

**Assumptions:**

- \* Streamflows were adjusted to the February Final Water Supply Forecast for the period of February thru August of 104 MAF at The Dalles and shaped 59 different ways based on observed historical runoff.
- \* Starting elevations were observed data from January 31, 2004.
- \* Grand Coulee helps meet Vernita Bar minimum flow objective of 70 kcfs in Feb-Mar drafting no lower than 1259.2 ft in Feb and 1261.0 ft in March. Operate to meet McNary flow objective of 247.3 kcfs drafting no lower than 1250.1 ft by Apr 15. Minimum draft elevations are based on a GCL/Dworshak shifted flood control and VECC/AER requirements.
- \* Hungry Horse operates to VARQ flood control or minimum flow from Jan - May and meets minimum flow of 3500 cfs at Columbia Falls, targets full in June, and drafts to 3540 ft by 31 Aug.
- \* Brownlee operates to flood control elevations
- \* Dworshak targets elevation 1533.2 ft in Mar, 1542.2 ft by 15 Apr, and 1523.4 ft by 30 Apr, based on a GCL/DWR shifted flood control operation and maximum releases of 15 kcfs in April and 13 kcfs May-Jun. DWR targets full in June with a minimum flow of 1.5 kcfs, releases a maximum of 13 kcfs in July - August to meet LWG flow objectives, and targets 1520 ft by 31 Aug
- \* Libby operates on minimum flow or VARQ flood control Jan - Apr. Targets 13,900 cfs in May and 10,700 cfs in June for Sturgeon, based on an Apr-Aug forecast of 5.644 MAF and a Tier 3 required pulse of 0.88 MAF. Targets full in July with a minimum flow of 7,000 cfs for bull trout. Drafts to 2439 ft by 31 Aug.

**Results:**

Priest Rapids Meets Flow Objectives of 70 kcfs in Jan - Apr 15 and 135 kcfs in Apr 16 - Jun.

Month	Occurrences out of 59 Years	Average Flow for 59 Years (kcfs)
Feb	24	67
Mar	52	103
Apr 15	47	107
Apr 30	27	130
May	56	163
Jun	57	138

Grand Coulee meets the Apr 15 flood control target elevation of 1249.0 ft in all 59 years. GCL operates to meet Bonneville objective of 125 kcfs in Feb-Mar.

Lower Granite Meets Flow Objectives of 100 kcfs in Apr - May, 84 kcfs in June and 52 kcfs in Jul - Aug:

Month	Occurrences out of 59 Years	Average Flow for 59 Years (kcfs)
Apr 30	18	90
May	44	110
Jun	40	95
Jul	31	49
Aug 15	0	40
Aug 31	0	32

Bonneville Meets Flow Objectives of 125 kcfs in Feb - Apr:

Month	Occurrences out of 59 Years	Average Flow for 59 Years (kcfs)
Feb	59	136
Mar	57	176
Apr 15	57	203
Apr 30	59	245

McNary Meets Flow Objectives of 247.3 kcfs in Apr 15 - Jun and 200 kcfs in Jul - Aug:

Month	Occurrences out of 59 Years	Average Flow for 59 Years (kcfs)
Apr 30	16	221
May	55	273
Jun	46	278
Jul	25	192
Aug 15	2	161
Aug 31	0	145

Projects Refill by 30 June:

Month	Occurrences out of 59 Years	Average Elevation on 30 Jun for 59 Years
Libby	29	2456
Hungry Horse	44	3558
Grand Coulee	48	1288
Dworshak	39	1595

Period Average Flows (kcfs)

	FEB 1-29	MAR 1-31	APR 1-15	APR 16-30	MAY 1-31	JUN 1-30	JUL 1-31	AUG 1-15	AUG 16-31
LIB	4.0	4.0	4.0	4.0	14.2	16.4	24.0	17.2	14.7
HGH	2.0	1.8	1.1	4.2	2.0	8.7	6.7	5.0	4.5
GCL	62.4	96.7	98.7	117.0	136.3	144.8	122.2	107.6	105.2
PRD	67.4	102.7	107.2	129.8	163.3	180.2	138.5	116.5	110.5
DWR	2.0	4.2	6.8	15.0	14.3	5.1	10.7	12.3	10.9
BRN	19.4	18.4	24.1	24.3	18.0	14.6	12.8	16.8	12.7
LWG	38.7	47.0	70.0	89.8	110.2	94.7	48.8	40.5	31.8
MCN	115.7	157.6	186.1	220.8	272.8	277.8	192.3	161.5	145.1
BON	136.5	175.8	202.8	245.3	285.1	291.0	201.4	169.0	151.3