

Summary of May Early Bird 2005 QADJ Model Runs

3-May-05

**Assumptions:**

- \* Streamflows were adjusted to the May Early Bird Water Supply Forecast for the period of May thru August of 51.2 MAF at The Dalles (65% of average) and shaped 69 different ways based on observed historical runoff.
- \* Starting elevations are actual April 30, 2005 elevations.
- \* Grand Coulee tries to meet 130,000 cfs in May while not drafting below 1240 ft. In June the project refills to 1285 ft in all years, and fills above 1285 ft if Priest Rapids flows are above 125,000 cfs. Summer lake targets are 1285.0 ft in July and 1278 ft in August (per the BiOp).
- \* Hungry Horse operates in May for a controlled refill by 30 June and meets minimum flow of 3250 cfs at Columbia Falls. The project drafts to 3540 ft by 31 Aug.
- \* Brownlee operates to flood control elevations, which is elevation 2077 ft (or full pool) and drafts some in July - August.
- \* Dworshak targets full in June and drafts to 1534 ft by 31 Aug.
- \* Libby targets full in June while maintaining a minimum flow in May of 10,800 cfs and 10,400 cfs out in June for sturgeon, based on a Tier 2 sturgeon pulse. Libby drafts to 2439 ft by 31 Aug, with a minimum bull trout flow of 7,000 cfs.

**Results:**

Priest Rapids Meets the Following Flow Objectives:

Month	Occurrences out of 69 Years	Average Flow for 69 Years (kcfs)	Flow Objective* (kcfs)
May	59	133	130
Jun	50	129	125

*\* Note: Flow objectives listed may be less than what is prescribed in the BiOp but were used for modeling.*

Lower Granite Meets the Following Flow Objectives:

Month	Occurrences out of 69 Years	Average Flow for 69 Years (kcfs)	Flow Objective* (kcfs)
May	0	61	85
Jun	1	54	73
Jul	0	31	50
Aug 15	0	24	50
Aug 31	0	22	50

McNary Meets the Following Flow Objectives:

Month	Occurrences out of 69 Years	Average Flow for 69 Years (kcfs)	Flow Objective* (kcfs)
May	6	191	220
Jun	1	175	220
Jul	0	150	200
Aug 15	0	128	200
Aug 31	0	121	200

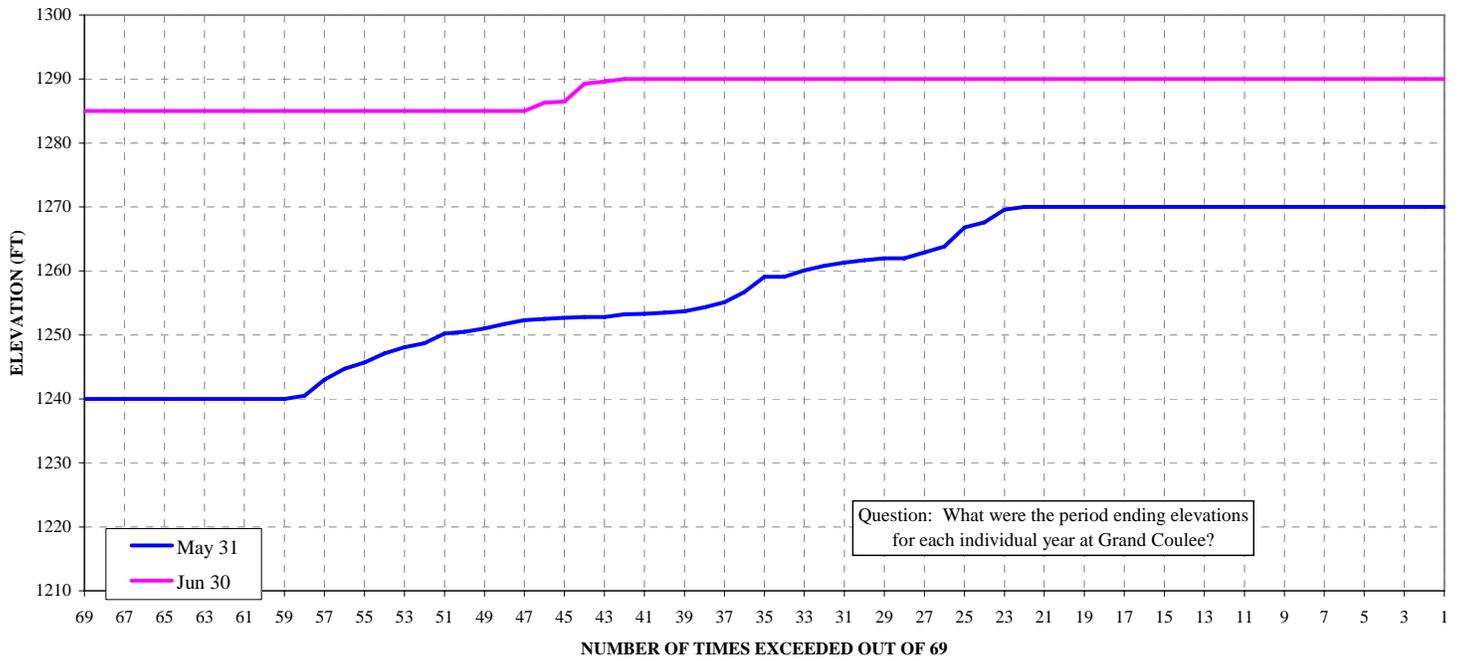
Projects Refill by 30 June:

Month	Occurrences out of 69 Years	Average Elevation on 30 Jun for 69 Years
Libby	68	2459
Hungry Horse	69	3560
Grand Coulee	44	1288
Dworshak	69	1600

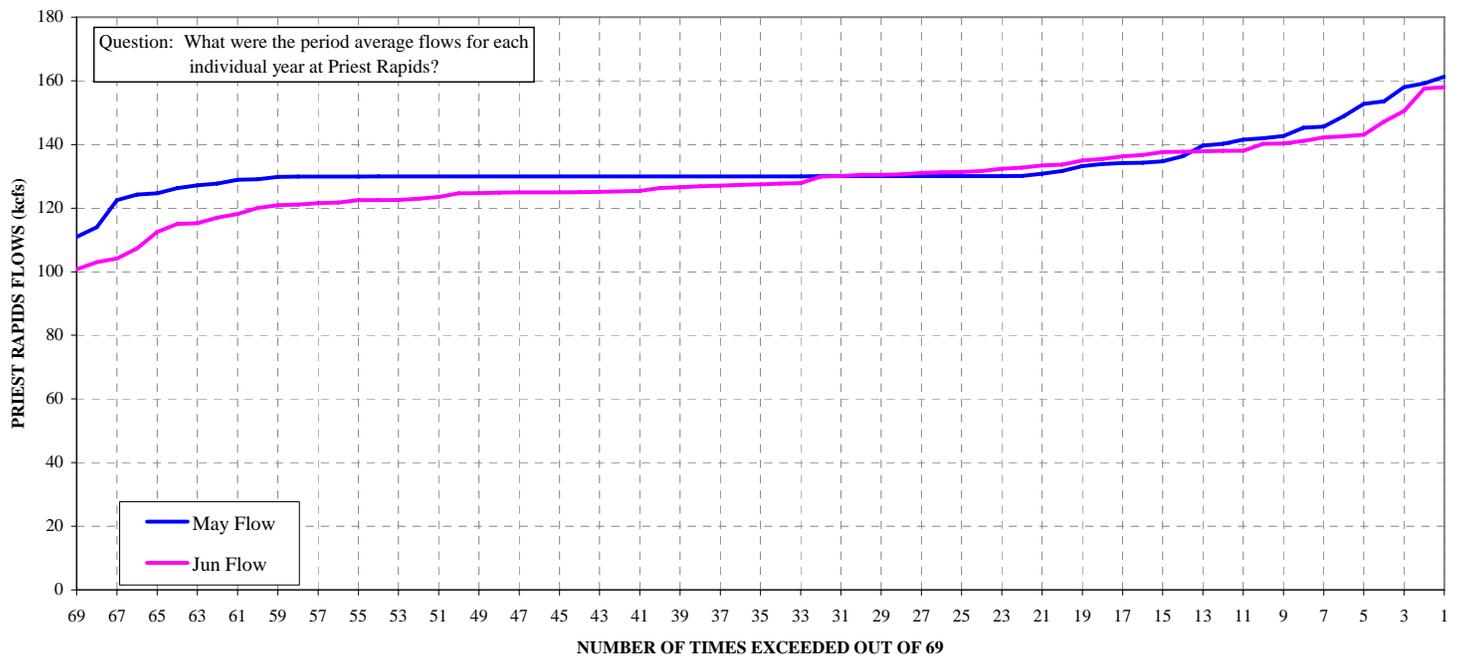
Period Average Outflows (kcfs):

	Obs FEB 1-28	Obs MAR 1-28	Obs APR 1-15	Obs 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	11.2	17.5	21.5	19.6	16.5
HGH	1.0	0.9	2.1	7.2	5.3	5.4	5.8	5.4	4.2
GCL	101	91	76	82	116	108	117	102	98
PRD	111	100	85	95	133	129	126	107	101
DWR	1.6	1.6	3.6	5.4	7.1	5.0	10	10	9
BRN	10	11	13	12	13	11	8	9	9
LWG	21	22	39	45	61	54	31	24	22
MCN	134	123	132	147	191	175	150	128	121
TDA	140	125	136	143	191	168	146	127	121
BON	138	130	143	153	193	169	148	129	122

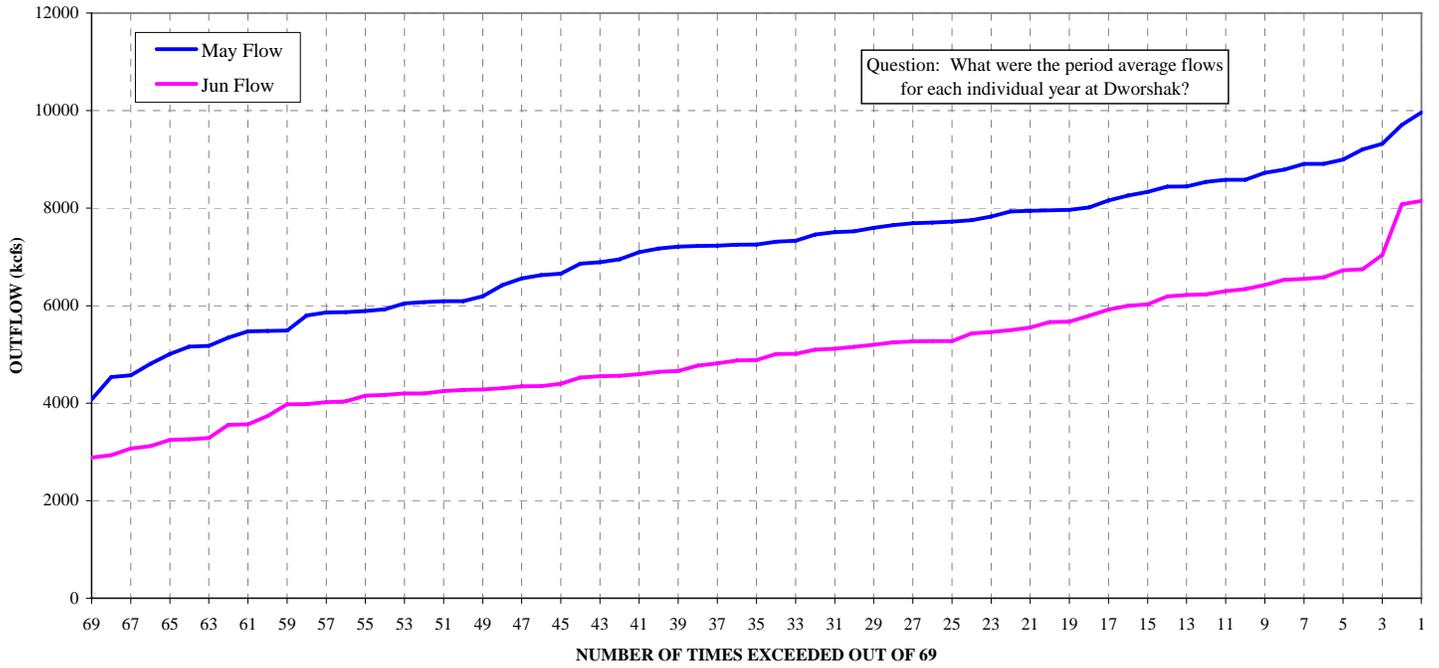
### GRAND COULEE LAKE ROOSEVELT ELEVATIONS



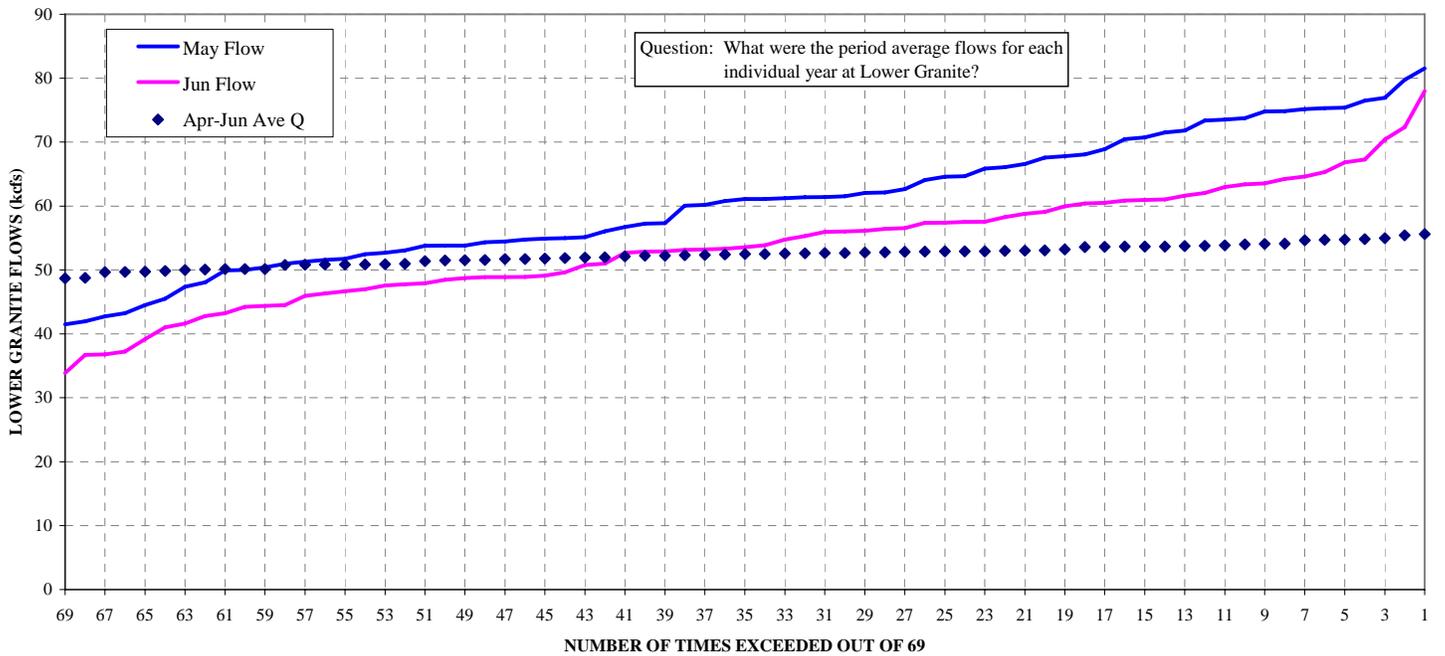
### PRIEST RAPIDS MAY - JUNE FLOWS



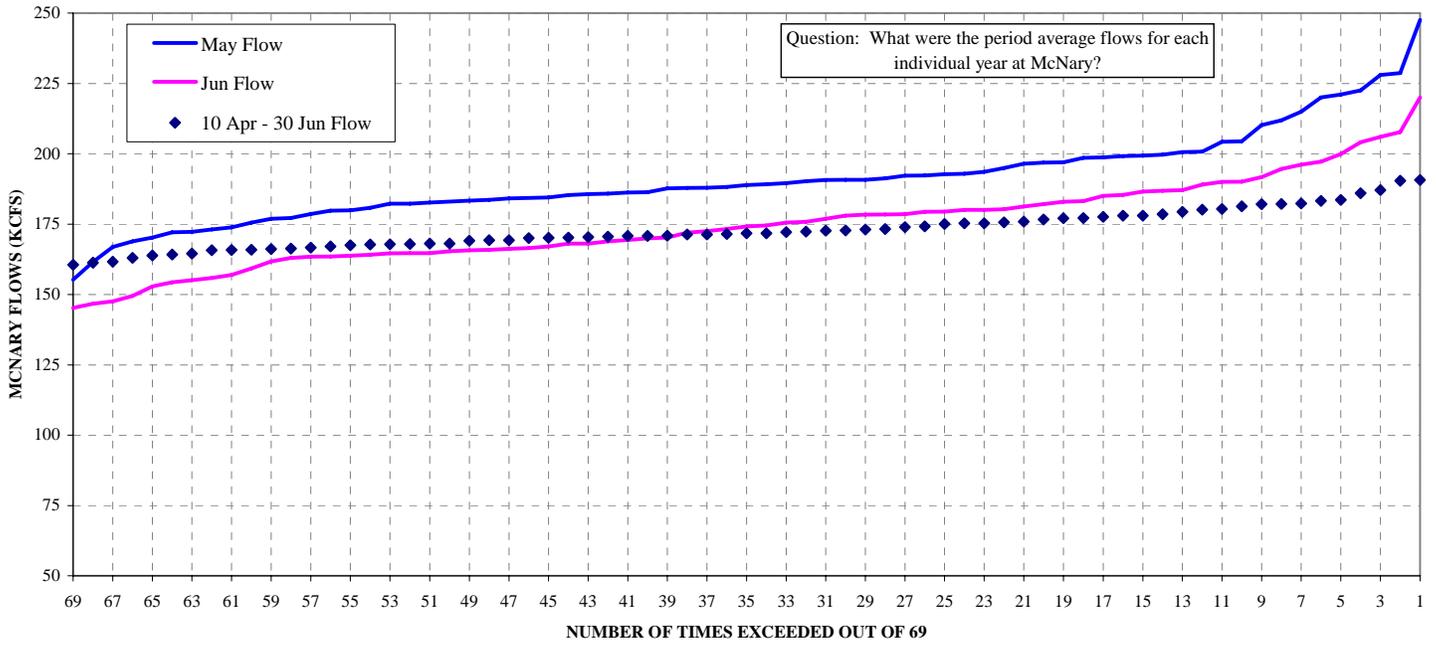
### DWORSHAK OUTFLOWS



### LOWER GRANITE APRIL - JUNE FLOWS



### MCNARY OUTFLOW APRIL - JUNE AVERAGES



### MCNARY OUTFLOW JUL-AUG AVERAGES

