

Fish and Wildlife Program Draft Mainstem Amendments

November 1, 2002

Caveats

- Best attempt made to capture the “intent” of draft amendment language
- This is a DRAFT analysis and may require fine tuning
- Electricity prices used reflect more “normal” conditions with an annual average of about \$28/mw-hour
- These analyses reflect regional impacts

Major Issues

- Amount of bypass spill
- Amount and timing of flow augmentation volumes
- Method for release of flow augmentation volume
 - Lower river flow objectives, or
 - At-site control of release
- Requirement to fill by April 10th

Draft Mainstem Operation Grand Coulee

- Jan min elevation 1270 feet
 - Feb min elevation 1260 feet
 - Mar to Apr 15 min elevation 1250 feet
 - Apr 16-30 min elevation 1255 feet
 - May min elevation 1265 feet
- (min elevations subject to flood control requirements)
- Jun fill to 1290 feet
 - Jul draft to 1286.5 feet
 - Aug draft to 1283 feet
 - Sep to Dec maintain at 1283 feet

Draft Mainstem Operation

Libby

- Jan to Jun min elevations set by 95% confidence June refill curves
- May and Jun draft for revised sturgeon flows (take precedence over refill)
- Jul to Sep draft to 2449' by Sep 30 (2439' in 20 % driest years) to achieve level outflows
- Oct to Dec min elevations set by power rule curves

Draft Mainstem Operation Hungry Horse

- Jan to Jun min elevations set by 95% confidence June refill curves
- Jul to Sep draft to 3550' by Sep 30 (3540' in 20 % driest years) to achieve level outflows
- Oct to Dec min elevations set by power rule curves

Draft Mainstem Operation

Dworshak

- Jan to Jun min elevations set by 95% confidence June refill curves
- Jul 31 1584' target elevation
- Aug 15 1562.5' target elevation
- Aug 31 1538' target elevation
- Sep 30 1520' target elevation
- Oct to Dec operate to min flow constraint

Draft Mainstem Operation

- Maintain current Biop bypass spill levels at the 4 lower Snake and 4 lower Columbia dams (120% gas limit)
- Provide Biop specified flows for Chum from mid-October to April from Coulee, Libby and Horse
(1,283' target elevation at Coulee takes precedence)
- Provide Biop specified flows for the Hanford Reach from November to May

Summary of Impacts

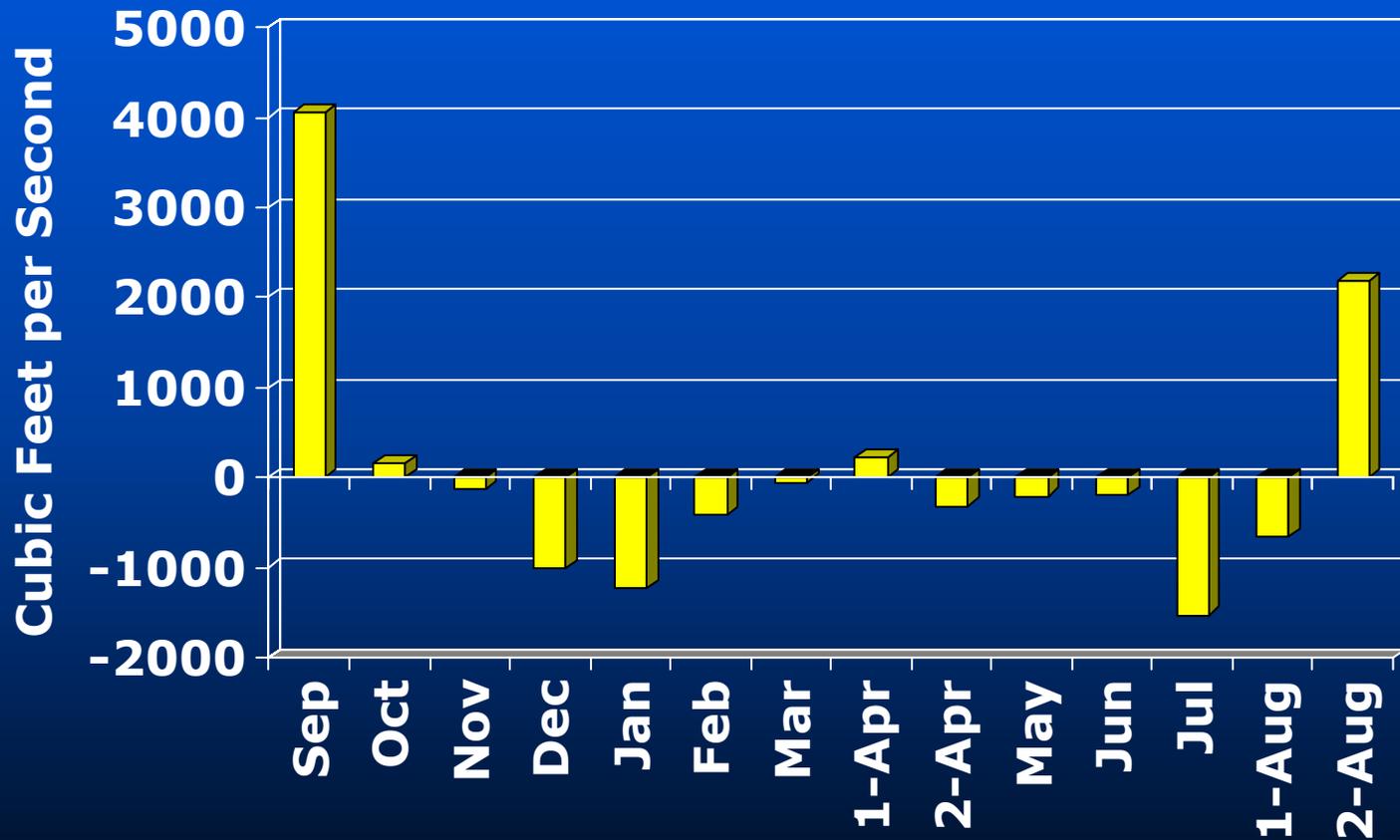
- River Flows & Augmentation Volumes
- Bypass Spill
- Reservoir Elevations
- Retention Time at Grand Coulee
- Hydroelectric Generation
- Cost

Summary of Impacts

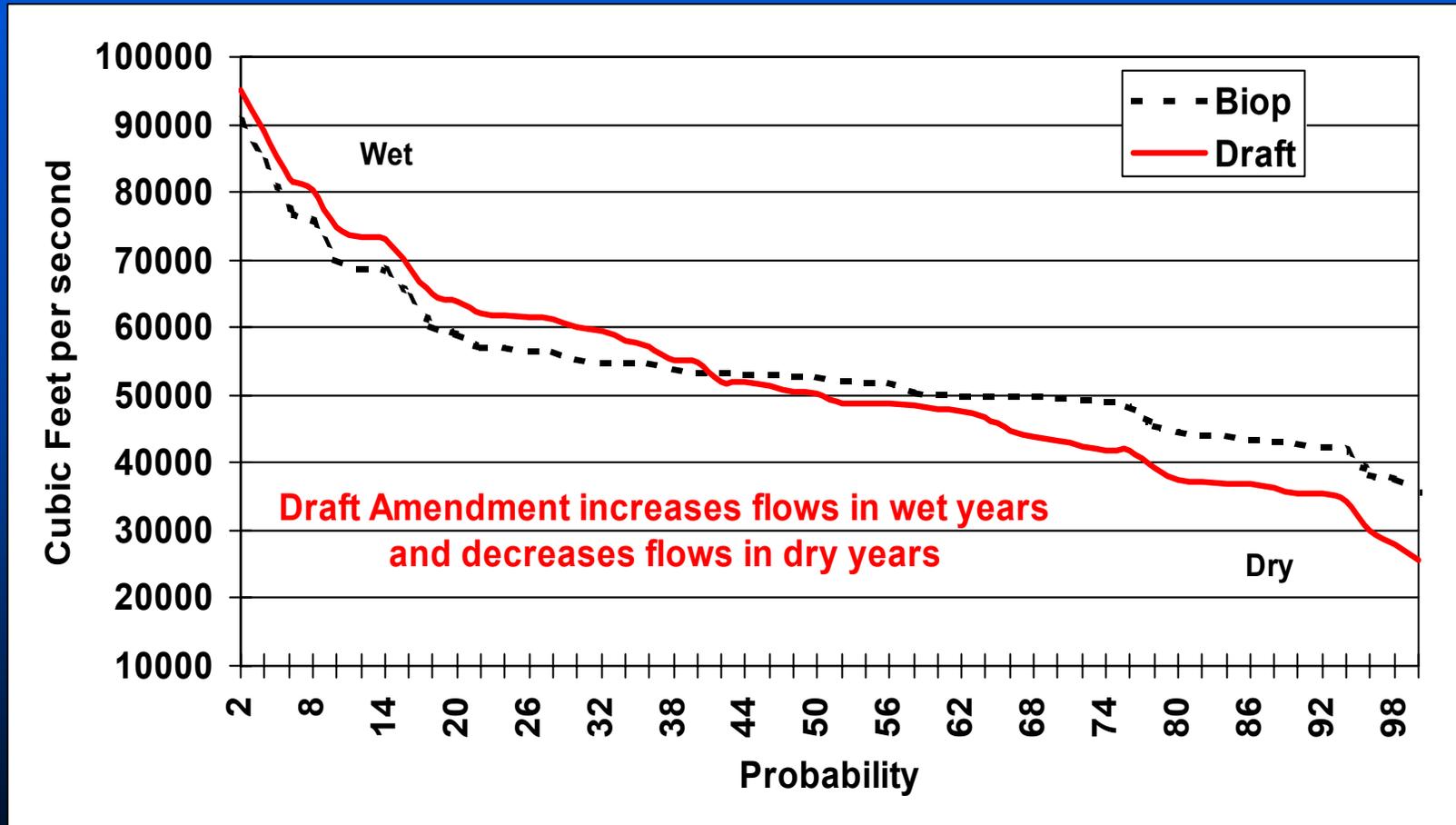
(gen, cost and flow volumes relative to a "power only" operation)

50-Year Average	Biop	Draft	Diff
Apr-Jun Flow Volume (maf)	1.9	1.5	-0.4
Jul-Aug Flow Volume (maf)	4.4	3.6	-0.8
Sept Flow Volume (maf)	-0.9	-0.5	+0.4
Tot Apr-Sep Flow Volume (maf)	5.4	4.6	-0.8
Bypass Spill Volume (maf)	63.5	63.5	0
April 15 th Fed Content (maf)	7.0	6.6	- 0.4
June 30 th Fed Content (maf)	14.6	14.6	0
Aug 31 st Fed Content (maf)	12.3	13.1	+ 0.8
Coulee Jul-Aug Ret (days)	39.1	41.6	+ 2.5
Annual Hydro Gen (aMW)	-1,032	-991	+ 41
Dec-Mar Gen (MW-mo)	-6,292	- 4,545	+ 1,747
Regional Cost (millions)	\$ 228	\$ 220	- \$ 8

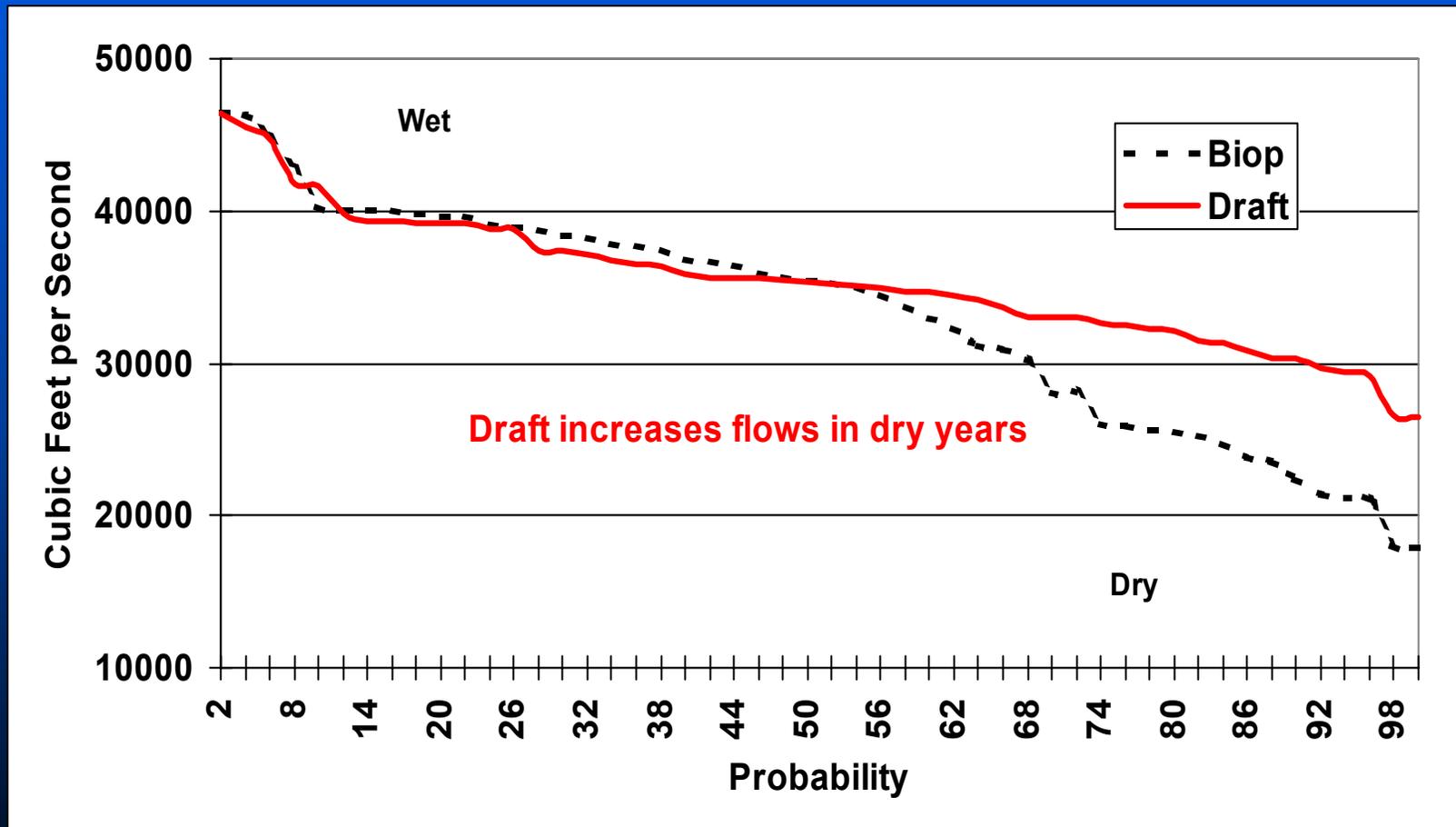
Change in Lower Granite Flow 50-Year Average



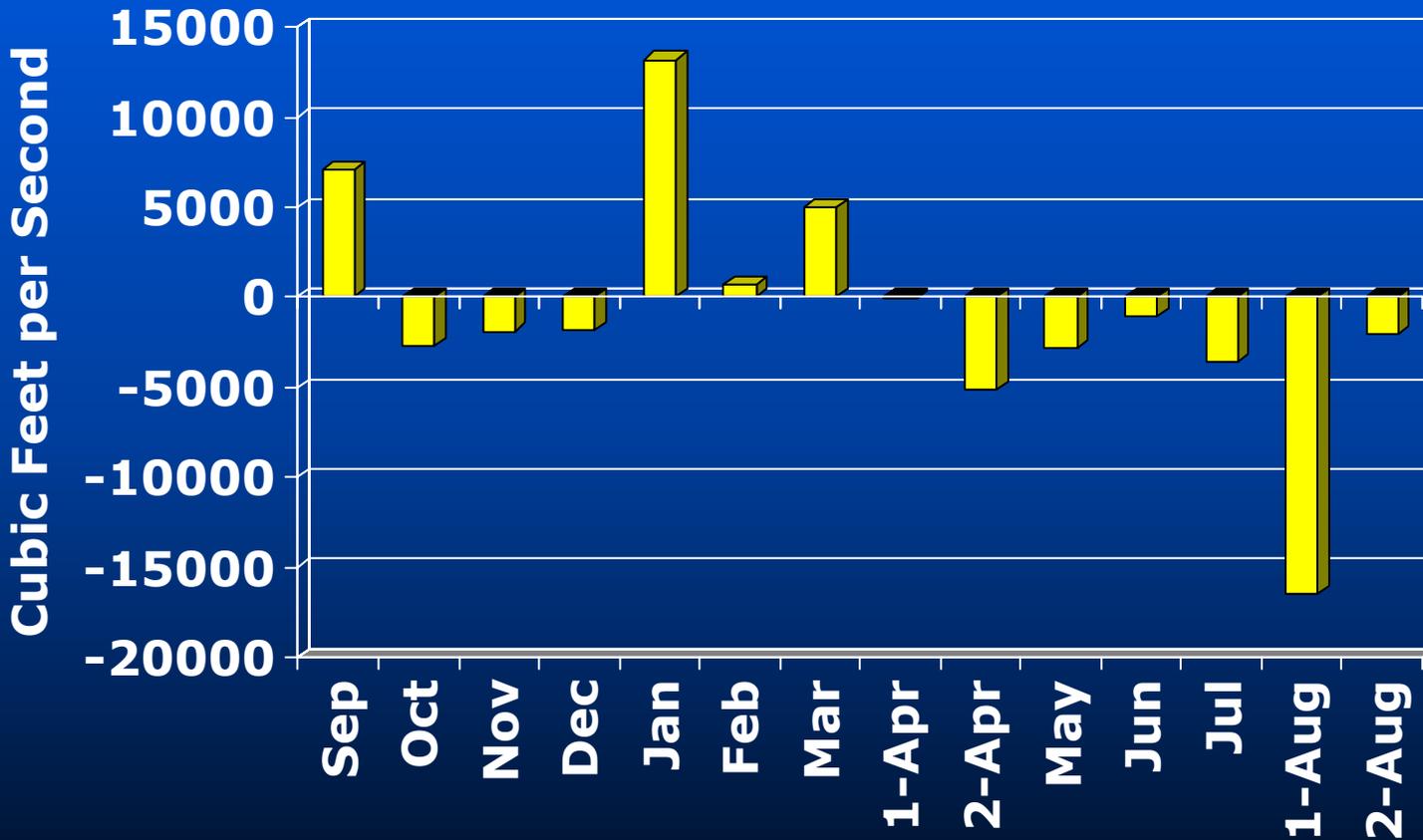
Flow Profiles – Lower Granite July



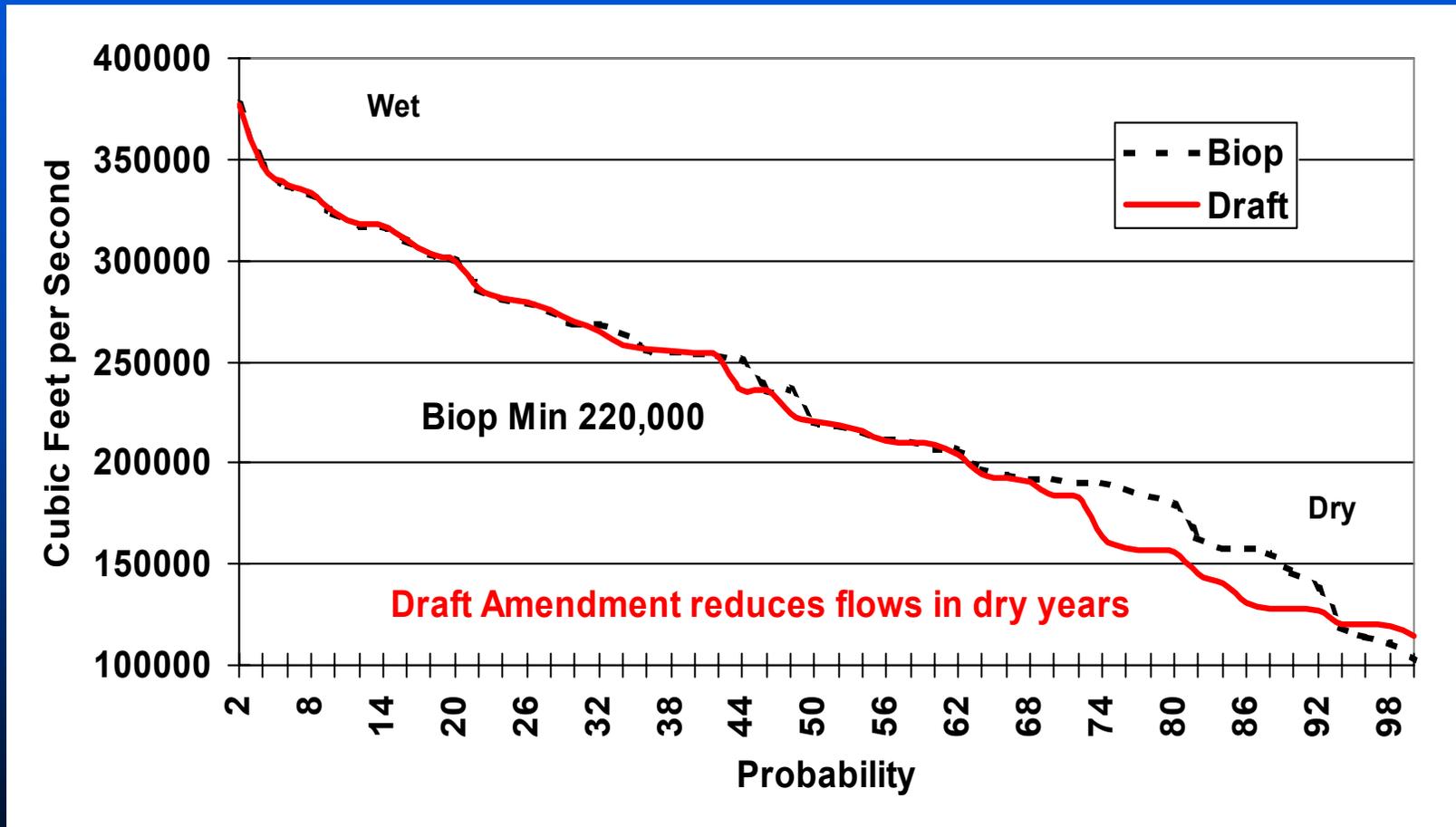
Flow Profiles – Lower Granite August 16-31



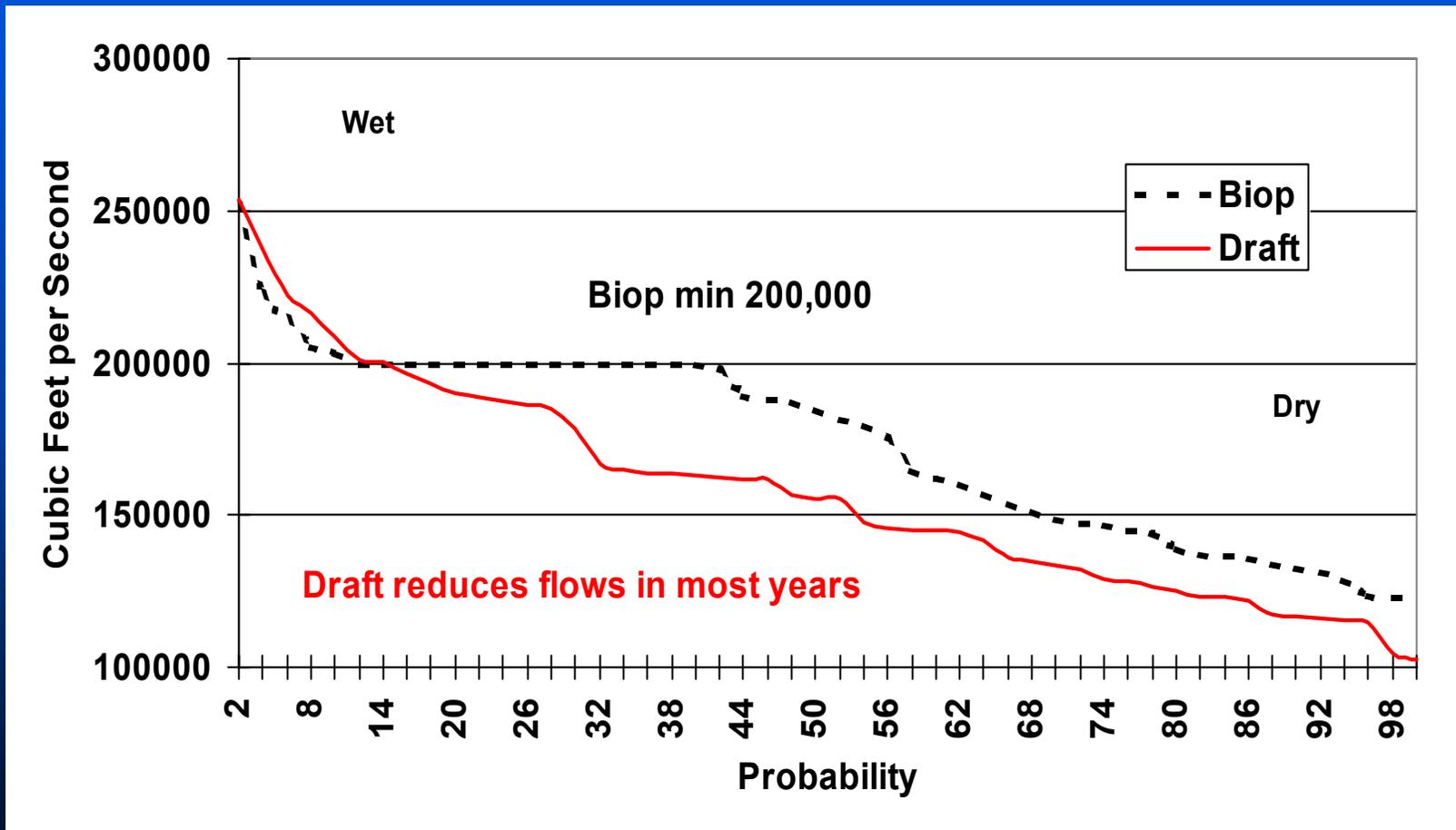
Change in McNary Flow 50-Year Average



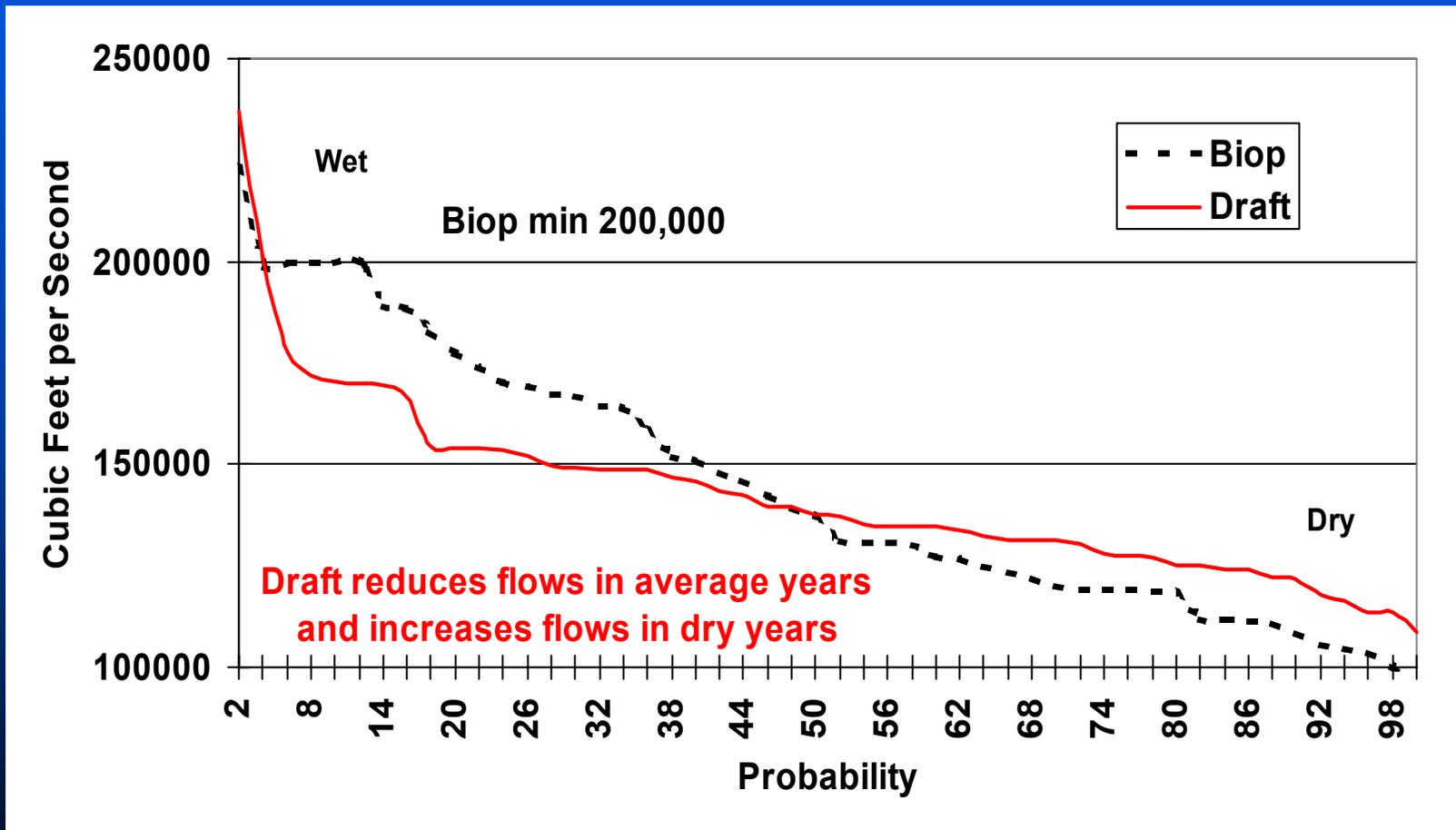
Flow Profiles – McNary April 16-30



Flow Profiles – McNary August 1-15

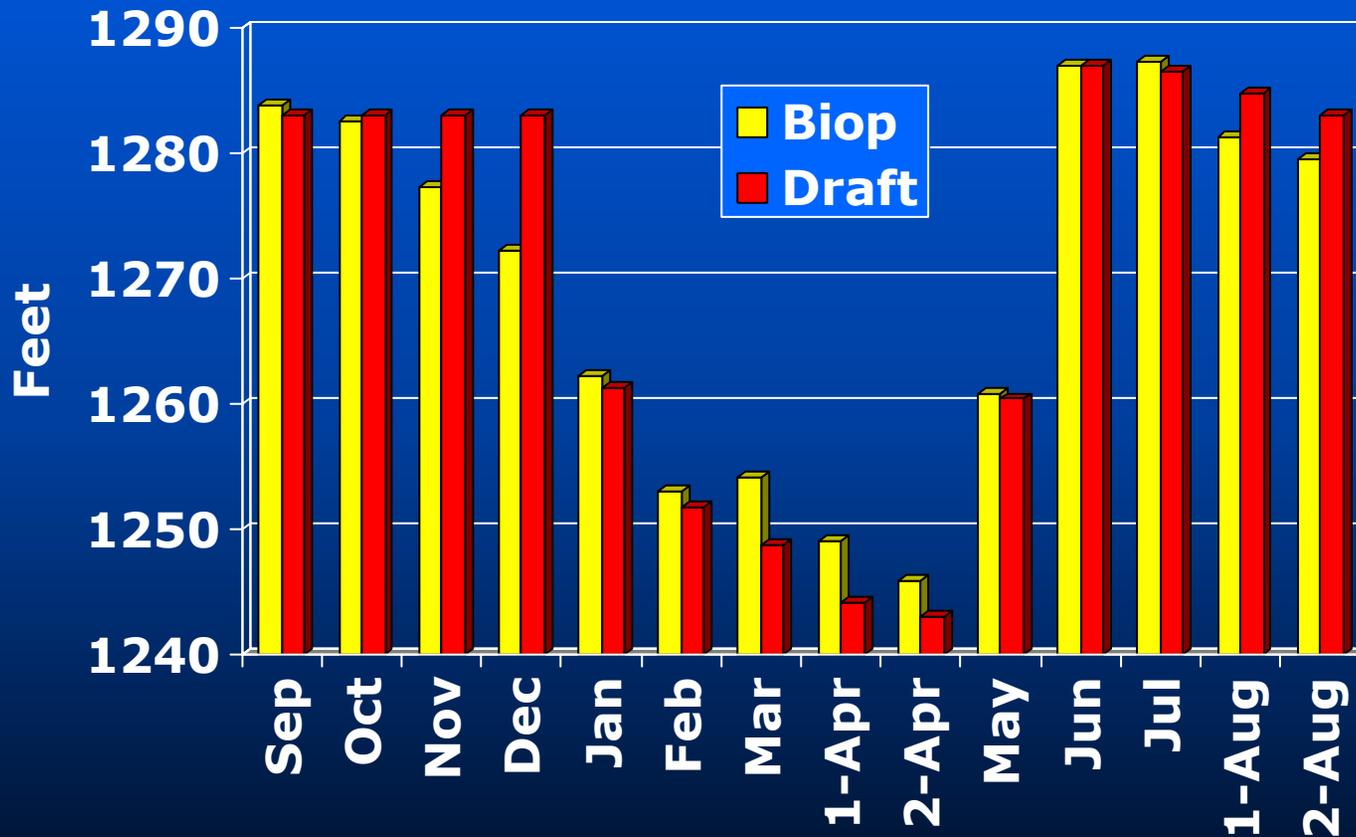


Flow Profiles – McNary August 16-31



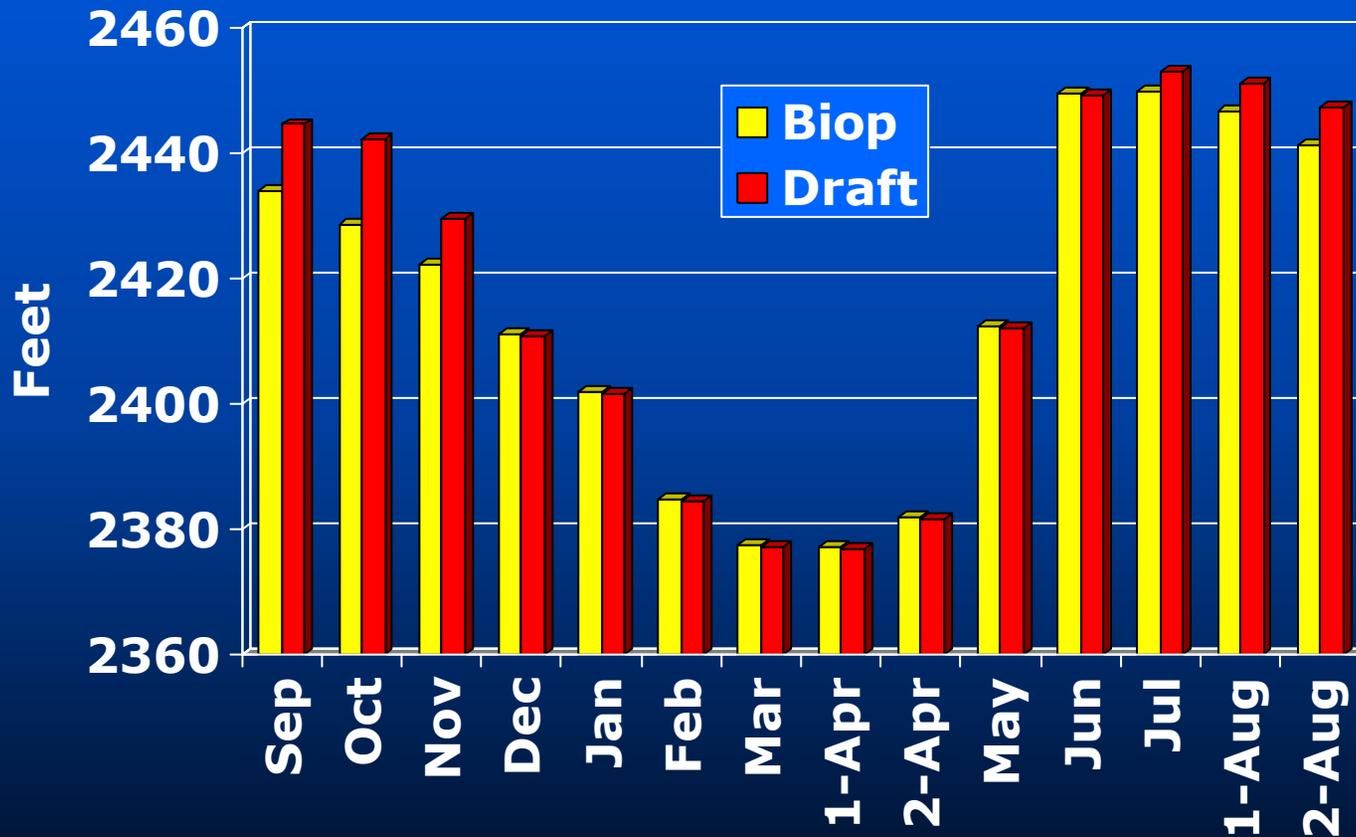
Elevation at Grand Coulee

50-Year Average

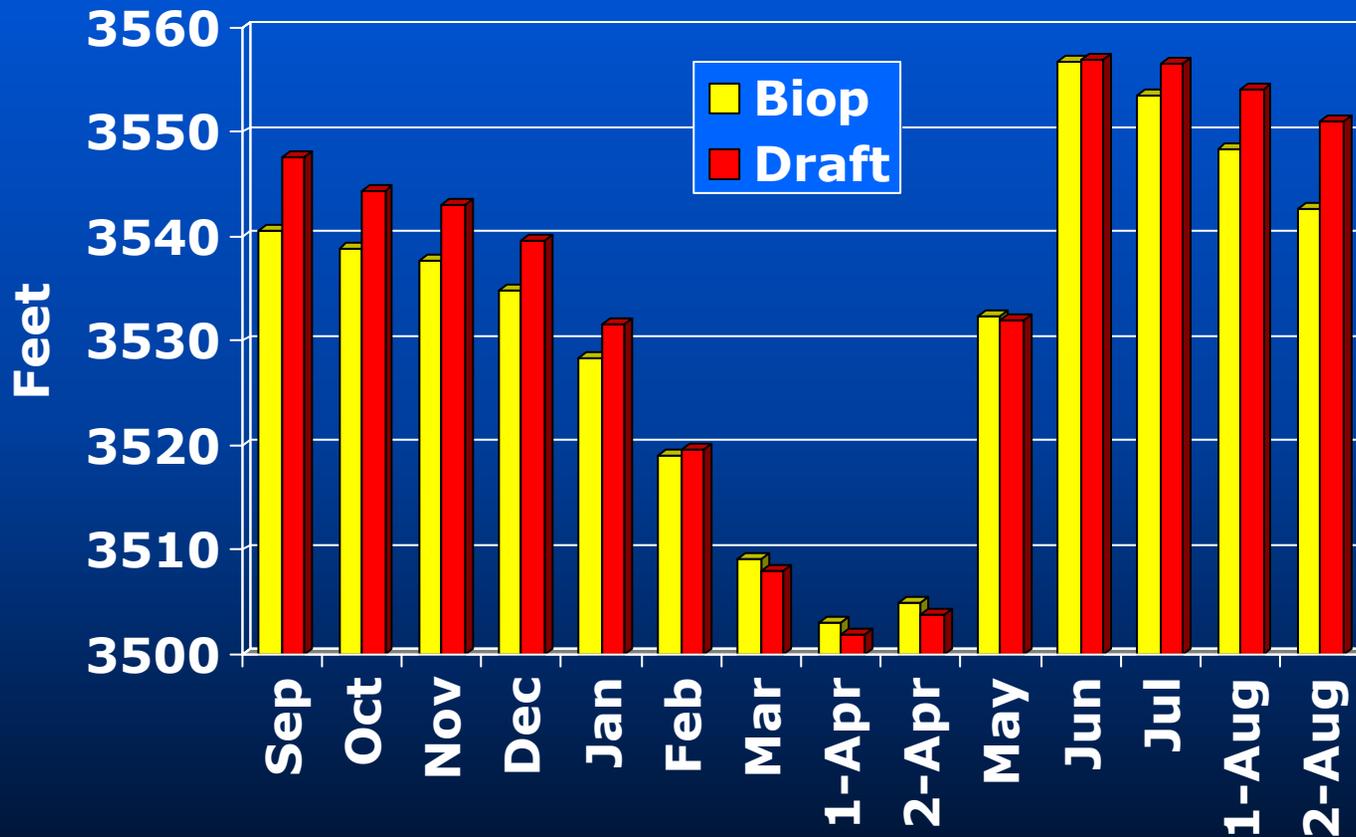


Elevation at Libby

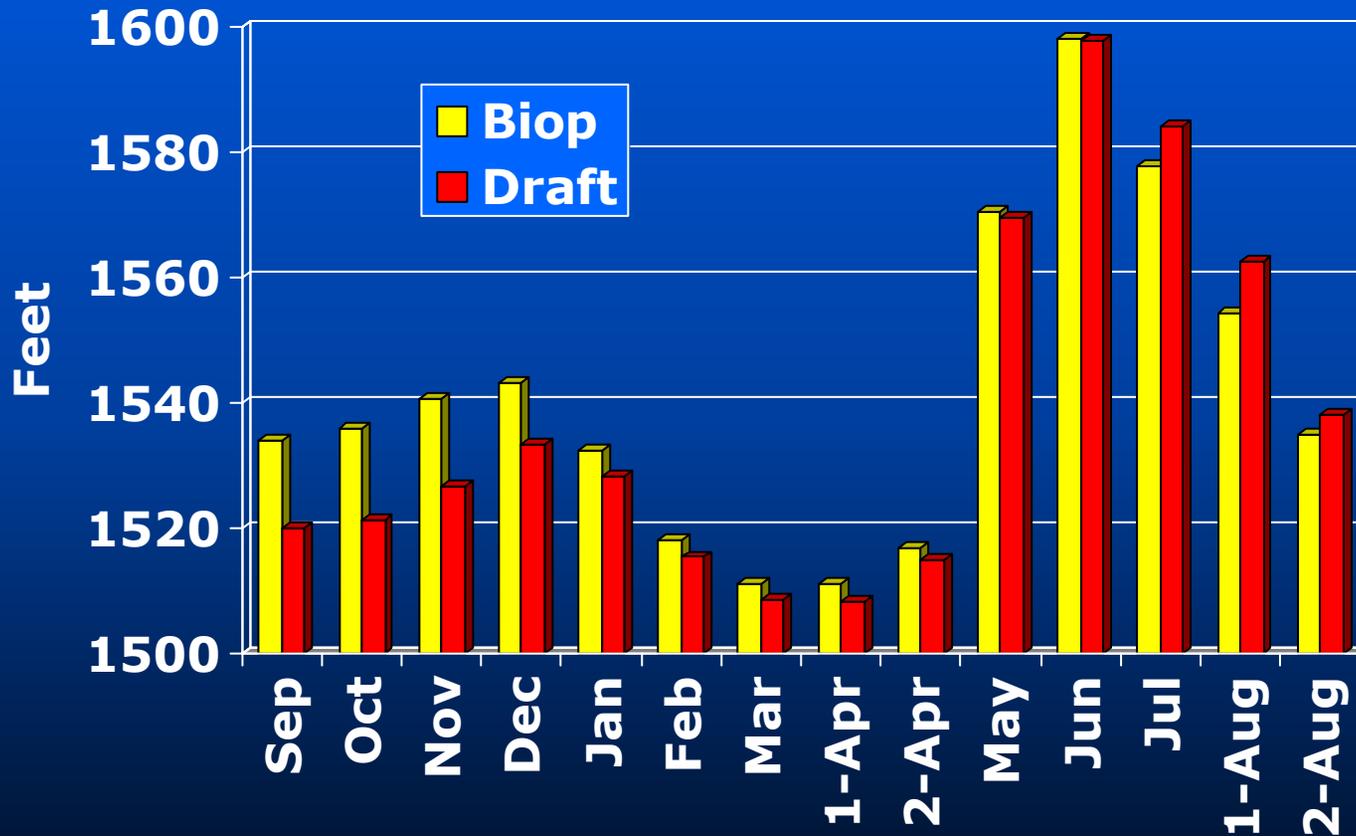
50-Year Average



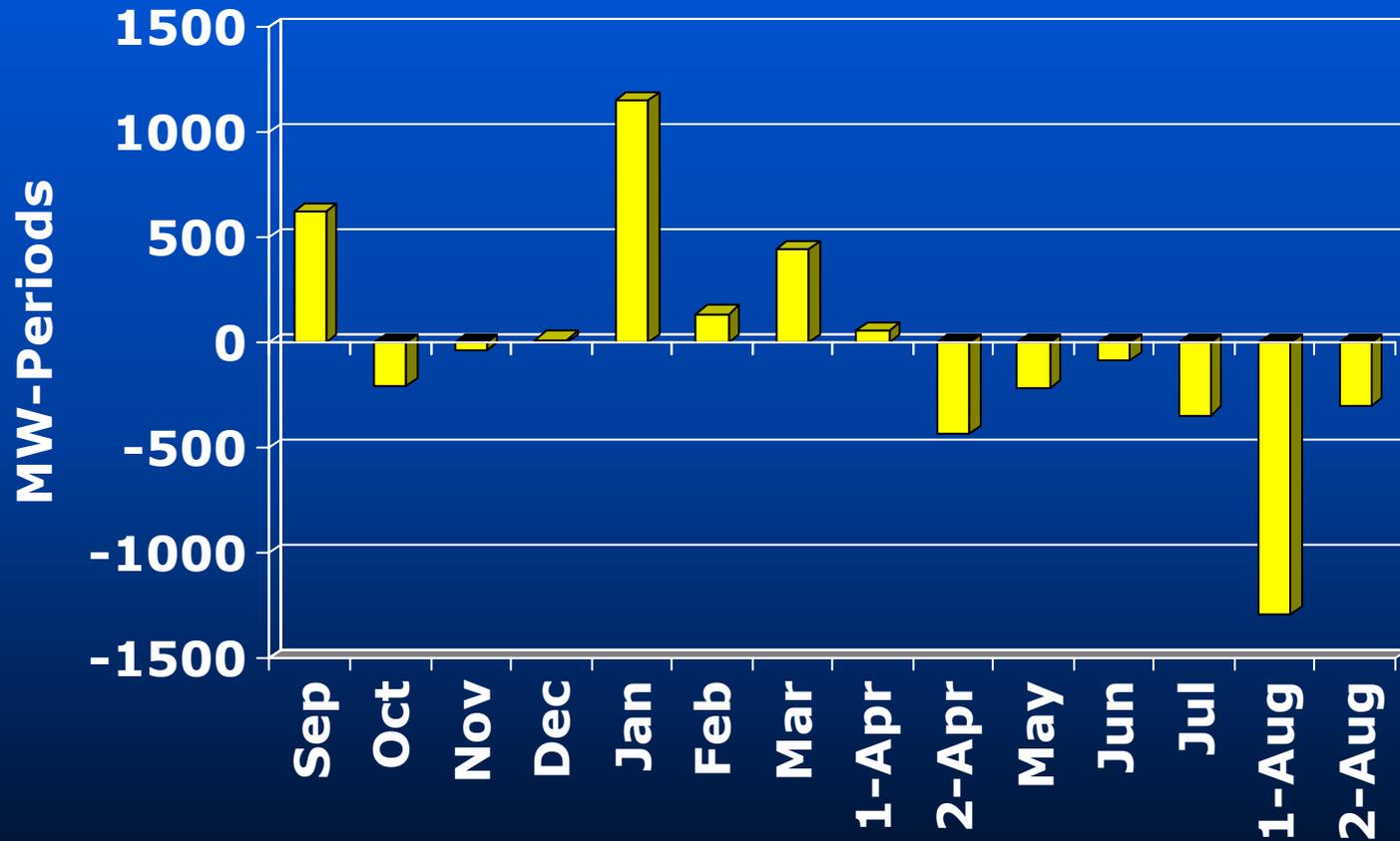
Elevation at Hungry Horse 50-Year Average



Elevation at Dworshak 50-Year Average



Change in Generation 50-Year Average



Generation Profiles January

