

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

WY 2013

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	5185.3	975.3	2015.7
Usable Storage, ksfd	6076.9	3579.6	2510.5	705.1	1502.9	2614.3	491.7	1016.3

Mar. 31 Project Conditions								
Elevation, ft (MSL)	2372.5	1411.2	2394.2	1799.8	3536.4	1282.3	2056.0	1561.2
Draft, kaf	9020.7	3919.3	2566.0	1351.7	532.6	614.6	273.1	656.2
Usable Stor. less Draft, kaf	3032.6	3180.7	2413.5	46.8	2448.4	4570.7	702.3	1359.6

Draft Required to meet Apr. 30 Flood Risk Management								
Elevation Reduction, ft	-	-	-	-	3.9	23.8	-	-
Storage Reduction, kaf	-	-	-	-	81.8	1722.6	-	-

1-Apr Water Supply Forecast									
Project >>	MCDB	ARDB	LIB	DCDB	HGH	GCL	BRN	DWR	TDA
Apr-Jul, kaf	-	-	-	-	-	-	3478	2036	-
Apr-Jul %-Normal 2	-	-	-	-	-	-	63.5%	84.2%	-
Apr-Jul Change , kaf 1	-	-	-	-	-	-	-266	-93	-
Apr-Aug, kaf	11474	22604	6189	2061	-	55882	-	-	81811
Apr-Aug %-Normal 2	104.6%	102.9%	105.2%	102.7%	-	98.4%	-	-	93.5%
Apr-Aug Change , kaf 1	361	537	-126	86	-	1862	-	-	1439
May-Sep, kaf	-	-	-	-	1750	-	-	-	-
May-Sep %-Normal 2	-	-	-	-	103.4%	-	-	-	-
May-Sep Change , kaf 1	-	-	-	-	7	-	-	-	-

System Draft Requirements									
Project >>	MCDB	ARDB	LIB VarQ	DCDB	HGH VarQ	GCL	BRN	DWR Sys	DWR Loc
Jan. 31, kaf	1662	1703	2534	857	424	0	0	947	970
Feb. 28/29, kaf	2810	2603	2238	1215	518	0	284	862	867
Mar. 15, kaf	-	-	-	1245	-	-	-	-	-
Mar. 31, kaf	4080	3600	2186	1245	516	537	168	675	619
Apr. 15, kaf	-	-	-	-	569	1161	107	544	367
Apr. 30, kaf	4080	3600	1972	1270	614	2337	81	544	-

System Elevation Requirements									
Jan. 31, ft	-	1430.5	2395.2	1839.3	3541.4	1290.0	2077.0	1541.0	1539.3
Feb. 28/29, ft	-	1422.9	2404.3	1812.5	3537.1	1290.0	2055.1	1547.0	1546.7
Mar. 15, ft	-	-	-	1809.9	-	-	-	-	-
Mar. 31, ft	-	1414.1	2405.8	1809.9	3537.2	1283.3	2064.7	1559.9	1563.7
Apr. 15, ft	-	-	-	-	3534.7	1275.1	2069.4	1568.5	1579.5
Apr. 30, ft	-	1414.1	2411.8	1807.7	3532.6	1258.5	2071.2	1568.5	-

Flood Risk Management Summary at The Dalles, Oregon			
Apr-Aug, kaf	81811		
Apr-Aug %-Normal	93.5%	Upstream Storage Adjustment, kaf, Chart #2 (3) =	20650
Apr-Aug Change , kaf (1)	1439	Initial Controlled Flow, ICF, kcfs, Chart #1 (3) =	299.4
May-Aug, kaf	68905	Estimated Unregulated Peak Discharge, kcfs, Chart #1-A (3) =	497

- 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.

Questions? Contact Maler Annamalai, 503-808-3994, or Jason Ward, 503-808-3952.

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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	Potential	Allowable	Draft	Elevation	Draft (w/DWR Shift)	Elevation (w/DWR Shift)		Potential	Allowable FC Shift	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	ft	kaf	ft	kaf	ft	kaf	ft
Jan. 31	0	2745	2745	947	970	0	0	970	1539.3	0	1290.0	2745	0	0	0	2077.0	0	1290.0	
Feb. 28/29	0	2745	2745	862	867	0	0	867	1546.7	0	1290.0	2745	0	0	284	2055.1	0	1290.0	
Mar. 31	537	3825	3288	675	619	56	56	619	1563.7	593	1282.6	3232	0	0	168	2064.7	593	1282.6	
Apr. 15	1161	2244	1083	544	367	177	177	367	1579.5	1338	1272.7	906	0	0	107	2069.4	1338	1272.7	
Apr. 30 b	2337	2337	0	544	-	0	0	544	1568.5	2337	1258.5	0	0	0	81	2071.2	2337	1258.5	

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 Maler Annamalai, 503-808-3994, or Jason Ward, 503-808-3952.