TECHNICAL M E M O R A N D U M No. 2

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TO: John Gray
URS Corp., Santa Barbara, CA

DATE: January 16, 2001
rev. December 22, 2001

FROM: Curtis Lawler

JOB NO.: 1815

RE: **Hydrologic Analyses of Daily Flows for Use in Assessing Impacts on Rainbow Trout/ Steelhead**

1. INTRODUCTION

This second technical memorandum includes DEIR hydrologic impact analyses for the seven alternatives identified for the Cachuma Water Rights EIR. Please see the previous draft technical memorandum (RE: Impacts of EIR Alternatives using the Santa Ynez River Hydrology Model, 12/22/2000, rev.12/22/2001) for a detailed discussion on how these alternatives were incorporated into the model and the results concerning Cachuma Reservoir operations, storage and elevations; Santa Ynez River flows and above Narrows groundwater storage; and water right releases and Cachuma Project deliveries. Included in this memorandum are the DEIR hydrologic impact analyses for:

- Effects on Spawning Habitat for Rainbow Trout/Steelhead
- Effects on Rearing Habitat for Rainbow Trout/Steelhead
- Effects on Passage for Rainbow Trout/Steelhead

The same procedures and tools as used in the Biological Assessment(BA) and Fish Management Plan (FMP) were used for these EIR analyses concerning Rainbow Trout/Steelhead. These analyses use the same results from the Santa Ynez River Hydrology Model (SYRHM) as presented in the first technical memorandum. However, monthly flows from the SYRHM were converted to daily flows based on daily variations of gaged flow in Salsipuedes Creek (1941-1993). Discussion of these hydrologic impacts analyzed in this memo will be developed in coordination with ENTRIX.

2. EFFECTS ON SPAWNING AND REARING HABITAT

Table 1 shows the exceedance flows for various alternatives and for various seasons within the year. The daily exceedance flows in Table 1 generally match the monthly flow exceedances presented in Figures 7A, 7B, and 7C of the first memorandum (12/22/2000).

During the spawning period of the Rainbow Trout/Steelhead, extending from January through April, flows in the Santa Ynez River from Bradbury Dam to Highway 154 would increase under Alternatives 3A-C and 4A-B roughly by 4 cfs and 2 cfs, compared with Alternatives 1 and 2, respectively.

During the remaining period (May-December) when the fish would be rearing, flows in the Santa Ynez River from Bradbury Dam to Highway 154 would also increase under Alternatives 3A-C and 4A-B roughly by 4 cfs and 2 cfs compared with Alternatives 1 and 2, respectively.

Table 2 shows the minimum flows by water year for each alternative. In the reach between Bradbury Dam and Highway 154 Bridge, Alternative 1 provides year-round flows in about 3 out of 52 years (6%). Alternatives 2, 3A-C and 4A-B maintain a higher minimum flow in the reach between Bradbury Dam and Highway 154 Bridge than Alternative 2 and provide year-round flows in 50 out of 52 years (96%).

3. EFFECTS ON PASSAGE

Tables 3Aand 3B show the summary of passage days generated for each of the EIR alternatives. A passage day was defined when flows of the Santa Ynez River at Solvang were 25 cfs or greater during the period from January through April. In general, Table 3a shows that in wet years all of the EIR alternatives have many passage days; and in normal and dry years, Alternatives 3A-C and 4A-B have more passage days than Alternatives 1 and 2. The Biological Opinion (BO) states that Reclamation will have to come up with a strategy to reduce the potential enhancement of passage days in dry years and increase the enhancement of passage days in average and wet years, but that plan is currently not available.

TABLE 1
EXCEEDANCE FLOWS FOR EIR ALTERNATIVES
USING SANTA YNEZ RIVER HYDROLOGY MODEL AND DAILY FLOW ANALYSIS [1)]
(all flows in cfs)

	Exceedance Flows		
Alt 1	80%	50%	20%
Bradbury Dam to Highway 154			
Jan-April	0.2	1.0	47.5
Jan-Mar	0.2	0.9	22.6
April-Jun	0.6	4.3	56.8
Jul-Sep	0.6	7.6	44.0
Oct-Dec	0.0	0.6	6.2
Highway 154 to Refugio Road			
Jan-April	0.0	0.9	54.0
Jan-Mar	0.0	0.8	29.2
April-Jun	0.1	3.9	51.9
Jul-Sep	0.1	7.2	40.7
Oct-Dec	0.0	0.1	5.4
Refugio Road to Alisal Bridge			
Jan-April	0.0	1.3	72.1
Jan-Mar	0.0	1.1	39.8
April-Jun	0.0	2.9	44.6
Jul-Sep	0.0	3.0	30.5
Oct-Dec	0.0	0.0	3.9

	Exceedance Flows		
Alt 2	80%	50%	20%
Bradbury Dam to Highway 154			
Jan-April	2.6	3.3	46.3
Jan-Mar	2.5	3.2	19.7
April-Jun	3.1	5.1	55.7
Jul-Sep	3.7	10.4	45.3
Oct-Dec	2.9	3.4	7.0
Highway 154 to Refugio Road			
Jan-April	2.0	2.5	50.7
Jan-Mar	2.0	2.5	26.7
April-Jun	2.5	4.8	52.5
Jul-Sep	2.5	9.5	42.6
Oct-Dec	1.5	2.5	5.5
Refugio Road to Alisal Bridge			
Jan-April	0.2	2.5	70.3
Jan-Mar	0.1	2.3	39.9
April-Jun	0.4	4.7	45.8
Jul-Sep	0.0	4.8	29.0
Oct-Dec	0.0	0.1	4.2

	Exceedance Flows		
Alt 3A	80%	50%	20%
Bradbury Dam to Highway 154			
Jan-April	3.5	5.5	54.1
Jan-Mar	3.3	5.4	33.1
April-Jun	4.9	6.3	55.5
Jul-Sep	6.0	11.7	45.6
Oct-Dec	3.6	5.8	9.4
Highway 154 to Refugio Road			
Jan-April	2.7	5.0	61.6
Jan-Mar	2.7	5.0	40.2
April-Jun	4.9	5.0	52.8
Jul-Sep	4.9	10.1	40.8
Oct-Dec	2.4	4.9	9.3
Refugio Road to Alisal Bridge			
Jan-April	1.1	4.5	77.7
Jan-Mar	0.8	4.0	56.6
April-Jun	2.1	5.2	46.2
Jul-Sep	0.8	6.1	31.1
Oct-Dec	0.0	1.5	5.9

	Exceedance Flows		
Alt 3B	80%	50%	20%
Bradbury Dam to Highway 154			
Jan-April	3.5	5.5	51.7
Jan-Mar	3.3	5.4	30.8
April-Jun	5.0	6.3	55.5
Jul-Sep	6.0	11.7	46.9
Oct-Dec	3.6	5.8	9.5
Highway 154 to Refugio Road			
Jan-April	2.7	5.0	59.6
Jan-Mar	2.7	5.0	36.5
April-Jun	4.9	5.0	52.8
Jul-Sep	4.9	10.1	42.7
Oct-Dec	2.4	4.9	8.4
Refugio Road to Alisal Bridge			
Jan-April	1.1	4.5	76.7
Jan-Mar	0.8	4.1	54.7
April-Jun	2.3	5.2	46.2
Jul-Sep	0.8	6.1	31.2
Oct-Dec	0.0	1.5	5.5

	Exceedance Flows		
Alt 3C	80%	50%	20%
Bradbury Dam to Highway 154			
Jan-April	3.5	5.5	49.9
Jan-Mar	3.3	5.4	29.9
April-Jun	5.0	6.3	55.5
Jul-Sep	6.2	11.7	46.3
Oct-Dec	3.8	5.9	9.6
Highway 154 to Refugio Road			
Jan-April	2.7	5.0	59.3
Jan-Mar	2.7	5.0	35.9
April-Jun	4.9	5.0	52.8
Jul-Sep	4.9	10.1	42.9
Oct-Dec	2.5	4.9	8.5
Refugio Road to Alisal Bridge			
Jan-April	1.1	4.5	75.7
Jan-Mar	0.8	4.1	53.6
April-Jun	2.3	5.2	46.2
Jul-Sep	0.8	6.1	31.1
Oct-Dec	0.0	1.5	5.5

	Exceedance Flows		
Alt 4A&B	80%	50%	20%
Bradbury Dam to Highway 154			
Jan-April	3.6	5.5	47.7
Jan-Mar	3.4	5.4	27.3
April-Jun	4.8	6.2	28.0
Jul-Sep	6.3	11.2	35.2
Oct-Dec	3.7	5.8	12.3
Highway 154 to Refugio Road			
Jan-April	2.8	5.0	54.2
Jan-Mar	2.8	5.0	32.1
April-Jun	4.9	5.0	24.7
Jul-Sep	4.9	9.8	30.6
Oct-Dec	2.5	4.9	11.2
Refugio Road to Alisal Bridge			
Jan-April	1.5	4.6	70.9
Jan-Mar	1.2	4.1	51.2
April-Jun	1.9	4.5	19.0
Jul-Sep	0.8	5.3	15.4
Oct-Dec	0.0	1.5	7.1

1) Monthly flows from the Santa Ynez River Model were converted to daily flows based on daily variations of gaged flow in Salsipuedes Creek (1941-1993).

TABLE 2
MINIMUM FLOW BY WATER YEAR
FOR EIR ALTERNATIVES
(CFS)

	ALT 1			ALT 2			ALT 3A			ALT 3B			ALT 3C			ALT 4A&B		
Water Year	Below Hilton Ck	154 Bridge	Alisal Bridge	Below Hilton Ck	154 Bridge	Alisal Bridge	Below Hilton Ck	154 Bridge	Alisal Bridge	Below Hilton Ck	154 Bridge	Alisal Bridge	Below Hilton Ck	154 Bridge	Alisal Bridge	Below Hilton Ck	154 Bridge	Alisal Bridge
1942	0.5	0.5	0.5	1	2.5	0.5	2.5	5	1.5	2.5	5	1.5	2.5	5	1.5	2.5	5	1.5
1943	0.5	0	0	3.5	2.5	0	6	5	1	6	5	1	6	5	1	6	5	1
1944	0.5	0	0	3	2.5	0	4.5	5	1.5	4.5	5	1.5	4.5	5	1.5	4.5	5	1.5
1945	0.5	0	0	2	2.5	0	3	5	1.5	3	5	1.5	3	5	1.5	3	5	1.5
1946	0.5	0	0	0.5	2.5	0	3.5	5	1	3.5	5	1	3.5	5	1	3.5	5	1
1947	0	0	0	3	2.5	0.5	5.5	5	2	5.5	5	2	5.5	5	2	5	5	0.5
1948	0	0	0	2	1.5	0	3	2.5	0	3.5	2.5	0	3.5	2.5	0	4	2.5	0
1949	0	0	0	0	1.5	0	2	2.5	0	2	2.5	0	2	2.5	0	2	2.5	0
1950	0	0	0	2.5	1.5	0	2	2.5	0	2	2.5	0	2	2.5	0	2	2.5	0
1951	0	0	0	0.5	0	0	0.5	0	0	0.5	0	0	0.5	0	0	0.5	0	0
1952	0	0	0	0.5	0	0	0.5	0	0	0.5	0	0	0.5	0	0	0.5	0	0
1953	0	0	0	0.5	2.5	0	2.5	5	1	2.5	5	1	2.5	5	1	2.5	5	1
1954	0	0	0	0.5	2.5	0.5	2.5	5	1.5	2.5	5	1.5	2.5	5	1.5	2.5	5	1
1955	0	0	0	2	1.5	0	2.5	2.5	0	2.5	2.5	0	2.5	2.5	0	2.5	2.5	0
1956	0	0	0	0	1.5	0	1	2.5	0	1	2.5	0	1	2.5	0	1	2.5	0
1957	0	0	0	2	1.5	0	2.5	2.5	0	2.5	2.5	0	2.5	2.5	0	2.5	2.5	0
1958	0	0	0	0.5	1.5	0	1	2.5	0	1	2.5	0	1	2.5	0	1	2.5	0
1959	0	0	0	0.5	2.5	0	3.5	5	1.5	3.5	5	1.5	3.5	5	1.5	3.5	5	1.5
1960	0	0	0	2.5	1.5	0	3.5	2.5	0	3.5	2.5	0	3.5	2.5	0	3.5	2.5	0
1961	0	0	0	2.5	1.5	0	3.5	2.5	0	3.5	2.5	0	3.5	2.5	0	3.5	2.5	0
1962	0	0	0	0	1.5	0	2	2.5	0	2	2.5	0	2	2.5	0	2	2.5	0
1963	0	0	0	0	2.5	0	2.5	5	0.5	2.5	5	0.5	2.5	5	0.5	2.5	5	0.5
1964	0	0	0	2.5	1.5	0	3.5	2.5	0	3.5	2.5	0	3.5	2.5	0	3.5	2.5	0
1965	0	0	0	0.5	1.5	0	1.5	2.5	0	1.5	2.5	0	1.5	2.5	0	1.5	2.5	0
1966	0	0	0	0	1.5	0	1.5	2.5	0	1.5	2.5	0	1.5	2.5	0	1.5	2.5	0
1967	0.5	0.5	0.5	0.5	2.5	1.5	2	5	1.5	2	5	1.5	2	5	1.5	2	5	2
1968	0	0	0	3	2.5	0	5	5	1.5	5	5	1.5	5	5	1.5	5	5	1.5
1969	0	0	0	1.5	2.5	0.5	6	5	2	6	5	2	6	5	2	6	5	2
1970	0.5	0	0	3	2.5	0	4	5	1.5	4	5	1.5	4	5	1.5	4	5	1.5
1971	0.5	0	0	0.5	2.5	0.5	3	5	1.5	3	5	1.5	3	5	1.5	3	5	1
1972	0	0	0	0	2.5	0	2.5	2.5	0	2.5	2.5	0	2.5	5	0	2.5	5	0
1973	0	0	0	0	1.5	0	1	2.5	0	1	2.5	0	1	2.5	0	2	2.5	0
1974	0.5	0	0	0.5	2.5	0	2.5	5	1.5	2.5	5	1.5	2.5	5	1.5	2.5	5	1.5
1975	0	0	0	0.5	2.5	0	2.5	5	1	2.5	5	1	2.5	5	1	2.5	5	1
1976	0	0	0	1	2.5	0	4.5	5	0.5	4.5	5	0.5	4.5	5	0.5	4.5	5	1
1977	0	0	0	2.5	1.5	0	3.5	2.5	0	3.5	2.5	0	3.5	2.5	0	3.5	2.5	0
1978	0	0	0	0	1.5	0	1	2.5	0	1	2.5	0	1	2.5	0	1	2.5	0
1979	0.5	0	0	1	2.5	0.5	3	5	1.5	3	5	1.5	3	5	1.5	3	5	1.5
1980	0.5	0	0	1	2.5	0	3	5	1.5	3	5	1.5	3	5	1.5	3	5	2
1981	0.5	0	0	1.5	2.5	0	2.5	5	1.5	2.5	5	1.5	2.5	5	1.5	2.5	5	1.5
1982	0.5	0	0	1	2.5	0.5	2.5	5	2	2.5	5	2	2.5	5	2	2.5	5	1
1983	0	0	0	1	2.5	0.5	2.5	5	0.5	2.5	5	0.5	2.5	5	0.5	2.5	5	3.5
1984	1	0.5	0	3.5	2.5	1	4.5	5	1.5	4.5	5	1.5	4.5	5	1.5	4.5	5	1.5
1985	0.5	0	0	3	2.5	0	5	5	1	5	5	1	5	5	1	5	5	1
1986	0	0	0	0	1.5	0	2	5	0.5	2	5	0.5	2	5	0.5	2	5	0.5
1987	0	0	0	0.5	2.5	0	5	5	0.5	5	5	0.5	5	5	0.5	5	5	0.5
1988	0	0	0	3	2.5	0	3	2.5	0.5	4.5	5	0.5	4.5	5	0.5	3.5	2.5	0
1989	0	0	0	2	1.5	0	3.5	2.5	0	3.5	2.5	0	3.5	2.5	0	3.5	2.5	0
1990	0	0	0	2.5	1.5	0	3.5	2.5	0	3.5	2.5	0	3.5	2.5	0	3.5	2.5	0
1991	0	0	0	0	1.5	0	1	2.5	0	1	2.5	0	1	2.5	0	1	2.5	0
1992	0	0	0	0	1.5	0	2	2.5	0	2	2.5	0	2	2.5	0	2	2.5	0
1993	0	0	0	3	2.5	0.5	5.5	5	2.5	5.5	5	2.5	5.5	5	2.5	5.5	5	3

TABLE 3A
SUMMARY OF PASSAGE DAYS GENERATED
FOR EIR ALTERNATIVES [1)]
JANUARY THROUGH APRIL

YEAR	Hydrologic Year Type Classification [2)]	ALT 1 # of Passage Days [3)]	Indicator of > 14 days	ALT 2 # of Passage Days	Addtl Days from Alt 1	Indicator of > 14 days	ALT 3A # of Passage Days	Addtl Days from Baseline	Indicator of > 14 days	ALT 3B # of Passage Days	Addtl Days from Baseline	Indicator of > 14 days	ALT 3C # of Passage Days	Addtl Days from Baseline	Indicator of > 14 days	ALT 4A&B # of Passage Days	Addtl Days from Baseline	Indicator of > 14 days
1942	normal	55	X	47	-8	X	42	-13	X	41	-14	X	41	-14	X	40	-15	X
1943	wet	120	X	120	0	X	120	0	X	120	0	X	120	0	X	120	0	X
1944	wet	90	X	90	0	X	91	1	X	91	1	X	91	1	X	89	-1	X
1945	wet	65	X	66	1	X	66	1	X	66	1	X	66	1	X	66	1	X
1946	normal	33	X	33	0	X	25	-8	X	25	-8	X	23	-10	X	7	-26	
1947	normal	0		0	0		0	0		0	0		0	0		0	0	
1948	dry	0		0	0		0	0		0	0		0	0		0	0	
1949	dry	1		1	0		14	13	X	14	13	X	14	13	X	15	14	X
1950	dry	0		0	0		14	14	X	14	14	X	14	14	X	14	14	X
1951	dry	0		0	0		0	0		0	0		0	0		0	0	
1952	wet	76	X	76	0	X	76	0	X	73	-3	X	73	-3	X	73	-3	X
1953	normal	3		5	2		19	16	X	18	15	X	18	15	X	19	16	X
1954	normal	5		9	4		23	18	X	24	19	X	24	19	X	24	19	X
1955	dry	0		0	0		0	0		0	0		0	0		1	1	
1956	normal	9		11	2		11	2		11	2		11	2		11	2	
1957	dry	0		0	0		0	0		0	0		0	0		0	0	
1958	wet	66	X	68	2	X	70	4	X	70	4	X	70	4	X	70	4	X
1959	normal	2		4	2		15	13	X	15	13	X	15	13	X	15	13	X
1960	dry	1		1	0		15	14	X	15	14	X	15	14	X	15	14	X
1961	dry	0		0	0		0	0		0	0		0	0		0	0	
1962	wet	32	X	39	7	X	42	10	X	42	10	X	42	10	X	42	10	X
1963	dry	4		5	1		6	2		6	2		6	2		6	2	
1964	dry	0		0	0		0	0		0	0		0	0		0	0	
1965	normal	4		5	1		5	1		5	1		5	1		5	1	
1966	wet	9		11	2		11	2		11	2		11	2		11	2	
1967	wet	98	X	97	-1	X	97	-1	X	97	-1	X	97	-1	X	97	-1	X
1968	dry	1		1	0		15	14	X	15	14	X	15	14	X	15	14	X
1969	wet	104	X	104	0	X	104	0	X	104	0	X	104	0	X	104	0	X
1970	normal	10		9	-1		17	7	X	17	7	X	17	7	X	17	7	X
1971	normal	0		0	0		1	1		1	1		1	1		1	1	
1972	dry	0		0	0		0	0		0	0		0	0		0	0	
1973	wet	85	X	86	1	X	87	2	X	87	2	X	87	2	X	87	2	X
1974	normal	37	X	28	-9	X	13	-24		12	-25		12	-25		10	-27	
1975	normal	68	X	67	-1	X	74	6	X	74	6	X	74	6	X	74	6	X
1976	dry	1		1	0		16	15	X	16	15	X	16	15	X	16	15	X
1977	dry	0		0	0		0	0		0	0		0	0		0	0	
1978	wet	92	X	92	0	X	92	0	X	92	0	X	92	0	X	91	-1	X
1979	wet	86	X	85	-1	X	84	-2	X	84	-2	X	81	-5	X	76	-10	X
1980	wet	92	X	95	3	X	95	3	X	95	3	X	95	3	X	95	3	X
1981	normal	10		11	1		22	12	X	22	12	X	22	12	X	22	12	X
1982	normal	6		6	0		19	13	X	19	13	X	19	13	X	19	13	X
1983	wet	100	X	100	0	X	100	0	X	100	0	X	100	0	X	100	0	X
1984	normal	60	X	60	0	X	60	0	X	60	0	X	60	0	X	60	0	X
1985	dry	0		0	0		0	0		0	0		0	0		0	0	
1986	wet	62	X	61	-1	X	62	0	X	62	0	X	62	0	X	57	-5	X
1987	dry	0		2	2		15	15	X	15	15	X	15	15	X	15	15	X
1988	dry	0		0	0		15	15	X	15	15	X	15	15	X	15	15	X
1989	dry	0		0	0		0	0		0	0		0	0		0	0	
1990	dry	0		0	0		0	0		0	0		0	0		0	0	
1991	normal	9		11	2		11	2		11	2		11	2		11	2	
1992	wet	26	X	28	2	X	29	3	X	29	3	X	29	3	X	31	5	X
1993	wet	120	X	120	0	X	120	0	X	120	0	X	120	0	X	120	0	X
AVG 42-93		32		32			35			35			35			34		
SUM 42-93			21			21			33			33			33			32
			40%			40%			63%			63%			63%			62%

Notes

1) based on Table 1, 10/12/2000, received from URS

2) A wet year is the third of the years analyzed with greatest inflow inf Lake Cachuma, normal years were the middle third of years, and dry years were the third of years with the lowest inflow into Lake Cachuma using USGS Los Laureles gage data.

3) Passage days are defined as number of days when flows at Solvang were 25 cfs or greater, January through April

TABLE 3B
SUMMARY OF PASSAGE DAYS GENERATED
FOR EIR ALTERNATIVES [1)]
JANUARY THROUGH APRIL
In Years in Which Passage Supplementation Releases Would be Made

		Alt 1		Alt 2			Alt 3A			Alt 3B			Alt 3C			Alt 4A&B		
YEAR	Hydrologic Year Type Classification [2)]	# of Passage Days [3)]	Indicator of > 14 days	# of Passage Days [4)]	Addtl Days from Alt 1	Indicator of > 14 days	# of Passage Days	Addtl Days from Alt 1	Indicator of > 14 days	# of Passage Days	Addtl Days from Alt 1	Indicator of > 14 days	# of Passage Days	Addtl Days from Alt 1	Indicator of > 14 days	# of Passage Days	Addtl Days from Alt 1	Indicator of > 14 days
1949	dry	1		1	0		14	13	X	14	13	X	14	13	X	15	14	X
1950	dry	0		0	0		14	14	X	14	14	X	14	14	X	14	14	X
1953	normal	3		5	2		19	16	X	18	15	X	18	15	X	19	16	X
1954	normal	5		9	4		23	18	X	24	19	X	24	19	X	24	19	X
1959	normal	2		4	2		15	13	X	15	13	X	15	13	X	15	13	X
1960	dry	1		1	0		15	14	X	15	14	X	15	14	X	15	14	X
1968	dry	1		1	0		15	14	X	15	14	X	15	14	X	15	14	X
1970	normal	10		9	-1		17	7	X	17	7	X	17	7	X	17	7	X
1975	normal	68	X	67	-1	X	74	6	X	74	6	X	74	6	X	74	6	X
1976	dry	1		1	0		16	15	X	16	15	X	16	15	X	16	15	X
1981	normal	10		11	1		22	12	X	22	12	X	22	12	X	22	12	X
1982	normal	6		6	0		19	13	X	19	13	X	19	13	X	19	13	X
1987	dry	0		2	2		15	15	X	15	15	X	15	15	X	15	15	X
1988	dry	0		0	0		15	15	X	15	15	X	15	15	X	15	15	X
AVG 42-93		8		8			21	13		21	0		21	0		21	0	
SUM 42-93			1			1			14			14			14			14
			7%			7%			100%			100%			100%			100%

Notes

1) based on Table 1, 10/12/2000, received from URS

2) A wet year is the third of the years analyzed with greatest inflow inf Lake Cachuma, normal years were the middle third of years, and dry years were the third of years with the lowest inflow into Lake Cachuma using USGS Los Laureles gage data.

3) Passage days are defined as number of days when flows at Solvang were 25 cfs or greater, January through April