rachel Barnett-Johnson on 'The Contribution of Fry vs. Smolt Life-Histories Relative to Flow Regimes on the Stanislaus River'
	Fishery and Restoration Updates
Section 11.2.1.3	Fish Monitoring and Reporting
	-Caswell Screw Trap
Action III.2.1	Gravel Augmentation
	-Update on Gravel Plan due June 2010
	Stanislaus Operations Summary
Action III.1.2	Temperature Criterion
Action III.1.3	Minimum Flow
Action IV.2.1	San Joaquin Inflow Export Ratio

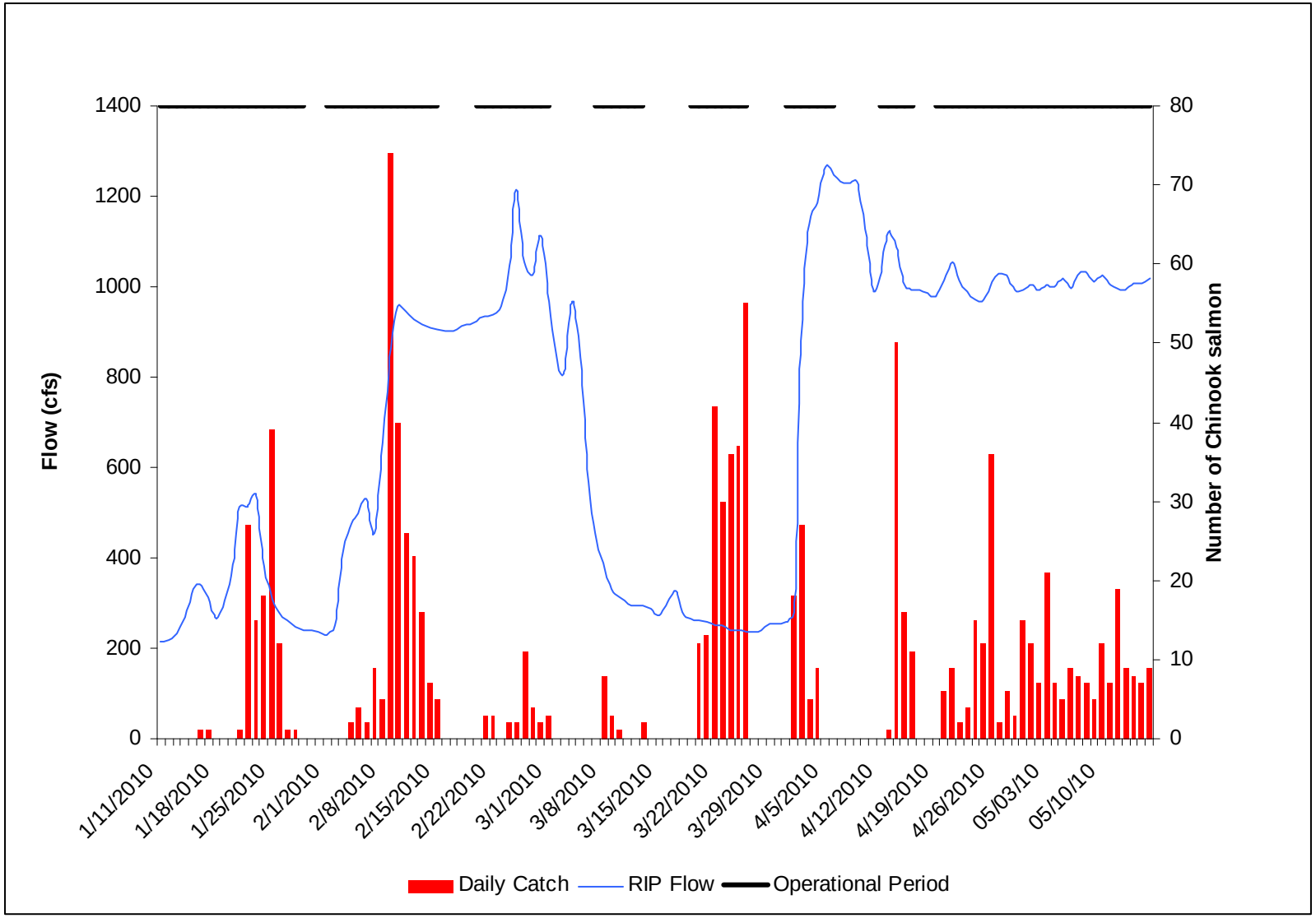
NMFS OCAP Biological Opinion: Reasonable and Prudent Alternatives (RPAs) References

ACTION ID	PAGE #	RPA NAME
Section 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	626	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

BatchDate	Days trapped	Chinook salmon		*O. mykiss*	RIP Flow (cfs)	Temp (C)	D.O. (mg/L)	Turbidity (NTU)
		Count	Mean FL (mm)	Count				
1/11/2010	Install	n/a	n/a	n/a	215			
1/12/2010	x	0		0	219	9.6	10.83	0.94
1/13/2010	x	0		0	233	10.8	10.20	3.77
1/14/2010	x	0		0	270	10.5	10.29	1.32
1/15/2010	x	0		0	331	10.2	10.83	2.70
1/16/2010	x	1	38.0	0	342	10.0	10.60	2.10
1/17/2010	x	1	38.0	0	311	10.2	10.54	2.12
1/18/2010	x	0		0	267	10.4	10.54	1.70
1/19/2010	x	0		0	304	10.0		6.06
1/20/2010	x	0		0	386	10.0		7.75
1/21/2010	x	1	34.0	0	513	10.0		21.60
1/22/2010	x	27	33.5	0	513	8.5		39.00
1/23/2010	x	15	34.9	0	537	10.0		32.20
1/24/2010	x	18	33.6	0	383	8.2	10.32	41.70
1/25/2010	x	39	32.5	0	308	9.0	84.50	18.40
1/26/2010	x	12	33.3	0	281	8.5		11.80
1/27/2010	x	1	34.0	0	263	9.0		6.07
1/28/2010	x	1	37.0	0	248	9.0		4.55
1/29/2010	x	0		0	240	10.1	10.14	3.08
1/30/2010	-	-	-	-	239	-	-	-
1/31/2010	-	-	-	-	235	-	-	-
2/1/2010	x	n/a	n/a	n/a	229	11.2	10.15	
2/2/2010	x	0		0	250			
2/3/2010	x	0		0	415	10.3	10.45	
2/4/2010	x	2	31.5	0	476	10.8	10.10	6.28
2/5/2010	x	4	33.5	0	497	11.3	10.12	7.51
2/6/2010	x	2	33.5	0	530	11.4	10.15	5.42
2/7/2010	x	9	34.2	0	455	10.9	10.13	4.51
2/8/2010	x	5	33.2	0	653	11.0	10.88	4.40
2/9/2010	x	74	34.1	0	867	10.7	10.63	11.50
2/10/2010	x	40	36.3	0	957	10.3	10.61	8.46
2/11/2010	x	26	34.5	0	945	10.6	11.80	7.12
2/12/2010	x	23	33.9	0	927	10.6	10.74	5.72
2/13/2010	x	16	33.7	0	916	11.0	10.67	3.20
2/14/2010	x	7	34.7	0	910	10.7	10.77	2.32
2/15/2010	x	5	34.8	0	904	11.1	10.86	2.68
2/16/2010	-	-	-	-	901	-	-	-
2/17/2010	-	-	-	-	901	-	-	-
2/18/2010	-	-	-	-	913	-	-	-
2/19/2010	-	-	-	-	917	-	-	-
2/20/2010	x	n/a	n/a	n/a	922	11.3	11.05	4.91
2/21/2010	x	3	36.3	0	935	10.8	10.68	4.85
2/22/2010	x	3	35.3	0	940	10.7	10.95	2.72
2/23/2010	x	0		0	955	10.6	10.94	3.04
2/24/2010	x	2	42.0	0	1047	10.3	11.00	5.78
2/25/2010	x	2	37.0	0	1216	10.9	10.67	10.39
2/26/2010	x	11	35.4	0	1053	11.4	10.10	5.23

BatchDate	Days trapped	Chinook salmon		*O. mykiss*	RIP Flow (cfs)	Temp (C)	D.O. (mg/L)	Turbidity (NTU)
		Count	Mean FL (mm)	Count				
2/27/2010	x	4	32.5	0	1027	11.3	10.29	4.33
2/28/2010	x	2	35.0	0	1112	11.1	10.49	3.18
3/1/2010	x	3	33.3	0	966	11.5	10.35	4.98
3/2/2010	-	-	-	-	858	-	-	-
3/3/2010	-	-	-	-	806	-	-	-
3/4/2010	-	-	-	-	967	-	-	-
3/5/2010	-	-	-	-	843	-	-	-
3/6/2010	-	-	-	-	569	-	-	-
3/7/2010	x	n/a	n/a	n/a	454	13.3	9.28	5.86
3/8/2010	x	8	46.6	0	388	12.3	9.15	5.60
3/9/2010	x	3	66.7	0	330			2.15
3/10/2010	x	1		0	313	11.3	9.64	2.55
3/11/2010	x	0		0	300	10.7	9.96	1.49
3/12/2010	x	0		0	294	11.8	10.03	1.41
3/13/2010	x	2	62.0	0	296	12.7	10.51	1.14
3/14/2010	-	-	-	-	288	-	-	-
3/15/2010	-	-	-	-	274	-	-	-
3/16/2010	-	-	-	-	303	-	-	-
3/17/2010	-	-	-	-	328	-	-	-
3/18/2010	-	-	-	-	281	-	-	-
3/19/2010	x	n/a	n/a	n/a	267			
3/20/2010	x	12	67.9	0	262	15.3	9.80	3.89
3/21/2010	x	13	70.0	0	260	15.1	9.41	4.39
3/22/2010	x	42	68.7	0	250	15.2	9.53	5.72
3/23/2010	x	30		0	250	14.0		6.56
3/24/2010	x	36	70.8	0	241	16.1	10.04	3.59
3/25/2010	x	37	71.1	0	239	15.2	9.49	3.28
3/26/2010	x	55	69.7	0	238	14.6	9.60	4.15
3/27/2010	-	-	-	-	238	-	-	-
3/28/2010	-	-	-	-	241	-	-	-
3/29/2010	-	-	-	-	254	-	-	-
3/30/2010	-	-	-	-	255	-	-	-
3/31/2010	x	n/a	n/a	n/a	258			
4/1/2010	x	18	76.3	0	280	15.2	9.75	2.91
4/2/2010	x	27	78.9	0	879	12.8	10.06	5.23
4/3/2010	x	5	73.6	0	1137	11.2	10.47	5.62
4/4/2010	x	9	69.1	0	1185	11.5	10.60	
4/5/2010	x	0		0	1266	10.9	10.51	4.27
4/6/2010	x	0		0	1249	12.2	10.55	3.97
4/7/2010	-	-	-	-	1234	-	-	-
4/8/2010	-	-	-	-	1230	-	-	-
4/9/2010	-	-	-	-	1232	-	-	-
4/10/2010	-	-	-	-	1129	-	-	-
4/11/2010	-	-	-	-	993	-	-	-
4/12/2010	x	n/a	n/a	n/a	1021	11.8	10.22	2.50
4/13/2010	x	1	84.0	0	1120	12.5	10.45	4.44
4/14/2010	x	50	79.2	0	1086	13.0	9.94	16.10

BatchDate	Days trapped	Chinook salmon		*O. mykiss*	RIP Flow (cfs)	Temp (C)	D.O. (mg/L)	Turbidity (NTU)
		Count	Mean FL (mm)	Count				
4/15/2010	x	16	79.6	0	1002	13.3	10.08	6.69
4/16/2010	x	11	81.5	0	992	14.0	0.00	
4/17/2010	-	-	-	-	992	-	-	-
4/18/2010	-	-	-	-	984	-	-	-
4/19/2010	x	n/a	n/a	n/a	977	15.0	9.90	2.14
4/20/2010	x	6	88.5	0	1016	14.9	9.96	
4/21/2010	x	9	86.3	0	1054	12.7	9.87	3.57
4/22/2010	x	2	85.0	0	1015	12.3	10.17	2.05
4/23/2010	x	4	90.3	0	989	12.4	10.00	2.76
4/24/2010	x	15	88.1	0	971	14.1	9.93	4.58
4/25/2010	x	12	84.6	0	970	14.9	9.92	4.81
4/26/2010	x	36	86.5	0	1011	15.7	9.99	2.67
4/27/2010	x	2	85.0	0	1030	15.3	9.86	2.80
04/28/10	x	6	83.8	0	1025	14.5	10.17	1.72
04/29/10	x	3	88.7	0	991	13.5	10.51	2.95
04/30/10	x	15	89.4	0	993	13.0	10.09	
05/01/10	x	12	91.1	0	1002	13.7	9.86	3.28
05/02/10	x	7	92.0	0	991	14.6	9.76	1.95
05/03/10	x	21	91.4	0	1002	15.8	9.85	3.24
05/04/10	x	7	94.9	0	1001	15.9	9.81	1.52
05/05/10	x	5	90.4	0	1017	16.2	10.24	2.65
05/06/10	x	9	86.8	0	997	15.4	10.29	1.45
05/07/10	x	8	93.6	0	1026	15.0	10.2	3.14
05/08/10	x	7	87.6	0	1032	15.7	10.36	4.54
05/09/10	x	5	90.6	0	1010	15.3	10.4	1.55
05/10/10	x	12	92.8	0	1027	12.8	9.52	1.56
05/11/10	x	7	95.0	0	1002	14	9.89	1.73
05/12/10	x	19	0.0	0	995	14.2	10	2.38
05/13/10	x	9	94.4	1	994	15.1	10.05	2.48
05/14/10	x	8	93.8	0	1006	16	10.1	2.9
05/15/10	x	7	90.4	0	1008	16.1	10.33	3.02
05/16/10	x	9	80.4	0	1020	16.1	10.57	5.37
Grand Total	91	997	61.9	1	-	-	-	-


1400
1200
1000
800
600
400
200
0
Flow (cfs)
80
70
60
50
40
30
20
10
0
Number of Chinook salmon
1/11/2010
1/18/2010
1/25/2010
2/1/2010
2/8/2010
2/15/2010
2/22/2010
3/1/2010
3/8/2010
3/15/2010
3/22/2010
3/29/2010
4/5/2010
4/12/2010
4/19/2010
4/26/2010
05/03/10
05/10/10
Daily Catch
RIP Flow
Operational Period

Chinook catch at Caswell as of 5-18

1996	2167
1997	1939
1998	18642
1999	40093
2000	73226
2001	8984
2002	3625
2003	13888
2004	39831
2005	24916
2006	879
2007	2472
2008	197
2009	733
2010	997

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

MAY 2010 — NEW MELONES LAKE DAILY OPERATIONS

RUN DATE: May 19, 2010

DAY	ELEV	STORAGE 1000 ACRE-FEET IN LAKE	CHANGE	COMPUTED* INFLOW C.F.S.	RELEASE - C.F.S. POWER	SPILL	OUTLET	EVAPORATION C.F.S.	INCHES	PRECIP INCHES
		1,276.7								
1	978.01	1,277.7	+1.0	2,240	1,672	0	0	60	.22	.00
2	978.04	1,278.0	+0.3	2,252	2,102	0	0	22	.08	.00
3	978.15	1,278.9	+0.9	2,295	1,700	0	0	128	.47	.00
4	978.19	1,279.2	+0.3	2,239	2,015	0	0	54	.20	.00
5	978.20	1,279.3	+0.1	2,399	2,319	0	0	38	.14	.00
6	978.22	1,279.5	+0.2	2,374	2,235	0	0	54	.20	.00
7	978.19	1,279.2	-0.3	2,489	2,513	0	0	103	.38	.00
8	978.23	1,279.6	+0.3	2,262	2,054	0	0	38	.14	.00
9	978.37	1,280.8	+1.2	2,396	1,714	0	0	87	.32	.00
10	978.35	1,280.6	-0.2	2,341	2,418	0	0	8	.03	.02
11	978.28	1,280.0	-0.6	2,227	2,508	0	0	16	.06	.73
12	978.23	1,279.6	-0.4	2,062	2,230	0	0	44	.16	.01
13	978.35	1,280.6	+1.0	2,304	1,718	0	0	76	.28	.00
14	978.33	1,280.4	-0.2	2,372	2,392	0	0	65	.24	.00
15	978.41	1,281.1	+0.7	2,325	1,947	0	0	38	.14	.00
16	978.42	1,281.2	+0.1	2,451	2,344	0	0	65	.24	.00
17	978.35	1,280.6	-0.6	2,608	2,850	0	0	55	.20	.00
18	978.23	1,279.6	-1.0	2,556	3,055	0	0	11	.04	.17
TOTALS			**+2.8**	**42,192**	**39,786**	**0**	**0**	**962**	**3.54**	**.93**
ACRE-FEET			**+2,800**	**83,688**	**78,916**	**0**	**0**	**1,908**		

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

SUMMARY

RELEASE (ACRE-FEET)

POWER	78,916	OUTLET	0
SPILL	0	TOTAL	78,916

PRECIPITATION

THIS MONTH =	.93
JULY 1, 2009 TO DATE =	35.43

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

MAY 2010 — TULLOCH RESERVOIR DAILY OPERATIONS

RUN DATE: 05/19/2010

DAY	ELEV	STORAGE ACRE-FEET RES.	CHANGE	COMPUTED* INFLOW C.F.S.	NEW MELONES RELEASE	RELEASE - C.F.S. POWER	SPILL	OUTLET	EVAP C.F.S. (1)
		59,032							
1	503.28	58,929	-103	1,723	1,672	1,767	0	0	8
2	503.66	59,362	+433	2,131	2,102	1,850	60	0	3
3	503.27	58,918	-444	1,759	1,700	1,860	106	0	17
4	503.41	59,077	+159	2,038	2,015	1,861	90	0	7
5	503.90	59,636	+559	2,328	2,319	1,858	183	0	5
6	504.14	59,912	+276	2,262	2,235	1,862	254	0	7
7	504.85	60,733	+821	2,574	2,513	1,868	278	0	14
8	504.77	60,641	-92	2,076	2,054	1,869	248	0	5
9	504.23	60,016	-625	1,757	1,714	1,868	192	0	12
10	505.04	60,954	+938	2,481	2,418	1,869	138	0	1
11	505.87	61,930	+976	2,564	2,508	1,875	195	0	2
12	507.07	63,362	+1,432	2,822	2,230	1,877	217	0	6
13	505.41	61,389	-1,973	1,150	1,718	1,877	257	0	11
14	505.72	61,754	+365	2,407	2,392	1,872	351	0	0
15	505.16	61,095	-659	1,942	1,947	1,872	397	0	5
16	505.52	61,519	+424	2,391	2,344	1,870	298	0	9
17	506.76	62,990	+1,471	2,846	2,850	1,879	217	0	8
18	508.24	64,784	+1,794	3,041	3,055	1,890	245	0	2
TOTALS			**+5,752**	**40,292**	**39,786**	**33,544**	**3,726**	**0**	**122**
ACRE-FEET			**+5,752**	**79,919**	**78,916**	**66,535**	**7,391**	**0**	**242**

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

SUMMARY
RELEASE (ACRE-FEET)

POWER	66,535	OUTLET	0
SPILL	7,391	TOTAL	73,926

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

MAY 2010 — GOODWIN RESERVOIR DAILY OPERATIONS

RUN DATE: May 19, 2010

DAY	ELEV	STORAGE ACRE-FEET RES.	CHANGE	TULLOCH RELEASE	RELEASE - C.F.S. RIVER OUTLET	RIVER SPILL	CANALS JOINT MAIN	CANALS SOUTH MAIN
		573						
1	360.52	573	+0	1,767	0	1,005	464	226
2	360.55	576	+3	1,910	0	1,001	572	250
3	360.55	576	+0	1,966	0	1,005	614	252
4	360.55	576	+0	1,951	0	1,015	587	260
5	360.55	576	+0	2,041	0	1,005	687	253
6	360.55	576	+0	2,116	0	1,012	751	247
7	360.55	576	+0	2,146	0	1,025	779	233
8	360.55	576	+0	2,117	0	1,017	806	180
9	360.55	576	+0	2,060	0	1,018	746	171
10	360.55	576	+0	2,007	0	1,015	656	181
11	360.55	576	+0	2,070	0	1,025	693	212
12	360.55	576	+0	2,094	0	1,011	758	242
13	360.55	576	+0	2,134	0	1,028	803	225
14	360.55	576	+0	2,223	0	1,017	857	252
15	360.55	576	+0	2,269	0	1,016	874	265
16	360.42	566	-10	2,168	0	876	873	284
17	360.41	566	+0	2,096	0	790	882	305
18	360.44	568	+2	2,135	0	818	891	318
TOTALS			**-5**	**37,270**	**0**	**17,699**	**13,293**	**4,356**
ACRE-FEET			**-5**	**73,925**	**0**	**35,106**	**26,367**	**8,640**

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

SUMMARY

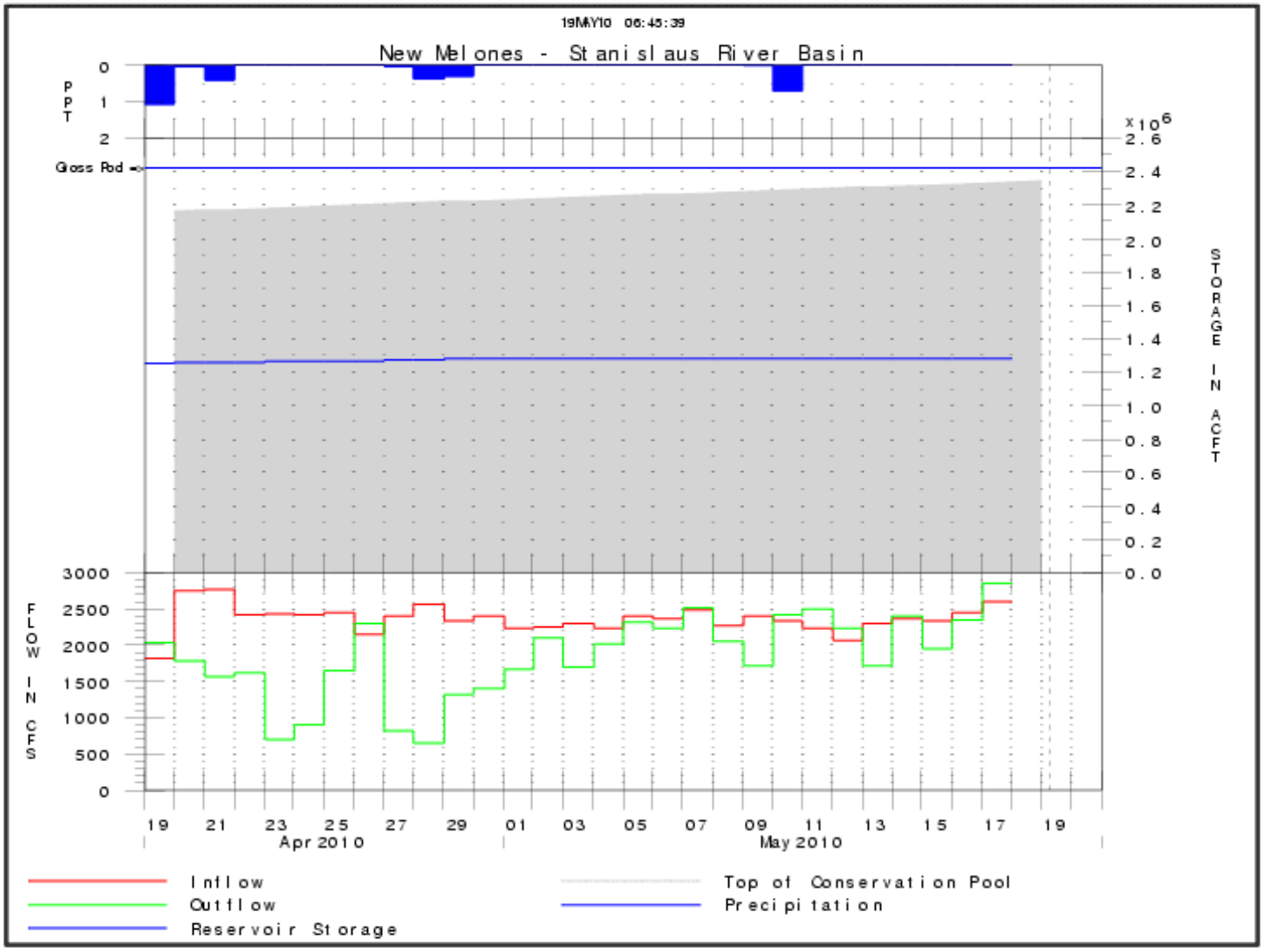
RELEASE (ACRE-FEET)

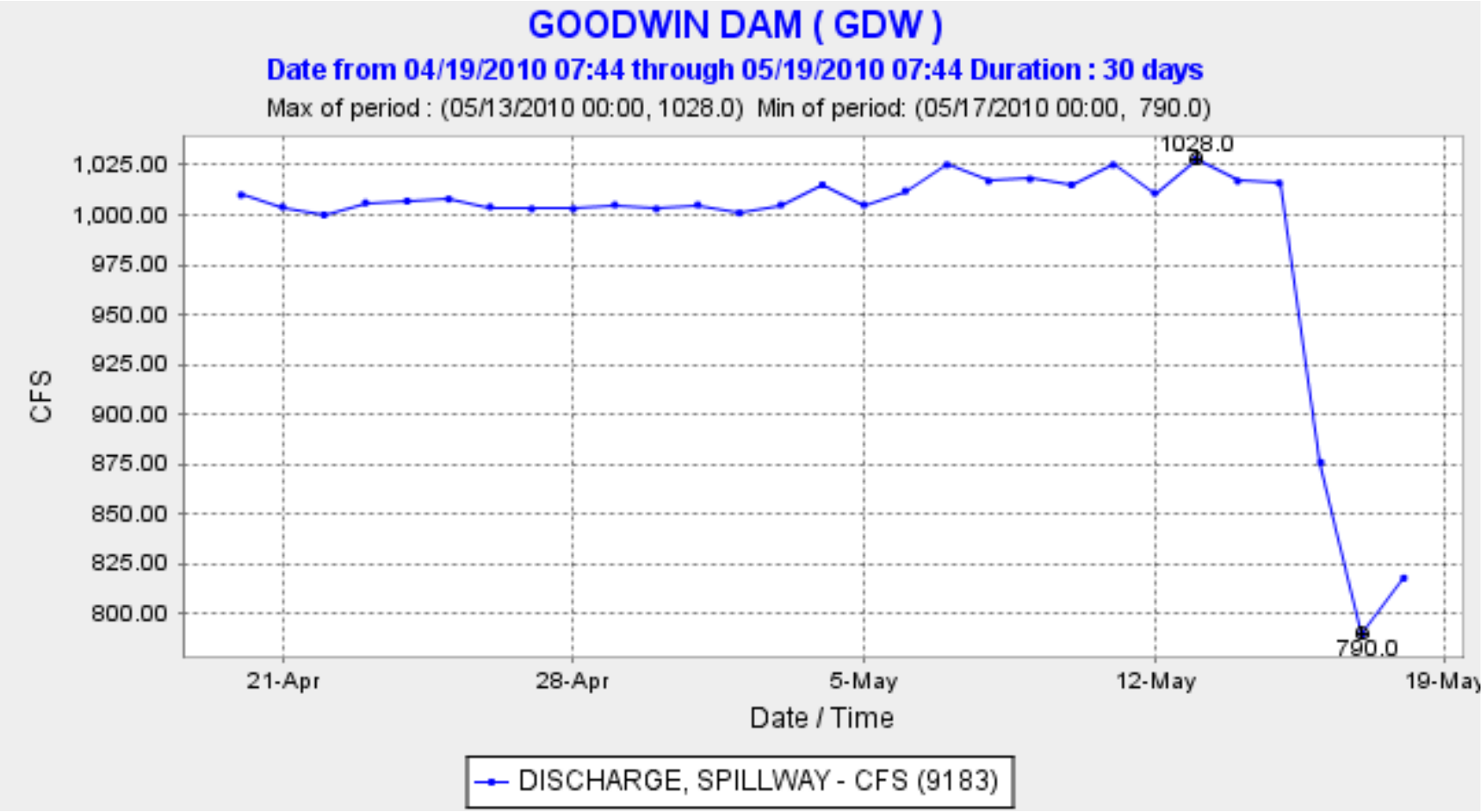
JOINT MAIN CANAL	26,367	OUTLET	0
SOUTH MAIN CANAL	8,640	SPILL	35,106
		TOTAL	70,113

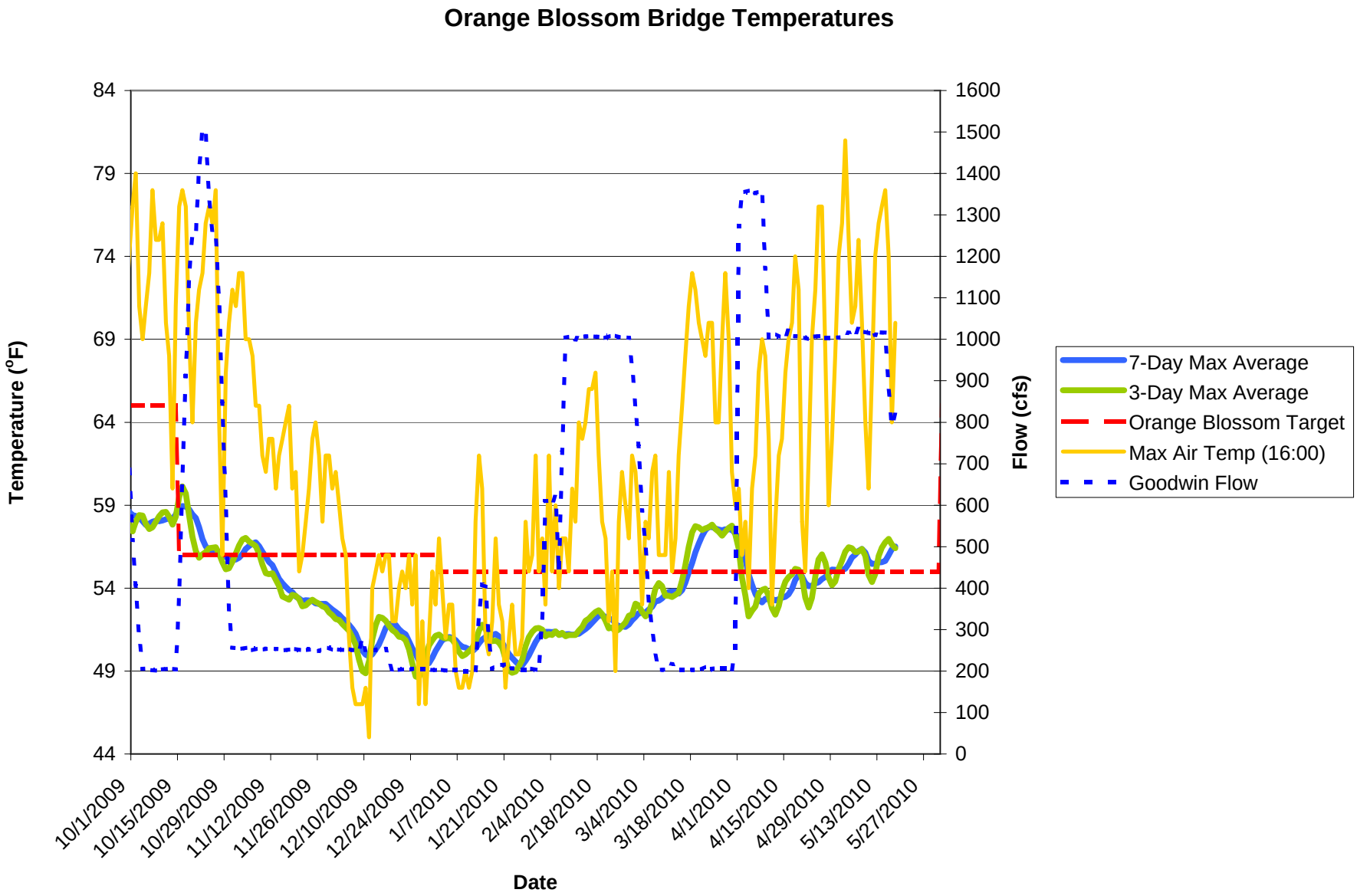
Provisional Data NOT Reviewed for Accuracy

US Army Corps of Engineers
Sacramento District
Water Control Data System

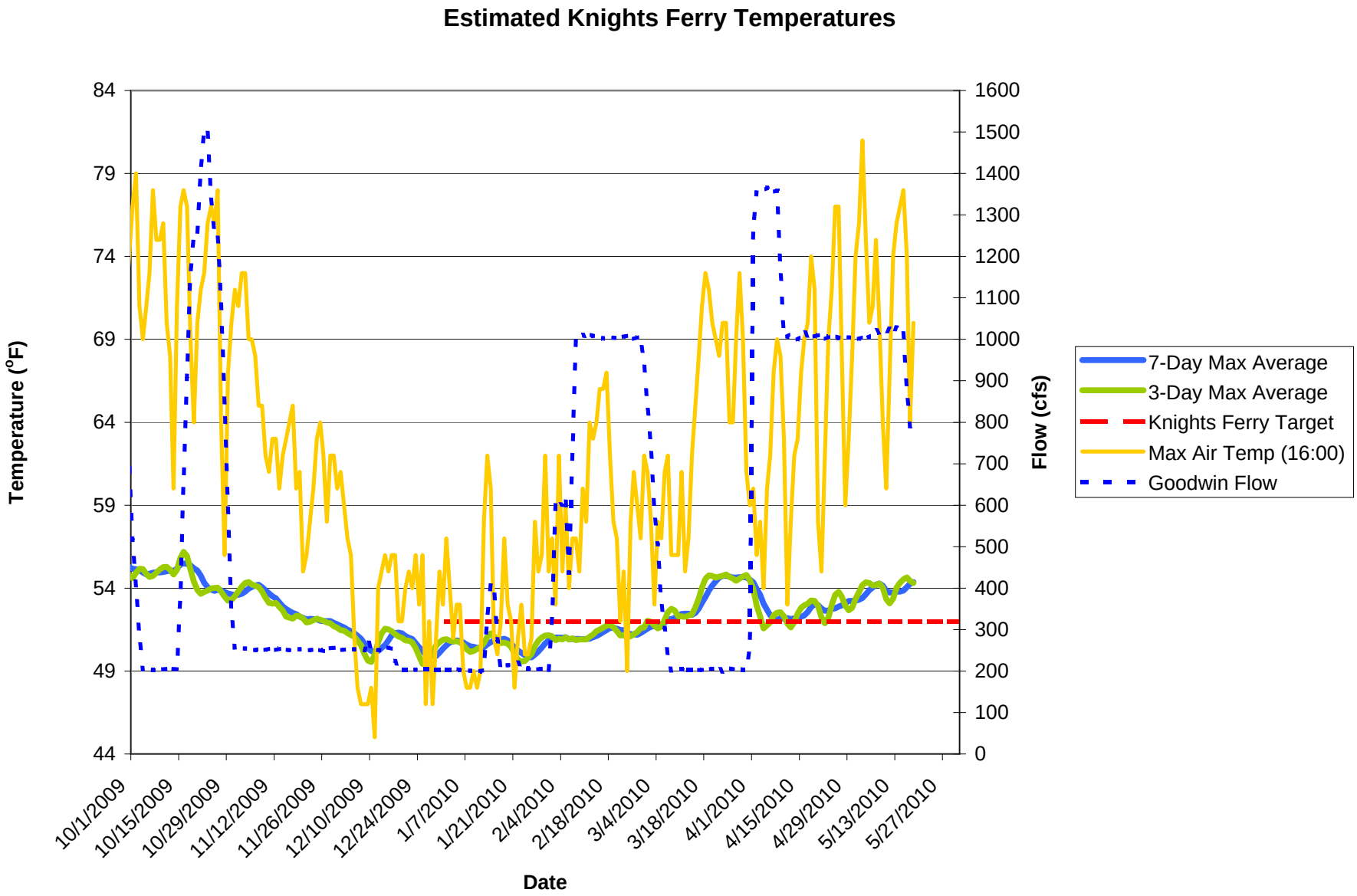
/ WCDS Home Page /
Back to Plot Menu Page / Tabulated Data /




GOODWIN DAM (GDW)
Date from 04/19/2010 07:44 through 05/19/2010 07:44 Duration : 30 days
Max of period : (05/13/2010 00:00, 1028.0) Min of period: (05/17/2010 00:00, 790.0)
1028.0
790.0
1,025.00
1,000.00
975.00
950.00
925.00
900.00
875.00
850.00
825.00
800.00
CFS
21-Apr
28-Apr
5-May
12-May
19-May
Date / Time
DISCHARGE, SPILLWAY - CFS (9183)


Orange Blossom Bridge Temperatures
Temperature (°F)
Flow (cfs)
Date
84
79
74
69
64
59
54
49
44
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
10/1/2009
10/15/2009
10/29/2009
11/12/2009
11/26/2009
12/10/2009
12/24/2009
1/7/2010
1/21/2010
2/4/2010
2/18/2010
3/4/2010
3/18/2010
4/1/2010
4/15/2010
4/29/2010
5/13/2010
5/27/2010
7-Day Max Average
3-Day Max Average
Orange Blossom Target
Max Air Temp (16:00)
Goodwin Flow

5/19/2010


Estimated Knights Ferry Temperatures
Temperature (°F)
84
79
74
69
64
59
54
49
44
Flow (cfs)
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
10/1/2009
10/15/2009
10/29/2009
11/12/2009
11/26/2009
12/10/2009
12/24/2009
1/7/2010
1/21/2010
2/4/2010
2/18/2010
3/4/2010
3/18/2010
4/1/2010
4/15/2010
4/29/2010
5/13/2010
5/27/2010
Date
7-Day Max Average
3-Day Max Average
Knights Ferry Target
Max Air Temp (16:00)
Goodwin Flow

5/19/2010

Preliminary-Stanislaus River - 2010
May 50%-Exceedence Outlook
Maximum Mean 6-Hour Temperature