Snow Surveys Section

Water Supply Forecasting Application

California Data Exchange Center

Hydrologic Database System

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http://cdec.water.ca.gov

Water Supply Forecasting Analysis Tool

- **Introduction** - The goal of this project is to create a suite of applications which will be used by the Snow Surveys Section / Water Supply Forecasting team to assist in the production of their water supply forecasting products. The new application suite will duplicate, enhance, and eventually replace the existing Excel based applications currently used by the team.

Water Supply Forecasting Analysis Tool

Background

- Series of linked Excel sheets
- Only one forecaster can make changes at any given time.
- Concurrency issues
- New application addresses these issues while still maintaining the strengths and flexibility of the current application.

Water Supply Forecasting Analysis Tool

- **Enhancements**
  - Ability to use arbitrary sets of precipitation averages on the fly when forecasting.
  - Ability to use arbitrary sets of median indices on the fly when forecasting.
  - Efficiency: Multiple people can work with multiple basins concurrently

Water Supply Forecast Tool

Start | Tools | PcpInd | SnoInd | UpPcpInd | UpSnoInd | B120Fcast

Welcome to the Water Supply Forecasting Tool

Notes:

Snow Index - Group average of (% of Apr 1 average of reporting courses)
% of Apr 1 average = (SWC adjusted to 1st of month / Apr 1 average) * 100
SWC adjusted to 1st of month = observed SWC +/- (intervening precipitation at nearby gauge * PAR)
PAR = precip adj ratio for given station/course pair
Feb, Mar SWC does not include median increment used in forecast

Precip Index - Group average of (scaled month precip as % of scaled period average of reporting courses)
%monthly precip is scaled by .5, .6, .7, .8, .9, 1, 1, .8, .6 respectively for Oct-Jun
eg, Oct = .5*Oct precip/Oct-Mar scaled average * 100 for each station
Oct-Mar scaled average = .5*Oct avg + .6*Nov avg + .7*Dec avg + .8*Jan avg + .9*Feb avg + 1.0*Mar avg
Apr, May, Jun expressed as % of scaled Apr-Jun average
where Apr-Jun scaled average = 1.0*Apr avg + .8*May avg + .6*Jun avg

Water Supply Forecast Tool

Start | Tools | PcpInd | SnoInd | UpPcpInd | UpSnoInd | B120Fcast

Averages | Historical Indices

Avgs Query | Display/Edit Avgs

Compute and Save/Resave Sets of Averages

Select a time frame for your averages:

From: 01 OCT 1955 **to** 30 SEP 2005

Compute Averages (This will take a couple of minutes)

Save This Set of Averages As:

From: 01 OCT 1955 **To:** 30 SEP 2005

Choose an existing set below to re-save, or type in a unique new description:

Save Averages (This will take a couple of minutes)

Basi...	Stati...	Station Name	Elevati...	Latitude	Jan Avg	Feb Avg	Mar Avg	Apr Avg	May Avg	Jun Avg	Jul Avg	Aug Avg	Sep Avg	Oct Avg	Nov Avg	Dec Avg	Sum of Scaled Oct-Mar Avgs	Sum of Scaled Apr-Jun Avgs	Yearly Avg	Oct-Mar Avg	Apr-Jun Avg	Oct-Jun Avg	Data Source
9501	3RV	THREE RIVERS PH NO 1	1140	36.467	4.26	3.97	3.51	2.04	0.85	0.23	0.08	0.07	0.43	0.93	2.63	3.36	14.89	2.86	22.37	18.67	3.13	21.8	CDEC
9001	ABR	AUBERRY 2 NW	2090	37.083	4.9	4.56	4.06	2.21	0.97	0.23	0.06	0.05	0.49	1.25	2.81	3.91	17.13	3.12	25.5	21.49	3.41	24.9	CDEC
6701	ADN	ADIN RS	4195	41.194	2.19	1.71	1.67	1.25	1.59	0.98	0.29	0.4	0.67	1.29	1.85	2.05	8.16	3.11	15.95	10.77	3.82	14.59	CDEC
9001	AGL	ANGIOLA	205	36	1.27	1.47	0.98	0.89	0.22	0.06	0.01	0.02	0.31	0.3	0.99	1.06	4.8	1.11	7.59	6.07	1.18	7.24	CDEC
6701	ALT	ALTURAS RS	4400	41.5	1.46	1.22	1.34	1.08	1.34	0.88	0.29	0.42	0.54	0.88	1.53	1.45	5.97	2.68	12.41	7.87	3.29	11.17	CDEC
11001	AQD	L A AQUEDUCT INTAKE	3841	99.999	1.52	1.3	0.7	0.32	0.15	0.08	0.15	0.2	0.14	0.26	0.47	1.08	4.25	0.48	6.36	5.33	0.54	5.87	CDEC
9501	ASM	ASH MOUNTAIN	1708	36.483	4.82	4.52	4.3	2.57	1.08	0.33	0.09	0.1	0.56	1.16	2.89	3.89	17.26	3.63	26.3	21.58	3.98	25.56	CDEC
9501	ATW	ATWELL CAMP	6400	36.464	3.59	3.45	2.84	1.67	1.02	0.36	0.15	0.21	20.52	0.7	2.34	2.7	12.46	2.71	39.56	15.62	3.05	18.67	CDEC
7701	AUB	AUBURN	1292	38.917	6.73	5.82	5.41	2.74	1.29	0.35	0.09	0.13	0.6	2.16	4.69	5.76	23.96	3.98	35.77	30.57	4.38	34.96	CDEC
9401	BAL	BALCH PH (PG&E)	1720	36.909	3.64	4.98	3.05	2.61	1.58	0.13	0.02	0.02	0.08	1.51	2.63	4.52	15.93	3.95	24.75	20.31	4.32	24.63	CDEC
6701	BBR	BIEBER 4NW	4195	41.12	2.64	2.37	2.3	1.44	1.5	1.03	0.29	0.41	0.63	1.76	2.46	2.59	10.71	3.25	19.41	14.11	3.97	18.08	CDEC
10501	BCA	BOCA	5575	39.383	3.91	3.26	2.69	1.25	1.11	0.71	0.53	0.53	0.73	1.58	2.64	3.74	13.75	2.56	22.68	17.82	3.07	20.89	CDEC
7301	BCM	BRUSH CREEK (DWR-2)	3560	39.694	15.96	15.92	7.55	5.82	4.28	0.85	0.02	0.25	0.61	3.68	9.4	19	55.43	9.75	83.34	71.52	10.95	82.47	CDEC
7301	BCR	BRUSH CREEK RS	3520	39.69	13.52	11.55	9.67	5.19	2.75	0.72	0.14	0.3	1.14	4.22	9.01	12.85	47.4	7.83	71.07	60.82	8.67	69.49	CDEC
10801	BDE	BODIE	8370	38.217	1.66	1.6	0.94	1.16	0.37	0.71	0.41	0.39	0.4	0.49	1.16	1.58	5.75	1.88	10.86	7.43	2.24	9.66	CDEC
10801	BDG	BRIDGEPORT R S	6470	38.25	1.52	1.12	0.95	0.45	0.64	0.56	0.45	0.48	0.53	0.57	1.29	1.41	5.22	1.31	9.98	6.86	1.66	8.52	CDEC
901	BGB	BIG BAR	1270	40.733	7.16	5.91	4.83	2.16	1.37	0.49	0.15	0.43	0.72	2.23	5.23	7.33	25.27	3.56	38.03	32.7	4.03	36.73	CDEC
9001	BGC	BIG CREEK 1	4878	37.205	6.43	5.62	5.49	3.3	1.74	0.53	0.23	0.16	0.88	1.79	3.89	5	22.43	5.01	35.06	28.22	5.57	33.8	CDEC
11001	BIS	BISHOP	4140	37.35	1.09	1.14	0.54	0.27	0.25	0.14	0.2	0.13	0.19	0.29	0.63	0.83	3.55	0.55	5.71	4.53	0.66	5.19	CDEC

Water Supply Forecast Tool

Start | Tools | PcpInd | SnoInd | UpPcpInd | UpSnoInd | B120Fcast

Averages | Historical Indices

Avgs Query | Display/Edit Avgs

Display/Edit: Requested By Adam: 01-OCT-1955 to 30-SEP-2005

Change Averages

Trinity River inflow to Lewiston Lake

ID	Name	Dir	Elev [ft]	Sum of Scaled Oct-Mar Avgs	Sum of Scaled Apr-Jun Avgs
CFF	COFFEE CREEK RANGER ST...	...	4400	37.54	5.66
MLD	MCCLOUD	...	3280	32.71	5.96
WVR	WEAVERVILLE RS	...	2050	25.66	3.68
WHI	WHISKEYTOWN DAM (USBR)	...	1210	41.98	11.22
BGB	BIG BAR	...	1270	25.27	3.56
SHA	SHASTA DAM (USBR)	...	1067	43.15	8.38
Basin Average:			2213	34.39	6.41

Sacramento River inflow to Lake Shasta

ID	Name	Dir	Elev [ft]	Sum of Scaled Oct-Mar Avgs	Sum of Scaled Apr-Jun Avgs
MLD	MCCLOUD	...	3280	32.71	5.96
DNM	DUNSMUIR TREATMENT PLA...	...	2170	40.5	6.78
GIB	GIBSON	...	1633		
PR5	PIT #5 PH (PG&E)	...	1458	51.97	9.83
WHI	WHISKEYTOWN DAM (USBR)	...	1210	41.98	11.22
SHA	SHASTA DAM (USBR)	...	1067	43.15	8.38
Basin Average:			1803	42.06	8.43

Water Supply Forecast Tool

Start | Tools | PcpInd | SnoInd | UpPcpInd | UpSnoInd | B120Fcast

Averages | Historical Indices

Historical Indices Query | Historical Median Indices Query | Display/Edit Indices

View Historical Indices

Select a time frame for your indices:

From: 1955 **to** 2005

View Indices

Basin	Water Year	Oct Index	Nov Index	Dec Index	Jan Index	Feb Index	Mar Index	Apr Index	May Index	Jun Index	Oct-Mar Index	Apr-Jun Index
Trinity River inflow to Lewiston Lake	2005	10	3	29	17	11	27	72	115	44	96	231
Trinity River inflow to Lewiston Lake	2004	0	14	30	16	42	8	45	8	4	111	57
Trinity River inflow to Lewiston Lake	2003	0	10	53	16	8	19	174	21	1	107	195
Trinity River inflow to Lewiston Lake	2002	3	25	33	15	14	9	29	21	3	99	53
Trinity River inflow to Lewiston Lake	2001	6	3	6	16	26	12	39	5	25	68	69
Trinity River inflow to Lewiston Lake	2000	3	13	4	32	51	13	80	30	6	117	116
Trinity River inflow to Lewiston Lake	1999	3	25	8	16	37	20	42	6	3	108	51
Trinity River inflow to Lewiston Lake	1998	4	21	9	46	70	34	76	105	16	184	198
Trinity River inflow to Lewiston Lake	1997	4	16	51	30	3	8	53	9	29	113	91
Trinity River inflow to Lewiston Lake	1996	0	1	36	28	34	12	84	75	3	111	162
Trinity River inflow to Lewiston Lake	1995	0	14	12	78	5	64	128	36	30	173	195
Trinity River inflow to Lewiston Lake	1994	3	3	18	16	15	2	49	29	5	56	83
Trinity River inflow to Lewiston Lake	1993	7	4	28	30	20	24	85	89	21	113	195
Trinity River inflow to Lewiston Lake	1992	3	4	10	8	36	20	86	8	37	81	132
Trinity River inflow to Lewiston Lake	1991	2	2	3	4	11	43	33	16	6	64	55
Trinity River inflow to Lewiston Lake	1990	11	2	0	21	11	7	48	169	21	51	238
Trinity River inflow to Lewiston Lake	1989	1	25	11	7	4	43	46	16	10	91	71
Trinity River inflow to Lewiston Lake	1988	1	7	33	22	1	2	86	46	18	66	150
Trinity River inflow to Lewiston Lake	1987	3	2	8	21	18	33	9	21	3	85	32
Trinity River inflow to Lewiston Lake	1986	5	8	11	31	54	28	22	30	2	137	54
Trinity River inflow to Lewiston Lake	1985	5	37	6	2	8	12	6	5	6	70	17
Trinity River inflow to Lewiston Lake	1984	4	29	38	1	14	15	58	26	10	101	94
Trinity River inflow to Lewiston Lake	1983	10	15	30	35	48	73	104	19	3	212	126

Water Supply Forecast Tool

Start | Tools | PcpInd | SnoInd | UpPcpInd | UpSnoInd | B120Fcast

Averages | Historical Indices

Historical Indices Query | Historical Median Indices Query | Display/Edit Indices

View Historical Median Indices

Select a time frame for your indices:

From: 1955 **to** 2005

Compute Medians

Save This Set of Indices As:

From: 1955 **To:** 2005

Choose an existing set below to re-save, or type in a unique new description:

Save Indices

Basin	Oct Median Index	Nov Median Index	Dec Median Index	Jan Median Index	Feb Median Index	Mar Median Index	Apr Median Index	May Median Index	Jun Median Index	Oct-Mar Median Index	Apr-Jun Median Index	Num Years
Trinity River inflow to Lewiston Lake	3	10	16	21	20	18	55	21	6	102	90	51
Sacramento River inflow to Lake Shasta	3	9	16	20	20	19	52	22	6	103	81	51
McCloud River inflow to Lake Shasta	4	9	16	20	19	19	48	23	6	100	84	51
Pit River inflow to Lake Shasta	5	12	14	16	18	18	48	33	11	98	92	51
Total inflow to Lake Shasta	3	9	16	19	19	19	54	21	5	102	83	51
Sacramento River at Bend Bridge	4	10	15	19	20	18	52	24	6	103	86	51
Feather River inflow to Lake Oroville	3	8	14	18	18	17	48	25	6	100	78	51
Yuba River at Smartville	4	9	16	20	19	17	50	22	6	101	88	51
American River inflow to Folsom	3	9	15	21	19	21	49	19	6	103	88	51
Cosumnes River at Michigan Bar	3	9	15	20	18	21	48	19	4	101	89	51
Mokelumne River inflow to Pardee Reservoir	3	8	13	19	18	20	50	19	4	96	92	51
Stanislaus River inflow to New Melones Reservoir	3	9	13	19	19	20	52	21	5	98	92	51
Tuolumne River inflow to Don Pedro Reservoir	3	9	13	20	20	19	50	19	4	99	93	51
Merced River inflow to Lake McClure	2	9	13	19	21	19	48	16	3	95	84	51
San Joaquin River inflow to Millerton Lake	2	8	14	21	21	18	49	19	5	91	87	51
Kings River inflow to Pine Flat Reservoir	2	8	13	21	18	19	51	20	5	88	81	51
Kaweah River inflow to Terminous Reservoir	2	7	14	21	18	20	55	18	3	92	81	51
Tule River inflow to Success Reservoir	2	8	13	20	17	22	59	16	2	90	79	51
Kern River inflow to Isabella Reservoir	2	8	13	22	19	20	63	15	2	90	86	51
Truckee River accretions from Tahoe to Farad	3	8	14	20	19	16	47	25	8	97	85	51
Lake Tahoe rise lftl	4	10	15	20	18	16	49	21	7	100	94	51

Water Supply Forecast Tool

Start | Tools | PcpInd | SnoInd | UpPcpInd | UpSnoInd | B120Fcast

Averages | Historical Indices

Historical Indices Query | Historical Median Indices Query | Display/Edit Indices

Display/Edit: Original Set: 1951-2000 w/ Revisions: 1955 to 2000 | View/Edit Historical Indices

Basin	Oct Median Index	Nov Median Index	Dec Median Index	Jan Median Index	Feb Median Index	Mar Median Index	Apr Median Index	May Median Index	Jun Median Index	Oct-Mar Median Index	Apr-Jun Median Index
Trinity River inflow to Lewiston Lake				22	25	18	57	27	7		
Sacramento River inflow to Lake Shasta				22	25	18	50	28	6		
McCloud River inflow to Lake Shasta				23	25	18	49	29	7		
Pit River inflow to Lake Shasta				21	25	18	47	34	11		
Total inflow to Lake Shasta				22	24	19	49	29	6		
Sacramento River at Bend Bridge				24	23	19	51	30	7		
Feather River inflow to Lake Oroville				26	22	18	54	26	7		
Yuba River at Smartville				25	22	19	55	24	7		
American River inflow to Folsom				24	22	21	58	23	6		
Cosumnes River at Michigan Bar				22	25	21	61	20	5		
Mokelumne River inflow to Pardee Reservoir				20	25	21	63	20	5		
Stanislaus River inflow to New Melones Reservoir				22	24	21	64	20	6		
Tuolumne River inflow to Don Pedro Reservoir				21	25	21	64	21	5		
Merced River inflow to Lake McClure				21	24	20	61	21	4		
San Joaquin River inflow to Millerton Lake				20	24	20	57	21	6		
Kings River inflow to Pine Flat Reservoir				20	23	20	54	20	6		
Kaweah River inflow to Terminous Reservoir				22	23	21	58	18	3		
Tule River inflow to Success Reservoir				21	22	22	59	17	3		
Kern River inflow to Isabella Reservoir				22	22	21	60	17	3		
Truckee River accretions from Tahoe to Farad				24	22	18	50	25	9		
Lake Tahoe rise [ft]				22	23	18	58	27	9		
West Carson River at Woodfords				22	25	18	54	25	9		
East Carson River near Gardnerville				22	26	19	57	24	8		
West Walker River near Coleville				22	27	18	52	26	9		
East Walker River near Bridgeport				23	27	18	53	28	10		

Microsoft Excel - PcpInd.xls

File Edit View Insert Format Tools Data Window Help Adobe PDF

A1 Monthly Precipitation query linked to CDEC database

Monthly Precipitation query linked to CDEC database

Refresh query

change alternate station handling once YYY,YOW,BPT added

check automatic gauge cumulative hourly trace (stations in red)

To refresh: select table, data menu/refresh data. To edit query year: select table, data menu/pivot table/back/get external data, then edit criteria.

blue = manual entry, red = estimate w/ corrected daily record, *italic* = estimate based on part month

Oracle Query:

			124	118	117	118	112	119	117	99	0	= count
Sum of			AC									
BAS	ELE	STA	10/07	11/07	12/07	1/08	2/08	3/08	4/08	5/08	6/08	Grand Total
901	4400	CFF	5.20	3.20	9.70							18.10
	2050	WVR	4.00			10.90	2.00		.71	1.31		18.92
	1270	BGB	4.54	1.22	5.65	10.69	5.04	1.49	.78	1.03		30.44
	333	HOO	7.80	6.00	7.20	13.07						34.07
6501	3590	MSC	3.59	.63	7.93	10.72	3.93	.51	.53			27.84
	2170	DNM	5.91	.97	11.31	16.28	6.11	.87	.85	1.34		43.64
	1650	GBS										
	1633	GIB	4.92	6.29	12.68	17.64	10.92	.32	.68	1.64		55.09
	1220	WHK						.26				.26
	1210	WHI	4.26	.31	10.21	11.74	9.90	.26	.47	1.05		38.20
	1075	SHO										
	1067	SHA	4.16	.60	10.24	16.69	10.52	.28	.76	1.13		44.38
6601	3280	MLD	4.62	.89	9.10	12.77	6.67	.52	.78	1.47		36.82
6701	5850	MZL						4.04				4.04
	5300	JSV	2.34	1.19	2.36	2.73	.93	1.75	1.71	3.39		16.40
	4400	ALT										
	4195	ADN	1.43	.98	1.85	2.36	.89	.57	.42	1.55		10.05
	3015	HTC	1.38	.17	1.65	2.77	1.31	.56	.44	.45		8.73
	2880	PR1	1.48	.25	1.69	2.65	1.35	.37	.37	.68		8.84
	1458	PR5	8.86	0	9.07	19.79	7.37	1.75	1.52	.66		49.02
7001	4875	MNR	3.43	1.67	4.93	14.12	6.81	2.66	.81	.85		35.28
	185	CES	1.53	.52	4.21	6.17		.02	.24			12.69
7301	5165	PLE	4.90	2.50	4.80	10.80	3.90	3.50				30.40
	4975	SRR	1.63	.39	2.35	4.87	2.15	.41	.06	.78		12.64
	4944	VNT	2.26	.59	1.75	3.47	1.41	.69	.07	1.05		11.29
	4850	PRT	1.39	.56	1.71	5.91	3.39	.24	.16	.95		14.31
	4560	CNY	3.28	.96	3.87	10.03	4.75	1.11	.60	1.00		25.60
	4525	CHS	2.92	.65	4.09	10.26	4.71	1.10	.51	1.54		25.78
	3808	STV	5.73	1.90	11.89	19.17	12.08	2.69	.87	.94		55.27
	3570	GNV	1.92	.72	3.96	11.05	5.12	1.07	.71	.95		25.50
	3560	BCM	4.92	1.85	11.78	17.09	8.92	1.60	1.54	.79		48.49
	3520	BCR	4.33	1.57	11.67	13.41	12.11	1.49	1.46	.84		46.88
	3420	QNC	2.36	.88	3.33	10.19	5.68	1.58	.51	.98		25.51
	2986	CBO	3.26	.81	4.00	7.56	4.06	.82	.42	.38		21.31
	1760	BUP	4.06	1.48	8.56	17.46	7.66	2.29	.89	.69		43.09
	43	NIC	1.55	.73	3.46	6.89	2.05	.22	.05			14.95
7401	6885	SSG	4.76	1.73	8.50	15.90	7.91	3.23	.91	1.85		44.79
	5390	BOL	5.47	1.84	7.62	14.27	3.01	0	0	0		32.21
	5385	BOW	7.20	2.29	10.15	15.43	9.22	3.20	1.01	2.34		50.84
	5156	LSP	4.76	2.02	9.81	17.65	12.16	5.71	1.60	1.89		55.60
	4455	DRC	5.10	2.07	12.47	14.08	9.36	2.43	.84	1.16		47.51
	3200	CHL	4.27	1.60		8.80	5.96	1.24	.76			22.63
	2915	DWV	3.95	1.56	8.12	17.37	7.74	2.54	.67	1.51		43.46
	2781	NVD	4.26	1.78	11.52	12.28	8.83	2.48	.50			41.65
	2755	CAM	3.80	1.76	8.52	9.32		1.72	.60	.56		26.28

Forecast Stations Query Precipitation:

	1	2	3	4	5	6	7	8	9	10	
ID	10/07	11/07	12/07	1/08	2/08	3/08	4/08	5/08	6/08		alt
CFF	5.20	3.20	9.70								
WVR	4.00			10.90	2.00		.71	1.31			
BGB	4.54	1.22	5.65	10.69	5.04	1.49	.78	1.03			
JSV	2.34	1.19	2.36	2.73	.93	1.75	1.71	3.39			
MNR	3.43	1.67	4.93	14.12	6.81	2.66	.81	.85			min
MSC	3.59	.63	7.93	10.72	3.93	.51	.53				mts
DNM	5.91	.97	11.31	16.28	6.11	.87	.85	1.34			
GIB	4.92	6.29	12.68	17.64	10.92	.32	.68	1.64			
WHI	4.26	.31	10.21	11.74	9.90	.26	.47	1.05			whk
SHA	4.16	.60	10.24	16.69	10.52	.28	.76	1.13			sho
MLD	4.62	.89	9.10	12.77	6.67	.52	.78	1.47			mcl
ADN	1.43	.98	1.85	2.36	.89	.57	.42	1.55			
HTC	1.38	.17	1.65	2.77	1.31	.56	.44	.45			*hat*
PR1	1.48	.25	1.69	2.65	1.35	.37	.37	.68			*prf*
PR5	8.86	0	9.07	19.79	7.37	1.75	1.52	.66			*prf5*
PLE	4.90	2.50	4.80	10.80	3.90	3.50					
SRR	1.63	.39	2.35	4.87	2.15	.41	.06	.78			svl
PRT	1.39	.56	1.71	5.91	3.39	.24	.16	.95			
CNY	3.28	.96	3.87	10.03	4.75	1.11	.60	1.00			*pxl*
STV	5.73	1.90	11.89	19.17	12.08	2.69	.87	.94			sby
BCR	4.33	1.57	11.67	13.41	12.11	1.49	1.46	.84			brs
QNC	2.36	.88	3.33	10.19	5.68	1.58	.51	.98			qcy
CBO	3.26	.81	4.00	7.56	4.06	.82	.42	.38			
BUP	4.06	1.48	8.56	17.46	7.66	2.29	.89	.69			*bkp*
BOW	7.20	2.29	10.15	15.43	9.22	3.20	1.01	2.34			
LSP	4.76	2.02	9.81	17.65	12.16	5.71	1.60	1.89			*spn*
DRC	5.10	2.07	12.47	14.08	9.36	2.43	.84	1.16			*dcr*
DWV	3.95	1.56	8.12	17.37	7.74	2.54	.67	1.51			
CMV	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A		cam
CPT	1.56	1.12	4.46	9.52	4.42	1.10	.34	2.62			cap
BYM	5.69	2.03	11.24	15.92	9.25	3.44	.91	1.70			blc
SLP	2.67	1.53	5.60	9.77	7.22	1.51	0	1.76			
PCF	2.41	1.40	5.65	11.40	7.86	2.12	.29	2.05			pfh
GRG	3.05	1.10	9.16	10.51	8.55	1.55	.47	.99			gtw
PCV	2.05	1.10	5.57	8.09	4.80	.64	.33	.81			
SSR	1.88	1.13	5.04	11.48	5.45	1.05	.40	1.96			*sts*
TCP	1.90	1.34	6.50	11.78	5.61	1.24	.18	1.40			*tgr*
FDD	2.11	.97	4.85	9.27	4.64	.78	.17	.73			fdl
EPH	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A		
PCR	.82	.81	4.37	12.08	4.86	.87	.19	2.92			*pnc*
SFB	1.43	.91	4.82	11.62	6.60	.92	.22	2.84			*sgf*
CVT	2.20	1.42	7.30	12.75	8.38	1.33	.77	1.57			
HTH	.95	.64	4.39	9.97	7.10	.70	.16	1.79			
GVL	1.62	.69	4.90	11.61	7.43	.76	.12	.88			
SOR	1.12	.80	6.27	9.31	5.55	.46	.05	.42			

Estimated Precipitation (overrides query)

	1	2	3	4	5	6	7	8	9	10
ID	10/07	11/07	12/07	1/08	2/08	3/08	4/08	5/08	6/08	
CFF										
WVR										
BGB										
JSV										
MNR										
MSC										
DNM										
GIB										
WHI										
SHA										
MLD										
ADN										
HTC										
PR1										
PR5										
PLE										
SRR										
PRT										
CNY					3.35					
STV										
BCR										
QNC										
CBO										
BUP										
BOW										
LSP										
DRC										
DWV										
CMV										
CPT										
BYM										
SLP										
PCF										
GRG										
PCV										
SSR										
TCP										
FDD										
EPH										
PCR					4.86					
SFB										
CVT										
HTH										
GVL										
SOR										

Combined Query & Estimated Precipitation:

	1	2	3	4	5	6	7	8	9
ID	10/07	11/07	12/07	1/08	2/08	3/08	4/08	5/08	6/
CFF	5.20	3.20	9.70						
WVR	4.00			10.90	2.00		.71	1.31	
BGB	4.54	1.22	5.65	10.69	5.04	1.49	.78	1.03	
JSV	2.34	1.19	2.36	2.73	.93	1.75	1.71	3.39	
MNR	3.43	1.67	4.93	14.12	6.81	2.66	.81	.85	
MSC	3.59	.63	7.93	10.72	3.93	.51	.53		
DNM	5.91	.97	11.31	16.28	6.11	.87	.85	1.34	
GIB	4.92	6.29	12.68	17.64	10.92	.32	.68	1.64	
WHI	4.26	.31	10.21	11.74	9.90	.26	.47	1.05	
SHA	4.16	.60	10.24	16.69	10.52	.28	.76	1.13	
MLD	4.62	.89	9.10	12.77	6.67	.52	.78	1.47	
ADN	1.43	.98	1.85	2.36	.89	.57	.42	1.55	
HTC	1.38	.17	1.65	2.77	1.31	.56	.44	.45	
PR1	1.48	.25	1.69	2.65	1.35	.37	.37	.68	
PR5	8.86	0	9.07	19.79	7.37	1.75	1.52	.66	
PLE	4.90	2.50	4.80	10.80	3.90	3.50			
SRR	1.63	.39	2.35	4.87	2.15	.41	.06	.78	
PRT	1.39	.56	1.71	5.91	3.39	.24	.16	.95	
CNY	3.28	.96	3.87	10.03	3.35	1.11	.60	1.00	
STV	5.73	1.90	11.89	19.17	12.08	2.69	.87	.94	
BCR	4.33	1.57	11.67	13.41	12.11	1.49	1.46	.84	
QNC	2.36	.88	3.33	10.19	5.68	1.58	.51	.98	
CBO	3.26	.81	4.00	7.56	4.06	.82	.42	.38	
BUP	4.06	1.48	8.56	17.46	7.66	2.29	.89	.69	
BOW	7.20	2.29	10.15	15.43	9.22	3.20	1.01	2.34	
LSP	4.76	2.02	9.81	17.65	12.16	5.71	1.60	1.89	
DRC	5.10	2.07	12.47	14.08	9.36	2.43	.84	1.16	
DWV	3.95	1.56	8.12	17.37	7.74	2.54	.67	1.51	
CMV									
CPT	1.56	1.12	4.46	9.52	4.42	1.10	.34	2.62	
BYM	5.69	2.03	11.24	15.92	9.25	3.44	.91	1.70	
SLP	2.67	1.53	5.60	9.77	7.22	1.51	0	1.76	
PCF	2.41	1.40	5.65	11.40	7.86	2.12	.29	2.05	
GRG	3.05	1.10	9.16	10.51	8.55	1.55	.47	.99	
PCV	2.05	1.10	5.57	8.09	4.80	.64	.33	.81	
SSR	1.88	1.13	5.04	11.48	5.45	1.05	.40	1.96	
TCP	1.90	1.34	6.50	11.78	5.61	1.24	.18	1.40	
FDD	2.11	.97	4.85	9.27	4.64	.78	.17	.73	
EPH									
PCR	.82	.81	4.37	12.08	4.86	.87	.19	2.92	
SFB	1.43	.91	4.82	11.62	6.60	.92	.22	2.84	
CVT	2.20	1.42	7.30	12.75	8.38	1.33	.77	1.57	
HTH	.95	.64	4.39	9.97	7.10	.70	.16	1.79	
GVL	1.62	.69	4.90	11.61	7.43	.76	.12	.88	
SOR	1.12	.80	6.27	9.31	5.55	.46	.05	.42	

query / index / sum / rhz / miscplots

Ready NUM

Water Supply Forecast Tool

Start | Tools | PcpInd | SnoInd | UpPcpInd | UpSnoInd | B120Fcast

Precipitation Index Computation

Query | Index

Select A Water Year: 2008

Monthly Precipitation Data From CDEC Database: 2008

Update Precip Data

BASIN	ELE...	STA...	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
901	1270	BGB	4.54	1.22	5.65	10.69	5.04	1.49	0.78	1.03	0.6
901	4400	CFF	5.2	3.2	9.7						
901	2050	WVR	4			10.9	2		0.71	1.31	0.04
901	333	HOO	7.8	6	7.2	18.5	2.6				
6501	2170	DNM	5.91	0.97	11.31	16.28	6.11	0.87	0.85	1.34	0
6501	1067	SHA	4.16	0.6	10.24	16.69	10.52	0.28	0.76	1.13	0.08
6501	1075	SHO									
6501	1650	GBS									
6501	3590	MSC	3.59	0.63	7.93	10.72	3.93	0.51	0.53	1.27	0.02
6501	1633	GIB	4.92	6.29	12.68	17.64	10.92	0.32	0.68	1.64	0
6501	1210	WHI	4.26	0.31	10.21	11.74	9.9	0.26	0.47	1.05	0.1
6501	1220	WHK						0.26			
6601	3280	MLD	4.62	0.89	9.1	12.77	6.67	0.52	0.78	1.47	0.04
6701	4195	ADN	1.43	0.98	1.85	2.36	0.89	0.57	0.42	1.55	0.17
6701	4400	ALT									
6701	5850	MZL	4.01	2.28	4.16	8.5	3.41	4.04		0.8	0
6701	2880	PR1	1.48	0.25	1.69	2.65	1.35	0.37	0.37	0.68	0.02
6701	1458	PR5	8.86	0	9.07	19.79	7.37	1.75	1.52	0.79	0.12
6701	5300	JSV	2.34	1.19	2.36	2.73	0.93	1.75	1.71	3.39	0.81
6701	3015	HTC	1.38	0.17	1.65	2.77	1.31	0.56	0.44	0.45	0.03
7001	185	CES	1.53	0.52	4.21			0.02	0.24	0.05	0
7001	4875	MNR	3.43	1.67	4.93	14.12	6.81	2.66	0.81	0.85	0
7301	3560	BCM	4.92	1.85	11.78	17.09	8.92	1.6	1.54	0.79	0
7301	2986	CBO	3.26	0.81	4	7.56	4.06	0.82	0.42	0.38	0.03

Forecast Stations Precipitation

Trinity River inflow to Lewiston Lake

STA...	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
CFF	5.2	3.2	9.7						
MLD	4.62	0.89	9.1	12.77	6.67	0.52	0.78	1.47	0.04
WVR	4			10.9	2		0.71	1.31	0.04
WHI	4.26	0.31	10.21	11.74	9.9	0.26	0.47	1.05	0.1
BGB	4.54	1.22	5.65	10.69	5.04	1.49	0.78	1.03	0.6
SHA	4.16	0.6	10.24	16.69	10.52	0.28	0.76	1.13	0.08

Sacramento River inflow to Lake Shasta

STA...	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
MLD	4.62	0.89	9.1	12.77	6.67	0.52	0.78	1.47	0.04
DNM	5.91	0.97	11.31	16.28	6.11	0.87	0.85	1.34	0
GIB	4.92	6.29	12.68	17.64	10.92	0.32	0.68	1.64	0
PR5	8.86	0	9.07	19.79	7.37	1.75	1.52	0.79	0.12
WHI	4.26	0.31	10.21	11.74	9.9	0.26	0.47	1.05	0.1
SHA	4.16	0.6	10.24	16.69	10.52	0.28	0.76	1.13	0.08

McCloud River inflow to Lake Shasta

STA...	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
MLD	4.62	0.89	9.1	12.77	6.67	0.52	0.78	1.47	0.04
HTC	1.38	0.17	1.65	2.77	1.31	0.56	0.44	0.45	0.03
DNM	5.91	0.97	11.31	16.28	6.11	0.87	0.85	1.34	0
GIB	4.92	6.29	12.68	17.64	10.92	0.32	0.68	1.64	0
PR5	8.86	0	9.07	19.79	7.37	1.75	1.52	0.79	0.12
WHI	4.26	0.31	10.21	11.74	9.9	0.26	0.47	1.05	0.1

Estimated Precipitation (overides query)

Trinity River inflow to Lewiston Lake

ALT...	STA...	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
	CFF									
MCL	MLD		5							
	WVR									
WHK	WHI									
	BGB									
SHO	SHA									

Sacramento River inflow to Lake Shasta

ALT...	STA...	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
MCL	MLD		5							
	DNM									
	GIB									
PT5	PR5									
WHK	WHI									
SHO	SHA									

McCloud River inflow to Lake Shasta

ALT...	STA...	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
MCL	MLD		5							
HAT	HTC									
	DNM									
	GIB									
PT5	PR5									
WHK	WHI									

Combined Query and Estimated Precipitation

Trinity River inflow to Lewiston Lake

STA...	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
CFF	5.2	3.2	9.7						
MLD	4.62	5	9.1	12.77	6.67	0.52	0.78	1.47	0.04
WVR	4			10.9	2		0.71	1.31	0.04
WHI	4.26	0.31	10.21	11.74	9.9	0.26	0.47	1.05	0.1
BGB	4.54	1.22	5.65	10.69	5.04	1.49	0.78	1.03	0.6
SHA	4.16	0.6	10.24	16.69	10.52	0.28	0.76	1.13	0.08

Sacramento River inflow to Lake Shasta

STA...	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
MLD	4.62	5	9.1	12.77	6.67	0.52	0.78	1.47	0.04
DNM	5.91	0.97	11.31	16.28	6.11	0.87	0.85	1.34	0
GIB	4.92	6.29	12.68	17.64	10.92	0.32	0.68	1.64	0
PR5	8.86	0	9.07	19.79	7.37	1.75	1.52	0.79	0.12
WHI	4.26	0.31	10.21	11.74	9.9	0.26	0.47	1.05	0.1
SHA	4.16	0.6	10.24	16.69	10.52	0.28	0.76	1.13	0.08

McCloud River inflow to Lake Shasta

STA...	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
MLD	4.62	5	9.1	12.77	6.67	0.52	0.78	1.47	0.04
HTC	1.38	0.17	1.65	2.77	1.31	0.56	0.44	0.45	0.03
DNM	5.91	0.97	11.31	16.28	6.11	0.87	0.85	1.34	0
GIB	4.92	6.29	12.68	17.64	10.92	0.32	0.68	1.64	0
PR5	8.86	0	9.07	19.79	7.37	1.75	1.52	0.79	0.12
WHI	4.26	0.31	10.21	11.74	9.9	0.26	0.47	1.05	0.1

Microsoft Excel - PcpInd.xls

2008 Precipitation Index Computation

Forecast date: 6/1/2008 version 8/20/03

To use:
Refresh/edit query, er
Enter date (only entry
Check across basins

Precipitation in [inches], Index = sum(month precip * scaling factor) / period scaled average

Trinity River inflow to Lewiston Lake

ID	Name	Dir	Elev [ft]	Oct-Mar avg	Oct prec.	Oct index	Nov prec.	Nov index	Dec prec.	Dec index	Oct-Dec index	Jan prec.	Jan index	Feb prec.	Feb index	Mar prec.	Mar index	Apr-Jun avg	Apr prec.	Apr index	May prec.	May index	Jun prec.	Jun index	Oct-Jun obs	WY avg in	Lat deg N	
(6)	Scaling factor:				0.5		0.6		0.7			0.8		0.9		1.0			1.0		0.8		0.6					
CFF	Coffee Creek RS	⇹	4400'	38.63	5.20	6.7	3.20	5.0	9.70	17.6	29.3							5.13							18.1	108.6	41.13	
MLD	McCloud RS	→	3280'	30.87	4.62	7.5	.89	1.7	9.10	20.6	29.8	12.77	33.1	6.67	19.4	.52	1.7	6.08	.78	12.8	1.47	19.3			36.8	99.4	41.25	
WVR	Weaverville RS	↙	2050'	24.91	4.00	8.0						10.90	35.0	2.00	7.2			3.89	.71	18.3	1.31	26.9			18.9	73.7	40.73	
WHI	Whiskeyt'n Dam	↓	1300'	40.38	4.26	5.3	.31	0.5	10.21	17.7	23.4	11.74	23.3	9.90	22.1	.26	0.6	7.10	.47	6.6	1.05	11.8			38.2	#N/A	#N/A	
BGB	Big Bar RS	↙	1270'	25.16	4.54	9.0	1.22	2.9	5.65	15.7	27.7	10.69	34.0	5.04	18.0	1.49	5.9	3.43	.78	22.7	1.03	24.0			30.4	74.0	40.73	
SHA	Shasta Dam	↘	1075'	40.34	4.16	5.2	.60	0.9	10.24	17.8	23.8	16.69	33.1	10.52	23.5	.28	0.7	6.81	.76	11.2	1.13	13.3			44.4	#N/A	#N/A	
Basin average:			2230'	33.38	4.46	6.9	1.24	2.2	8.98	17.9	26.8	12.56	31.7	6.83	18.0	.64	2.2	5.41	.70	14.3	1.20	19.1			36.6	#N/A	#N/A	
Historical median Index:		[month share of period index]											22.0		25.0		18.0			57.0		27.0		7.0			41.10	basin
Monthly Adjustments																												
Oct-Mar Index:									Jan 1		91.8	Feb 1	101.5	Mar 1	94.5	Apr 1	78.8		May 1	78.8	Jun 1	78.8	Jul 1	78.8				
Apr-Jun Index:											91.0		91.0		91.0		91.0			48.3		40.4						
			4500'	basin																								

Sacramento River inflow to Lake Shasta

ID	Name	Dir	Elev [ft]	Oct-Mar avg	Oct prec.	Oct index	Nov prec.	Nov index	Dec prec.	Dec index	Oct-Dec index	Jan prec.	Jan index	Feb prec.	Feb index	Mar prec.	Mar index	Apr-Jun avg	Apr prec.	Apr index	May prec.	May index	Jun prec.	Jun index	Oct-Jun obs	WY avg in	Lat deg N	
(6)	Scaling factor:				0.5		0.6		0.7			0.8		0.9		1.0			1.0		0.8		0.6					
MLD	McCloud RS	→	3280'	30.87	4.62	7.5	.89	1.7	9.10	20.6	29.8	12.77	33.1	6.67	19.4	.52	1.7	6.08	.78	12.8	1.47	19.3			36.8	99.4	41.25	
DNM	Dunsmuir RS	⇹	2170'	36.86	5.91	8.0	.97	1.6	11.31	21.5	31.1	16.28	35.3	6.11	14.9	.87	2.4	6.42	.85	13.2	1.34	16.7			43.6	57.7	41.20	
GIB	Gibson HMS	⇹	1650'	39.72	4.92	6.2	6.29	9.5	12.68	22.3	38.0	17.64	35.5	10.92	24.7	.32	0.8	8.36	.68	8.1	1.64	15.7			55.1	#N/A	#N/A	
PR5	Pit River PH 5	→	1460'	48.05	8.86	9.2	0	0.0	9.07	13.2	22.4	19.79	32.9	7.37	13.8	1.75	3.6	8.28	1.52	18.4	.66	6.4			49.0	74.9	40.98	pt5
WHI	Whiskeyt'n Dam	↓	1300'	40.38	4.26	5.3	.31	0.5	10.21	17.7	23.4	11.74	23.3	9.90	22.1	.26	0.6	7.10	.47	6.6	1.05	11.8			38.2	#N/A	#N/A	
SHA	Shasta Dam	↓	1075'	40.34	4.16	5.2	.60	0.9	10.24	17.8	23.8	16.69	33.1	10.52	23.5	.28	0.7	6.81	.76	11.2	1.13	13.3			44.4	#N/A	#N/A	
Basin average:			1820'	39.37	5.46	6.9	1.51	2.4	10.44	18.9	28.1	15.82	32.2	8.58	19.7	.67	1.6	7.18	.84	11.7	1.22	13.9			44.5	#N/A	#N/A	
Historical median Index:		[month share of period index]											22.0		25.0		18.0			50.0		28.0		6.0			41.20	basin
Oct-Mar Index:									Jan 1		93.1	Feb 1	103.3	Mar 1	98.1	Apr 1	81.7		May 1	81.7	Jun 1	81.7	Jul 1	81.7				
Apr-Jun Index:											84.0		84.0		84.0		84.0			45.7		31.6						
			3900'	basin																								

McCloud River inflow to Lake Shasta

ID	Name	Dir	Elev [ft]	Oct-Mar avg	Oct prec.	Oct index	Nov prec.	Nov index	Dec prec.	Dec index	Oct-Dec index	Jan prec.	Jan index	Feb prec.	Feb index	Mar prec.	Mar index	Apr-Jun avg	Apr prec.	Apr index	May prec.	May index	Jun prec.	Jun index	Oct-Jun obs	WY avg in	Lat deg N	
(7)	Scaling factor:				0.5		0.6		0.7			0.8		0.9		1.0			1.0		0.8		0.6					

query / index / sum / rhz / miscplots

Ready

Water Supply Forecast Tool

Start | Tools | PcpInd | SnoInd | UpPcpInd | UpSnoInd | B120Fcast

Precipitation Index Computation

Query | Index

Select A Water Year: 2008

2008

Choose a set of averages to use in index calculations: Requested By Adam: 01-OCT-1955 to 30-SEP-2005

Choose a set of median indices to use in index calculations: Original Set: 1951-2000 w/ Revisions: 1955 to 2000

Currently Using Average Set: Requested By Adam: 01-OCT-1955 to 30-SEP-2005

Currently Using Median Indice Set: Original Set: 1951-2000 w/ Revisions: 1955 to 2000

Refresh Basin Data

Trinity River inflow to Lewiston Lake

ID	Name	Dir	Elev [ft]	Sum of Scaled Oct-Mar Avgs	Oct prec.	Oct index	Nov prec.	Nov index	Dec prec.	Dec index	Oct-Dec index	Jan prec.	Jan index	Feb prec.	Feb index	Mar prec.	Mar index	Sum of Scaled Apr-Jun Avgs	Apr prec.	Apr index	May prec.	May index	Jun prec.	Jun index	Oct-Jun obs	WY avg	Lat
CFF	COFFEE CREEK RANGER ST...	...	4400	37.54	5.2	6.9	3.2	5.1	9.7	18.1	30.1							5.66									41.133
MLD	MCCLOUD	...	3280	32.71	4.62	7.1	5	9.2	9.1	19.5	35.7	12.77	31.2	6.67	18.4	0.52	1.6	5.96	0.78	13.1	1.47	19.7	0.04	0.4	40.97		41.25
WVR	WEAVERVILLE RS	...	2050	25.66	4	7.8						10.9	34	2	7			3.68	0.71	19.3	1.31	28.5	0.04	0.7			40.733
WHI	WHISKEYTOWN DAM (USBR)	...	1210	41.98	4.26	5.1	0.31	0.4	10.21	17	22.5	11.74	22.4	9.9	21.2	0.26	0.6	11.22	0.47	4.2	1.05	7.5	0.1	0.5	38.3		40.598
BGB	BIG BAR	...	1270	25.27	4.54	9	1.22	2.9	5.65	15.7	27.5	10.69	33.8	5.04	18	1.49	5.9	3.56	0.78	21.9	1.03	23.1	0.6	10.1	31.04		40.733
SHA	SHASTA DAM (USBR)	...	1067	43.15	4.16	4.8	0.6	0.8	10.24	16.6	22.3	16.69	30.9	10.52	21.9	0.28	0.6	8.38	0.76	9.1	1.13	10.8	0.08	0.6	44.46		40.718
Basin Average:			2213	34.39	4.46	6.8	2.07	3.7	8.98	17.4	27.6	12.56	30.5	6.83	17.3	0.64	2.2	6.41	0.7	13.5	1.2	17.9	0.17	2.5			
Historical Median Index [month share of period index]:													22		25		18			57		27		7			
Monthly Adjustments:											2						5										
Oct - Mar Index:											94.6		101.1		93.4		82.6			82.6		82.6		82.6			
Apr - Jun Index:											91		91		91		91			47.5		38.4					

Sacramento River inflow to Lake Shasta

Questions

- ??????