

Parameters to Model

End of April minimum storages by water year type (MAF)

Critically Dry	3.3
Dry	3.9
Below Normal	3.9
Above Normal	4.2
Wet	4.2

Keswick release temps (F)

All Water Years Types	51.5	*This assumes this Keswick release temp would meet a n
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Monthly Keswick release schedules by water year type (cfs)

	Apr	May	Jun	Jul	Aug	Sep	Oct
Critically Dry	4000	7500	7500	7500	7500	7000	5000
Dry	6000	8000	10000	10000	10000	7500	6000
Below Normal	6000	9000	12000	12000	12000	7500	6500
Above Normal	6500	11000	12500	14500	12000	9000	7000
Wet	8000	12000	13500	14500	12000	10000	7000

ot in excess of 53F DAT at CCR/55 7DADM at CCR

Water Year	Beginning of	End of April	WY Type	Keswick				
				Oct	Nov	Dec	Jan	Feb
1996	3.14	4.31	W	5,468	5,347	5,333	6,061	29,180
1997	3.10	3.94	W	5,663	5,186	19,660	41,600	12,830
1998	2.31	4.06	W	4,671	4,627	4,318	17,010	40,420
1999	3.44	4.26	W	6,745	10,820	14,430	8,081	20,040
2000	3.33	4.15	AN	6,298	6,415	6,954	7,756	28,380
2001	2.99	4.02	D	6,043	5,869	5,231	4,342	3,543
2002	2.20	4.30	D	6,048	4,589	3,897	7,017	4,221
2003	2.56	4.54	AN	7,137	6,003	6,180	14,420	9,959
2004	3.16	4.06	BN	6,873	5,759	8,336	7,608	22,160
2005	2.18	4.21	AN	7,249	4,686	4,255	3,987	3,806
2006	3.04	4.06	W	7,749	5,718	7,808	28,300	13,730
2007	3.21	3.90	D	6,160	5,915	5,846	5,320	5,058
2008	1.88	2.95	C	6,488	5,692	4,722	3,882	3,524
2009	1.38	3.00	D	7,102	4,667	3,715	3,266	3,419
2010	1.77	4.39	BN	6,170	4,685	3,294	3,705	3,323
2011	3.32	4.27	W	6,176	6,002	10,900	8,336	4,112
2012	3.34	4.44	BN	7,876	7,265	5,357	4,610	4,173
2013	2.59	3.79	D	6,208	5,540	4,714	4,524	4,077
2014	1.91	2.41	C	6,781	4,477	3,767	3,382	3,550
2015	1.16	2.66	C	5,038	4,688	3,661	3,267	3,464
2016	1.60	4.23	BN	6,361	4,599	4,016	3,337	3,261
Mean				6,400	5,650	6,490	9,040	10,800

Year	Beginning of	End of April	WY Type	Keswick Monthly Mean Discharge (c				
				Apr	May	Jun	Jul	Aug
2008	1.88	2.95	C	6823	9405	11720	12750	10470
2014	1.91	2.41	C	3576	7496	9726	9908	8364
2015	1.16	2.66	C	4361	7578	7337	7304	7210
Avg	1.65	2.68		4920	8160	9594	9987	8681
2001	2.99	4.02	D	6308	9820	13650	14900	11160
2002	2.20	4.30	D	5488	9476	12960	14600	11030
2007	3.21	3.90	D	7799	9869	12340	14720	11600
2009	1.38	3.00	D	6249	8724	10530	12560	10920
2013	2.59	3.79	D	7212	11980	13980	14770	10840
Avg	2.47	3.80		6611	9974	12692	14310	11110
2004	3.16	4.06	BN	8550	9970	14580	15550	11130
2010	1.77	4.39	BN	4693	8942	11970	12540	10340
2012	3.34	4.44	BN	4220	9142	12150	14980	12560
2016	1.60	4.23	BN	5049	6353	8473	10340	10560
Avg	2.47	4.28		5628	8602	11793	13353	11148
2000	3.33	4.15	AN	7841	10930	12790	15070	11580
2003	2.56	4.54	AN	7720	16380	13030	13980	10470

2005	2.18	4.21	AN	4087	14660	12100	14200	10640
Avg	2.69	4.30		6549	13990	12640	14417	10897
1996	3.14	4.31	W	5453	10590	13950	14470	14330
1997	3.10	3.94	W	5816	9122	13330	14870	11140
1998	2.31	4.06	W	11660	14770	15590	14840	14700
1999	3.44	4.26	W	8136	10510	11720	13330	10400
2006	3.04	4.06	W	29270	12600	14250	14580	13300
2011	3.32	4.27	W	12730	8606	12540	12630	11950
Avg	3.06	4.15		12178	11033	13563	14120	12637

Monthly Mean Discharge (cfs)						
Mar	Apr	May	Jun	Jul	Aug	Sep
16,620	5,453	10,590	13,950	14,470	14,330	9,748
5,050	5,816	9,122	13,330	14,870	11,140	8,110
24,630	11,660	14,770	15,590	14,840	14,700	11,110
17,120	8,136	10,510	11,720	13,330	10,400	7,987
22,430	7,841	10,930	12,790	15,070	11,580	7,493
4,680	6,308	9,820	13,650	14,900	11,160	8,588
5,569	5,488	9,476	12,960	14,600	11,030	7,837
4,455	7,720	16,380	13,030	13,980	10,470	7,847
15,670	8,550	9,970	14,580	15,550	11,130	8,748
3,910	4,087	14,660	12,100	14,200	10,640	8,702
25,550	29,270	12,600	14,250	14,580	13,300	9,501
4,969	7,799	9,869	12,340	14,720	11,600	8,602
3,347	6,823	9,405	11,720	12,750	10,470	7,534
3,459	6,249	8,724	10,530	12,560	10,920	7,395
3,287	4,693	8,942	11,970	12,540	10,340	7,542
22,280	12,730	8,606	12,540	12,630	11,950	10,020
3,734	4,220	9,142	12,150	14,980	12,560	7,861
4,460	7,212	11,980	13,980	14,770	10,840	7,409
3,375	3,576	7,496	9,726	9,908	8,364	5,974
3,141	4,361	7,578	7,337	7,304	7,210	7,074
8,206	5,049	6,353	8,473	10,340	10,560	8,893
9,810	7,760	10,300	12,300	13,500	11,200	8,280

fs)	
Sep	Oct
7534	6488
5974	6781
7074	5038
6861	6102
8588	6043
7837	6048
8602	6160
7395	7102
7409	6208
7966	6312
8748	6873
7542	6170
7861	7876
8893	6361
8261	6820
7493	6298
7847	7137

8702	7249
8014	6895
9748	5468
8110	5663
11110	4671
7987	6745
9501	7749
10020	6176
9413	6079

WY	KWK DAT	CCR DAT	CCR 7DADM	BSF DAT	JLF DAT	BND DAT
1996	52.3			55.0	55.9	56.0
1997	51.8			54.5	55.5	56.3
1998	51.6	52.2	53.3	54.0	55.2	55.4
1999	50.5	51.6	53.3	53.4	54.6	55.1
2000	51.8	52.7	54.3	54.3	55.4	55.8
2001	52.0	53.0	54.6	54.4	55.6	56.0
2002	51.5	52.6	54.3	54.1	55.2	55.7
2003	51.6	52.6	54.2	54.2	55.4	55.9
2004	52.5	53.5	55.1	54.8	55.9	56.4
2005	52.3	53.2	54.7	54.8	56.0	56.4
2006	50.9	51.7	53.1	53.3	54.7	55.0
2007	52.5	53.3	55.0	54.8	55.7	56.2
2008	53.8	54.6	56.6	55.9	56.9	57.4
2009	53.0	54.1	55.9	55.6	56.8	57.2
2010	51.2	52.2	54.0	54.0	55.2	55.6
2011	51.0	52.1	53.8	53.8	55.0	55.5
2012	51.3	52.4	54.3	53.9	55.0	55.5
2013	53.0	54.0	55.8	55.4	56.3	56.6
2014	55.7	56.9	58.8	58.0	59.4	59.8
2015	55.2	56.7	58.8	58.1	59.5	60.1
2016	51.9	53.0	55.0	54.8	56.1	56.7
Average	52.3	53.3	55.0	54.8	56.0	56.4
Difference from CCR7DADM	-2.7	-1.7		-0.2	1.0	1.4
Difference from KWK		1.0	2.7	2.5	3.7	4.1