

Summary of Columbia River Basin Flood Risk Management Requirements, 1-Mar

WY 2016

Issue Date: 16-Mar-2016

Project >>	MCDB	ARDB	LIB	DCDB	HGH	GCL	BRN	DWR
Project Limits								
Maximum Elevation, ft	2475.0	1444.0	2459.0	1892.0	3560.0	1290.0	2077.0	1600.0
Minimum Elevation, ft	2320.0	1378.0	2287.0	1794.2	3336.0	1208.0	1976.0	1445.0
Usable Storage, kaf	12053.3	7100.0	4979.5	1398.6	2981.0	5349.6	975.3	2015.7
Usable Storage, ksfd	6076.9	3579.6	2510.5	705.1	1502.9	2697.1	491.7	1016.3

Feb. 28/29 Project Conditions								
Elevation, ft (MSL)	2396.2	1395.8	2410.1	1811.6	3516.9	1264.7	2048.1	1551.2
Draft, kaf	7340.4	5509.0	2033.8	1226.1	931.0	1936.9	361.8	802.7
Usable Stor. less Draft, kaf	4712.9	1591.0	2945.7	172.5	2050.0	3412.7	613.5	1213.1

Draft Required to meet Mar. 31 Flood Risk Management								
Elevation Reduction, ft	-	-	12.3	0.5	-	-	-	-
Storage Reduction, kaf	-	-	419.2	5.4	-	-	-	-

1-Mar Water Supply Forecast									
Project >>	MCDB	ARDB	LIB	DCDB	HGH	GCL	BRN	DWR	TDA
Apr-Jul, kaf	-	-	-	-	-	-	4623	2025	-
Apr-Jul %-Normal (2)	-	-	-	-	-	-	84%	84%	-
Apr-Jul Change, kaf (1)	-	-	-	-	-	-	-66	39	-
Apr-Aug, kaf	11021	21989	6472	1961	-	56411	-	-	86527
Apr-Aug %-Normal (2)	100%	100%	110%	98%	-	99%	-	-	99%
Apr-Aug Change, kaf (1)	-210	-629	155	-17	-	1920	-	-	3306
May-Sep, kaf	-	-	-	-	1573	-	-	-	-
May-Sep %-Normal (2)	-	-	-	-	93%	-	-	-	-
May-Sep Change, kaf (1)	-	-	-	-	42	-	-	-	-

System Draft Requirements									
Project >>	MCDB	ARDB	LIB VarQ	DCDB	HGH VarQ	GCL	BRN	DWR Sys	DWR Loc
Jan. 31, kaf	1648	1703	2083	850	300	0	0	712	727
Feb. 28/29, kaf	2824	2603	2145	1199	281	0	323	692	718
Mar. 15, kaf	-	-	-	1231	-	-	-	-	-
Mar. 31, kaf (4)	4080	3600	2453	1231	337	1200	212	537	537
Apr. 15, kaf (4)	-	-	-	-	351	2324	274	503	359
Apr. 30, kaf	4080	3600	2453	1231	366	3307	351	532	-

System Elevation Requirements									
Jan. 31, ft	-	1430.5	2408.7	1839.8	3547.0	1290.0	2077.0	1557.4	1556.4
Feb. 28/29, ft	-	1422.9	2407.0	1813.8	3547.9	1290.0	2051.6	1558.8	1557.0
Mar. 15, ft	-	-	-	1811.1	-	-	-	-	-
Mar. 31, ft (4)	-	1414.1	2397.8	1811.1	3545.4	1274.7	2061.1	1569.0	1569.0
Apr. 15, ft (4)	-	-	-	-	3544.7	1259.2	2055.9	1571.2	1580.0
Apr. 30, ft	-	1414.1	2397.8	1811.1	3544.1	1244.6	2049.0	1569.4	-

Flood Risk Management Summary at The Dalles, Oregon										
Apr-Aug, kaf	86527									
Apr-Aug %-Normal	98.9%								Upstream Storage Adjustment, kaf, Chart #2 (3) =	21910
Apr-Aug Change, kaf (1)	3306								Initial Controlled Flow, ICF, kcfs, Chart #1 (3) =	320
May-Aug, kaf	72877								Estimated Unregulated Peak Discharge, kcfs, Chart #1-A (3) =	530

- Notes:**
- 1 Change in official forecast from the previous month.
 - 2 All %-Normal values are based on 30-year (1981-2010) Runoff Volume averages as determined by the Northwest River Forecast Center.
 - 3 See Charts 1 and 2 of Columbia River Treaty Flood Control Operating Plan, Corps of Engineers, Northwestern Division, Corps of Engineers.
 - 4 Values include a shift of 29 kaf from DWR to GCL for March 31 and April 15, a 150 kaf shift from BRN to GCL for March 31, and a 75 kaf shift from BRN to GCL for April 15.

Questions? Contact Ron Malmgren, 503-808-3975, or Ron Thomasson, 503-808-3994.

Maximum Flood Risk Storage Shift from DWR to GCL												Maximum Flood Risk Storage Shift from BRN to GCL						
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
GCL	GCL	GCL	DWR	DWR	DWR	DWR / GCL	DWR	DWR	GCL	GCL	GCL	BRN	BRN / GCL	BRN	BRN	GCL	GCL	
Non-Shifted FC Draft	Maximum Draft Limit	Maximum Shift Potential	FC Draft		FC Shift		Shifted FC		Shifted FC		Maximum Shift Potential remaining	FC Shift		Shifted FC Draft		Shifted FC		
			System	Local	Granted	Allowable	Draft	Elevation	Draft (w/DWR Shift)	Elevation (w/DWR Shift)		Granted	Allowable	Draft	Elevation	Draft (w/DWR+BRN Shift)	Elevation (w/DWR+BRN Shift)	
<i>Notes</i>	-	a	2-1	-	-	4-5	Min 3,6	4-7	-	1+7	-	2-10	-	Min 12,13	-	-	10+14	-
<i>Units</i>	kaf	kaf	kaf	kaf	kaf	kaf	kaf	kaf	ft	kaf	ft	kaf	kaf	kaf	kaf	ft	kaf	ft
Jan. 31	0	2798	2798	712	727	0	0	727	1556.4	0	1290.0	2798	0	0	0	2077.0	0	1290.0
Feb. 28/29	0	2798	2798	692	718	0	0	718	1557.0	0	1290.0	2798	0	323	323	2051.6	0	1290.0
Mar. 31	1021	4336	3315	566	537	29	29	537	1569.0	1050	1276.7	3286	150	362	212	2061.1	1200	1274.7
Apr. 15	2220	2733	513	532	359	29	173	503	1571.2	2249	1260.3	484	75	349	274	2055.9	2324	1259.2
Apr. 30 b	3307	3307	0	532	-	0	0	532	1569.4	3307	1244.6	0	0	0	351	2049.0	3307	1244.6

Notes: Under certain conditions the required flood risk draft at DWR and BRN may be shifted to GCL prior to 30-April. The shifted rule curve shown above represents the maximum allowable flood risk storage shift(s) for the current water year based on the current month's flood risk management requirements for each project and evacuation limitations at GCL; however, the actual volume shifted to GCL on any date is ultimately determined by the Bureau of Reclamation. The shift of volume for DWR to GCL has priority over the shift of volume from BRN to GCL in cases when GCL cannot accept the total combined volume.

- a** The potential flood risk storage shift to GCL is limited to the operation at GCL above elevation 1252.3 ft (2744 kaf draft) at the end of February and elevation 1225.0 ft (4355 kaf draft) at end of March and 15-Apr, and also limited by the GCL maximum draft rate limit. All projects are to be at their non-shifted flood risk management draft requirements at the end of Apr.
- b** No shift is allowed, all projects to be back to their non-shifted flood risk draft requirement by 30-April.

Questions? Contact Ron Malmgren, 503-808-3975, or Ron Thomasson, 503-808-3994.

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