

**Assumptions:**

- \* Streamflows were adjusted to the April Final Water Supply Forecast for the period of April thru August of 73.4 MAF at The Dalles and shaped 59 different ways based on observed historical runoff.
- \* Starting elevations were observed data from March 31, 2004.
- \* **Grand Coulee operates to meet Priest Rapids flow objective of 70 kcfs from April 1-15, 105 kcfs from April 16-30, and 135 kcfs from May 1-31, then tries to refill by June 30. Grand Coulee has an April 30 and May 31 draft limit of 1236 ft and a daily draft limit of between 1.0 and 1.5 ft/day (for bank stabilization) which limits the capability of meeting Priest Rapids flow objectives.**
- \* Hungry Horse operates to VARQ flood control or minimum flow from Apr - May and meets minimum flow of 3500 cfs at Columbia Falls, targets full in June, and drafts to 3540 ft by 31 Aug.
- \* Brownlee targets 2077 ft by 31 May, 2076 ft by 30 June, 2070 ft by 31 July and 2057 ft by 31 August.
- \* Dworshak targets elevation 1566.8 ft by 15 Apr, and 1548.0 ft by 30 Apr, based on a GCL/DWR shifted flood control operation and maximum releases of 12.5 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 Mar - Apr. Targets 13.9 kcfs in May and 9.4 kcfs in June for Sturgeon, based on an Apr-Aug forecast of 5.305 MAF and a Tier 2 required pulse of 0.80 MAF. Provides a minimum flow of 7,000 cfs for bull trout in July and August. Drafts to 2449 ft by 31 July and 2439 ft by 31 Aug.

**Results:**

Priest Rapids Meets Flow Objectives of 70 kcfs in Apr 1 - 15, 105 kcfs Apr 16-30, and 135 kcfs from May 1 - Jun 30.

Month	Occurrences out of 59 Years	Average Flow for 59 Years (kcfs)
Apr 15	58	87
Apr 30	51	105
May	56	141
Jun	31	136

Lower Granite Meets Flow Objectives of 85 kcfs in Apr - May, 73.3 kcfs in June, and 50 kcfs in Jul - Aug:

Month	Occurrences out of 59 Years	Average Flow for 59 Years (kcfs)
Apr 15	0	47
Apr 30	4	61
May	19	77
Jun	31	74
Jul	7	42
Aug 15	0	37
Aug 31	0	23

Bonneville Meets Flow Objectives of 125 kcfs in Apr:

Month	Occurrences out of 59 Years	Average Flow for 59 Years (kcfs)
Apr 15	54	160
Apr 30	59	184

Grand Coulee End of Month Elevations:

	Average	Median
Apr 15	1263.5	1265.2
Apr 30	1260.0	1257.5
May	1268.3	1270.6

McNary Meets Flow Objectives of 220 kcfs

from Apr 15 - Jun 30 and 200 kcfs from Jul 1 - Aug 31:

Month	Occurrences out of 59 Years	Average Flow for 59 Years (kcfs)
Apr 30	1	162
May	11	206
Jun	11	197
Jul	1	154
Aug 15	0	126
Aug 31	0	111

Projects Refill by 30 June:

Month	Occurrences out of 59 Years	Average Elevation on 30 Jun for 59 Years
Libby	15	2453
Hungry Horse	54	3559
Grand Coulee	59	1290
Dworshak	54	1600

Period Average Flows (kcfs)

	APR 1-15	APR 16-30	MAY 1-31	JUN 1-30	JUL 1-31	AUG 1-15	AUG 16-31
LIB	4	4	14	10	19	16	14
HGH	1	1	2	5	6	5	4
GCL	80	94	119	108	106	86	86
PRD	87	105	141	136	119	93	91
DWR	2	9	5	5	14	14	7
BRN	14	12	13	13	9	14	8
LWG	47	61	77	74	42	37	23
MCN	141	162	206	197	154	126	111
TDA	154	177	214	206	159	130	115
BON	160	184	216	208	162	132	116