

Summary of 01 May 2006 **ESP HYSSR** Model Runs

3-May-06

Assumptions:

- * Streamflows are from the 25 Apr ESP run, which uses current basin conditions combined with 44 historical weather patterns (temperatures and precipitation) to produce 44 ESP hydrographs for 2006.
- * Flood control is based on the April Final.
- * Grand Coulee operates to flood control May 31. Coulee tries to meet 135,000 cfs at Priest Rapids in June, while drafting no lower than 1287 ft by June 30 to meet the target. Summer lake targets are 1285.0 ft in July and 1280 ft in August.
- * Hungry Horse operates May and June for a controlled refill by 30 June and meets minimum flow of 3,500 cfs at Columbia Falls. The project drafts to 3540 ft by 31 Aug.
- * Brownlee operates for flood control in May and refills in June to 2077 ft, and drafts some in July - August.
- * Dworshak operates for flood control in May targeting full in June and drafting to 1534 ft by 31 Aug.
- * Libby increases in May to meet a 1 MAF sturgeon pulse and targets full in June. Libby drafts to 2439 ft by 31 Aug, while meeting bull trout minimum flows of 8,000 cfs.

Results:

Priest Rapids Meets the Following Flow Objectives:

Month	Occurrences out of 44 Years	Average Flow for 44 Years (kcfs)	Flow Objective (kcfs)
May	44	183	135
Jun	37	163	135

Lower Granite Meets the Following Flow Objectives:

Month	Occurrences out of 44 Years	Average Flow for 44 Years (kcfs)	Flow Objective (kcfs)
May	44	132	100
Jun	44	118	84
Jul	22	55	54
Aug 15	0	35	54
Aug 31	0	36	54

McNary Meets the Following Flow Objectives:

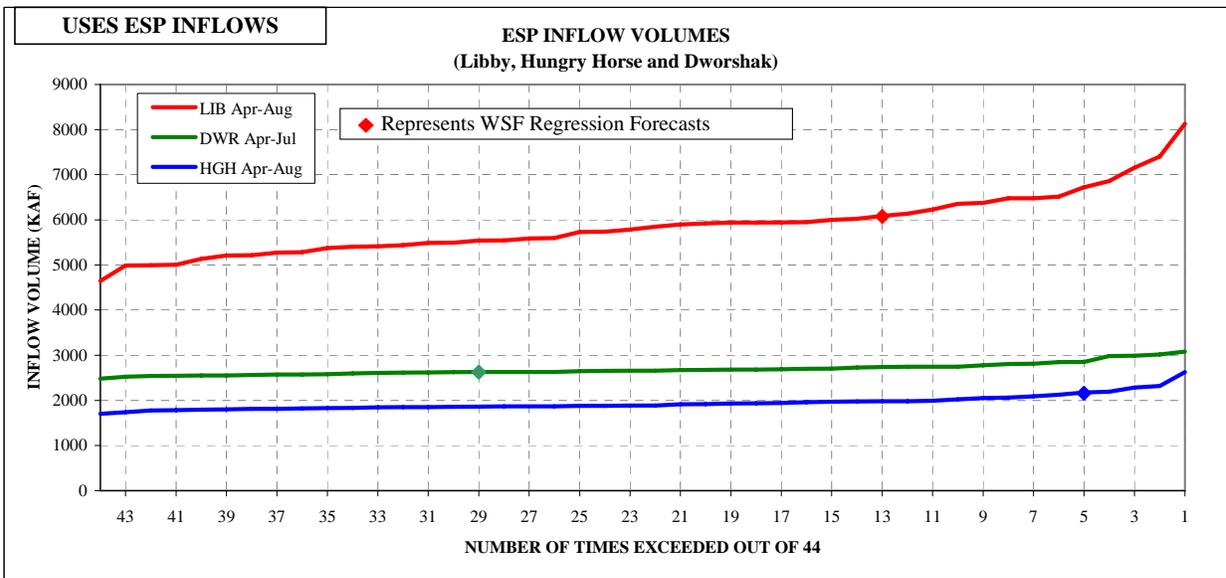
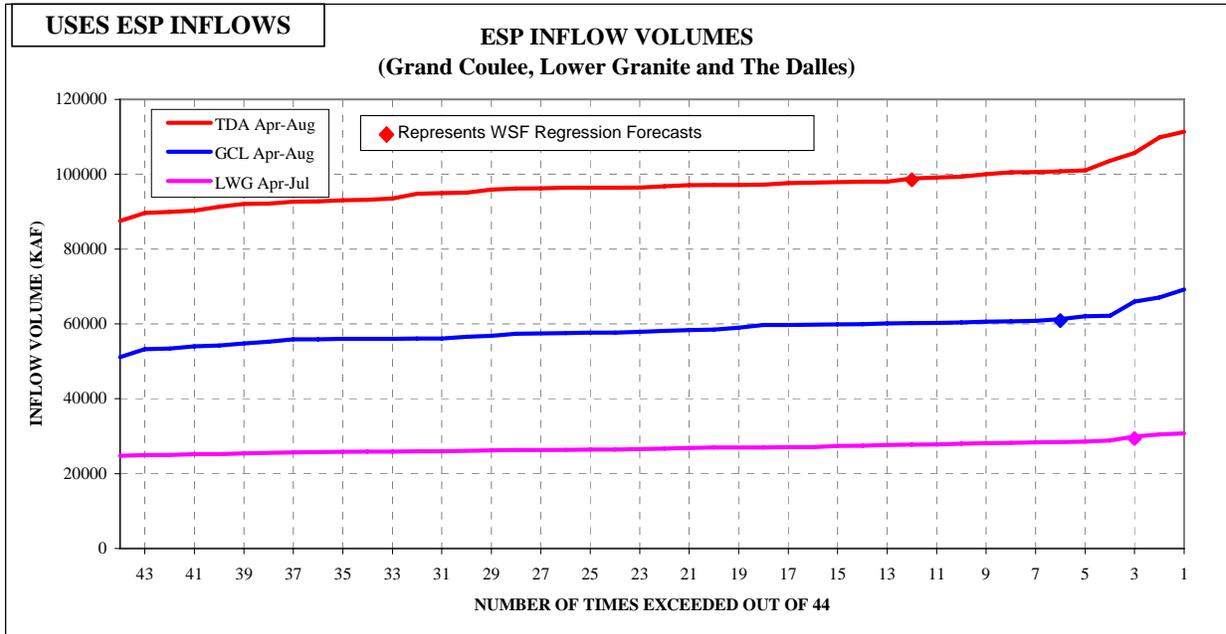
Month	Occurrences out of 44 Years	Average Flow for 44 Years (kcfs)	Flow Objective (kcfs)
May	41	321	260
Jun	36	288	260
Jul	30	215	200
Aug 15	0	137	200
Aug 31	0	132	200

Projects Refill to within 1 foot of full by 30 June:

Month	Occurrences out of 44 Years	Average Elevation on 30 Jun for 44 Years
Libby	28	2456
Hungry Horse	31	3559
Grand Coulee	37	1290
Dworshak	43	1600

Period Average Flows (kcfs):

	OBS FEB 1-28	OBS MAR 1-31	OBS APR 1-30	FCST MAY 1-31	FCST JUN 1-30	FCST JUL 1-31	FCST AUG 1-15	FCST AUG 16-31	FCST SEP 1-30
LIB	4.0	7.6	4.6	12.3	18.3	22.4	16.2	15.0	7.5
HGH	5.4	2.0	9.2	4.7	1.8	6.3	5.8	4.5	1.6
GCL	103	84	141	161	138	143	92	90	70
PRD	112	95	156	183	163	155	98	94	74
DWR	6.7	3.7	12.8	6.4	4.5	10.1	10.1	12.6	4.5
BRN	29	32	64	44	29	15	14	14	14
LWG	45	51	123	132	118	55	35	36	27
MCN	162	149	291	321	288	215	137	132	102
TDA	170	156	292	342	300	219	140	136	106
BON	177	165	308	347	305	222	142	138	108



Volume Comparison Table (ESP versus Regression) - May Earlybird:

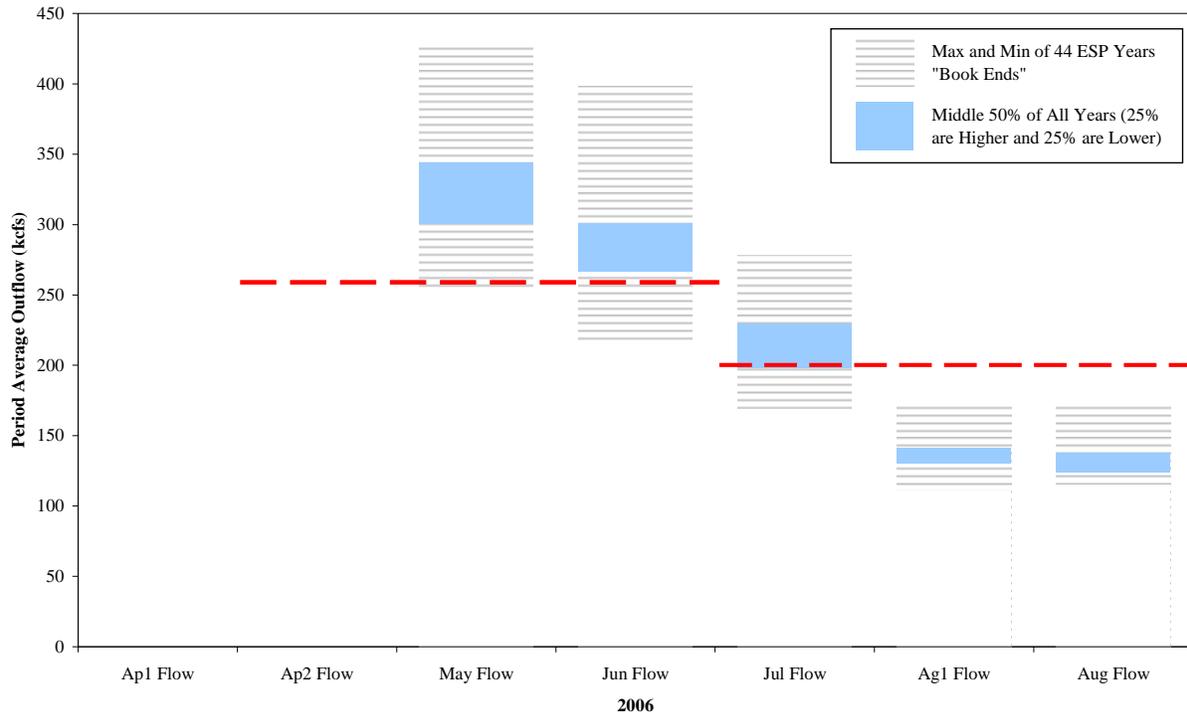
Forecast Period	Official WSF (Regression)			ESP Volumes				
	Volume (kaf)	Percent of Average	30 year Average (kaf)	10% Exceedance Probability	30% Exceedance Probability	50% Exceedance Probability	70% Exceedance Probability	90% Exceedance Probability
Grand Coulee	60900	101%	60290	61800	59900	58000	56100	54400
Lower Granite	29400	136%	21550	28500	27500	26600	26000	25300
The Dalles	98500	106%	93090	101000	98100	96600	94900	91500
Hungry Horse *	2157	104%	2070	2160	1980	1880	1850	1790
Libby **	6076	97%	6248	6500	6010	5780	5470	5150
Dworshak **	2626	99%	2645	2840	2710	2660	2620	2550

* USBR Official Forecast (April Final)

** Corps Official Forecast (April Final for Libby, May Final for Dworshak)

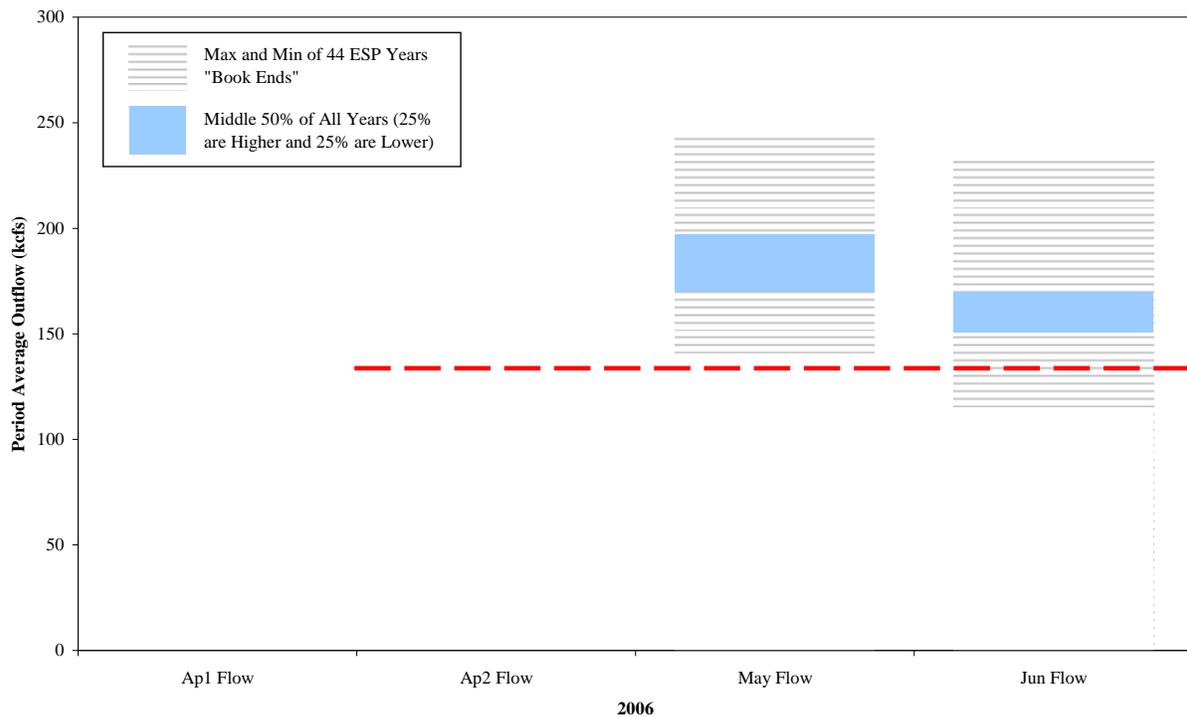
USES ESP INFLOWS

**MCNARY ESP HYSSR RESULTS
MONTHLY OUTFLOW PROJECTIONS**



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**PRIEST RAPIDS ESP HYSSR RESULTS
MONTHLY OUTFLOW PROJECTIONS**



USES ESP INFLOWS

**LOWER GRANITE ESP HYSSR RESULTS
MONTHLY OUTFLOW PROJECTIONS**

