Columbia – Umatilla River Solutions Workshop

NOAA FISHERIES

Northwest Region
Hydropower Division

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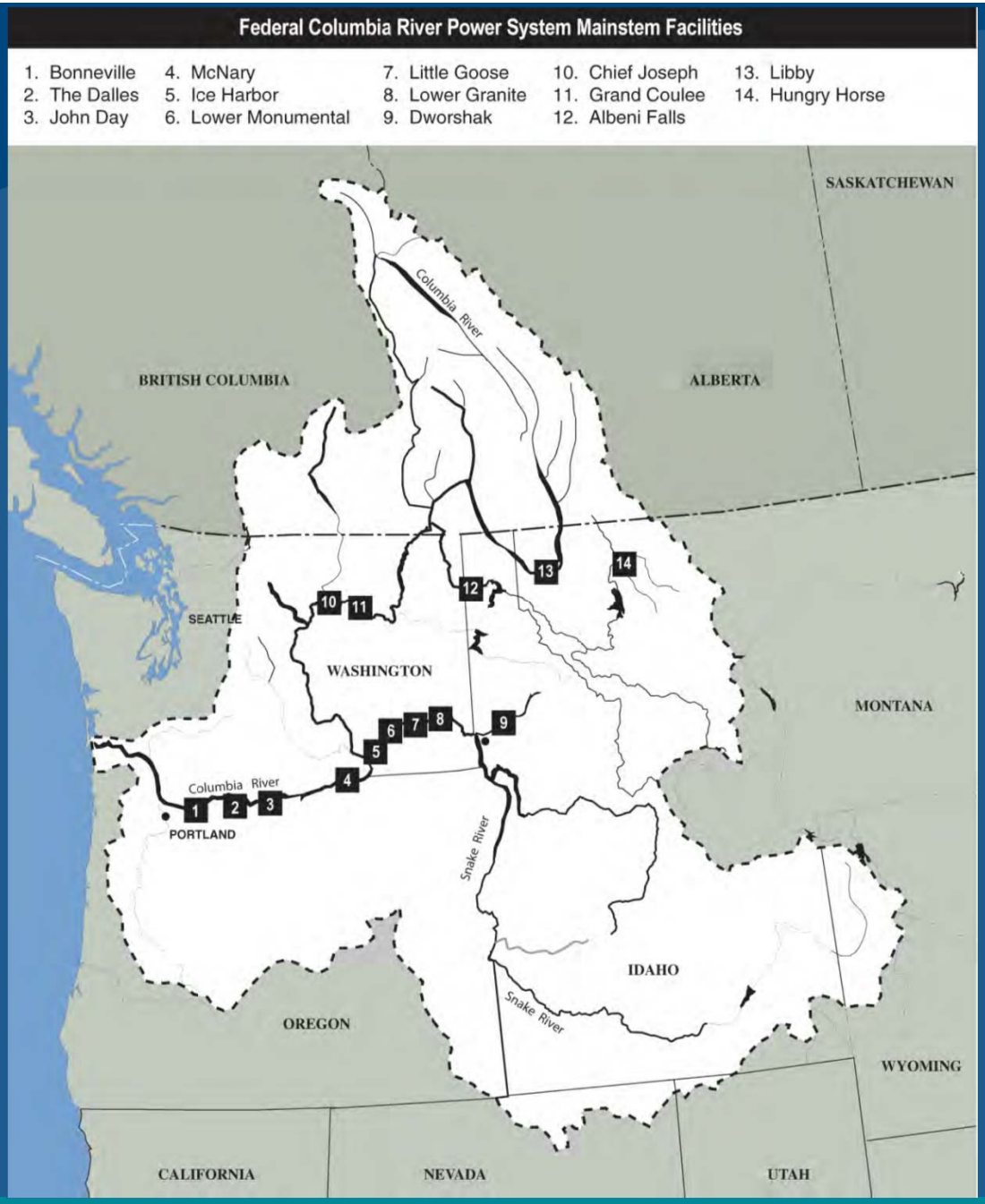
FCRPS Projects



FCRPS Seasonal Flow Targets at McNary Dam

Spring Targets (April to June)

- 220-260 kcfs

Summer Targets (July to August)

- 200 kcfs

Spring Operations to Augment Flows

The Corps and USBR must operate flood control projects (Dworshak, Libby, Grand Coulee, Hungry Horse, and Albeni Falls) to minimum flood control criteria and refill these project by about June 30.

The effect of this requirement?

- Minimize space (volume drafted) in the reservoirs needed for flood control protection
- Minimizes impact of flood control (refill of the volume drafted) on the spring freshet

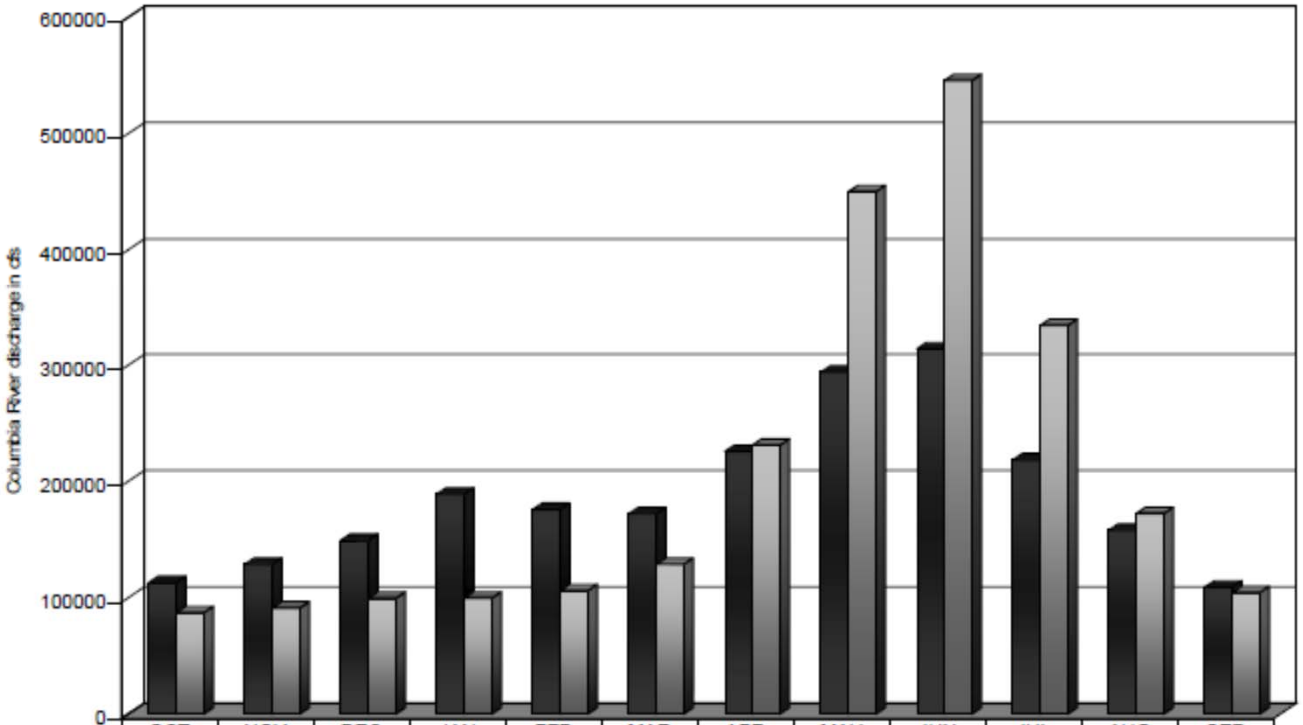
Summer Operations to Augment Flows

Summer Flow Management Volumes

Storage Reservoir	Draft Limit from Full (feet)	Draft Volume (kaf)
Libby	10	455
Hungry Horse	10	246
Grand Coulee	10	789
Banks Lake	5	130
Dworshak	80	1,200
Upper Snake		487
Canadian water		1000, - 2,000
Total		4,307 – 5,307

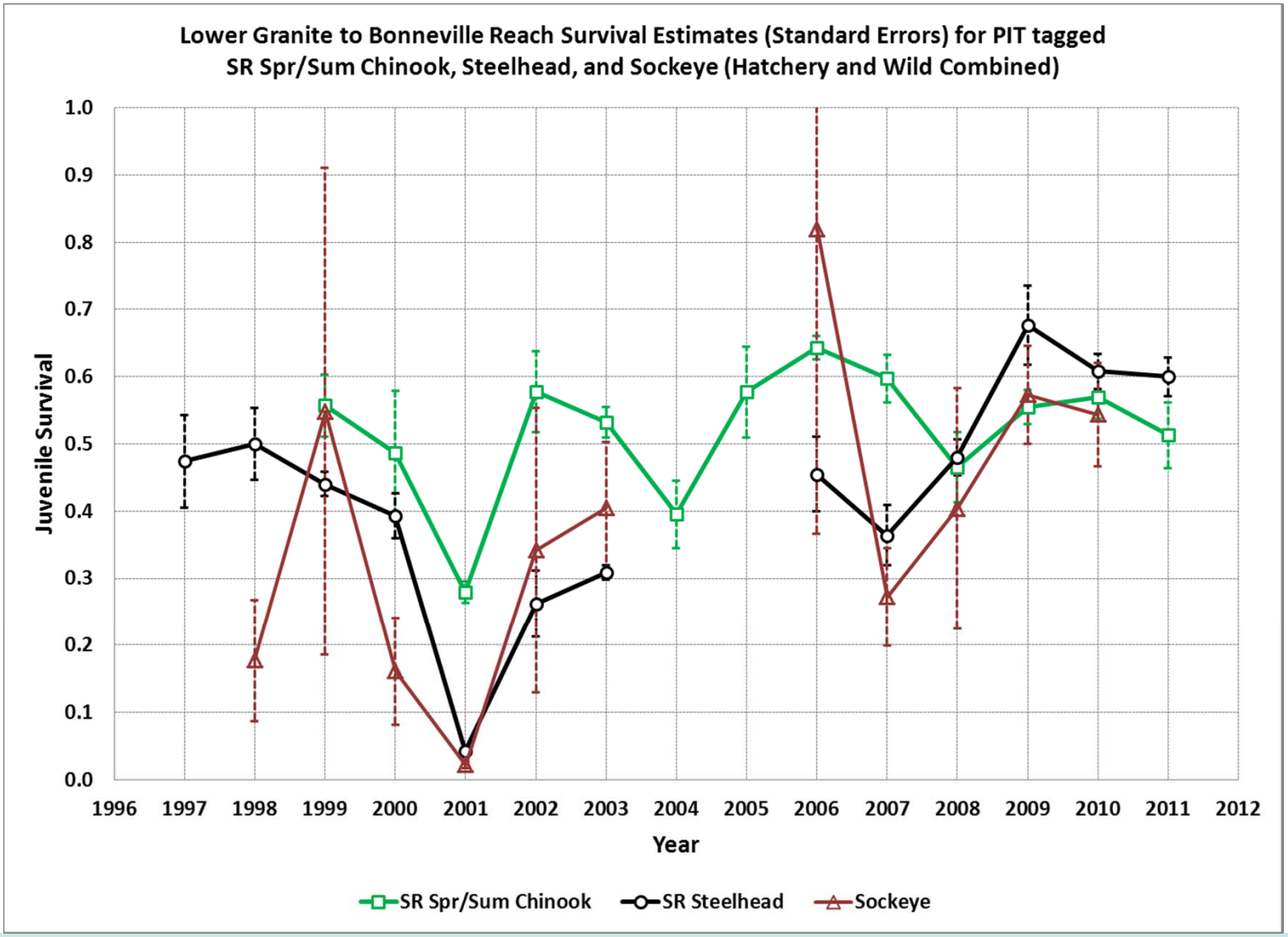
Natural vs Current Flows at Bonneville Dam

Figure 5.1-2. Simulated mean monthly Columbia River flows at Bonneville Dam under current conditions and flows that would have occurred without water development (water years 1929 – 1978. Source: Current Condition Flows – Bonneville Power Administration, HYDSIM model run FRIII_07rerun2004biop.xls; Pre-Development Flows – USBR (1999) Cumulative Hydrologic Effects of Water Use: An Estimate of the Hydrologic Impacts of Water Resource Development in the Columbia River Basin.



	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
Current	113017	128641	149403	189076	175921	172150	225689	293948	313930	218523	157935	109020
Natural	87115	91029	99387	99496	106033	128580	231047	450040	545561	334238	172430	104310

Survival Estimates



Other General Effects

- Reduced flows (and increased cross-sections of reservoirs) increases juvenile travel times.
- Fish that arrive later at Bonneville Dam return at lower rates (Smolt to Adult returns) than do fish that arrive earlier at Bonneville Dam.
- Research in the lower estuary and Columbia River plume is aimed at better understanding the mechanisms that affect fish survival as they move from the Columbia River into the ocean.