

CRITFC 2006 River Operations (Preliminary)



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River Operations are Interim Measures

- Are a stepping stone toward increased fish survival and productivity
- Will not alone achieve stock recovery to sustainable, harvestable levels
- Additional measures are needed for recovery: (e.g. SR dam breaching, John Day drawdown, long-term flood control modifications and additional flow augmentation)

Plan Goals

- Establish a normative (i.e. natural peaking) mainstem hydrograph as much as possible by maintaining storage reservoirs at their flood control upper rule curves and use of upstream storage.
- Reduce water particle and fish travel time by increasing flows and selective reservoir drawdown.
- Establish normative dam passage conditions through optimizing spill and surface bypass.

Plan Goals (Continued)

- Reduce power peaking that causes flow fluctuations.
- Meet in-river passage and survival rates (80% FPE; 97-98% per dam survival; 2-6% SAR) for all salmon stocks.
- Provide good passage operations for lamprey and sturgeon.
- Increase stock productivity to provide for sustainable, harvestable fish populations.

Key Plan Recommendations: Decision Making/Management

- For river operations planning and decision-making establish process such as US v. Oregon with federal court oversight
- BPA appears financially solvent: No “emergency” curtailment of spill in 2006.
- Water conservation: no additional river water withdrawal for drought conditions.
- Water conservation: BPA and Reclamation restart 2001 water acquisition programs.

Key Recommendations: Flow Management

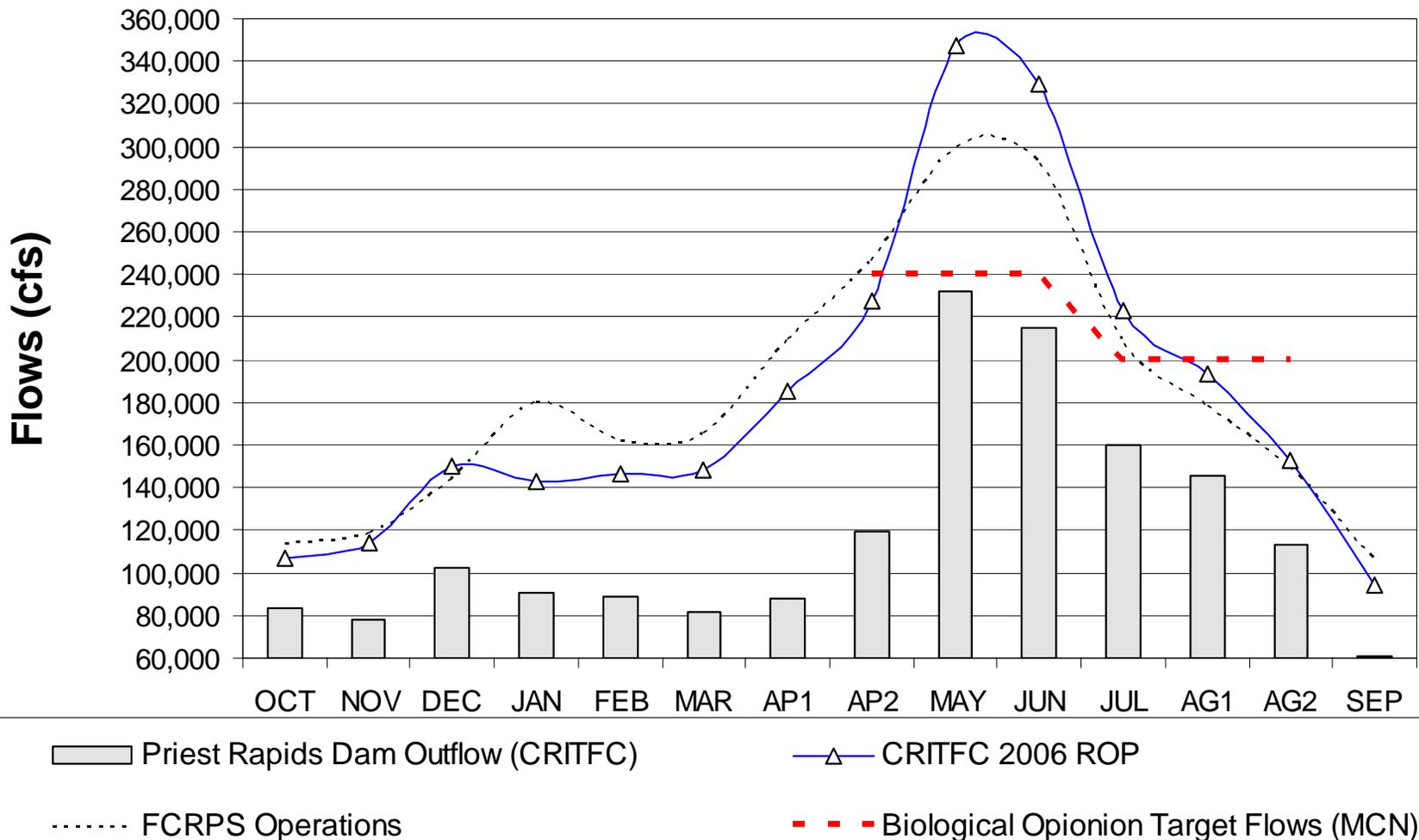
- Maintain upper basin storage reservoirs at their upper flood control rule curves from December-April.
- Modified Var-Q Operations at Libby and Hungry Horse avoiding Lake Roosevelt compensating draft.
- Brownlee spring flood control shift to Lake Roosevelt- 100 Kaf
- 1.5 MaF from Canadian Non-Treaty Storage.
- 260 KaF from Banks Lake.

Key Recommendations: Flow Management

- 487 KaF from Upper Snake and 60 KaF in-stream flow rights consistent with SRBA.
- Nez Perce Dworshak Plan 1 MaF July-August; 200 Kaf September
- 237 KaF from Brownlee in July-August (interim FERC Settlement Agreement)
- Seek timely pass-through of Canadian and/or Lake Roosevelt storage and Kootenay Lake operations to implement Montana flow plan for August-September.

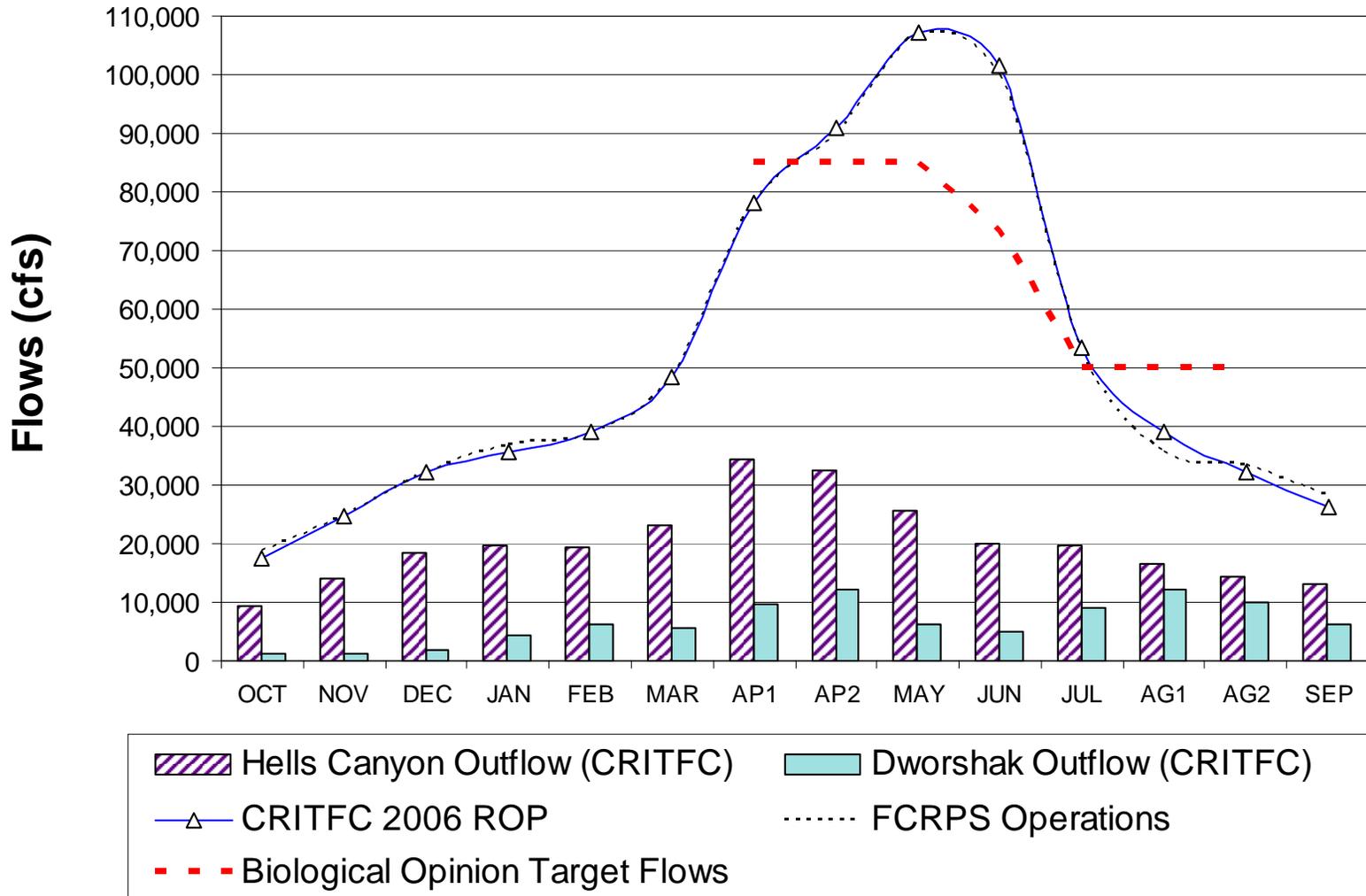
Normative Peaking Hydrograph (Average of 50 water years)

Columbia at The Dalles: WY 2006



Normative Peaking Hydrograph (Average of 50 water years)

Snake at Lower Granite: WY 2006



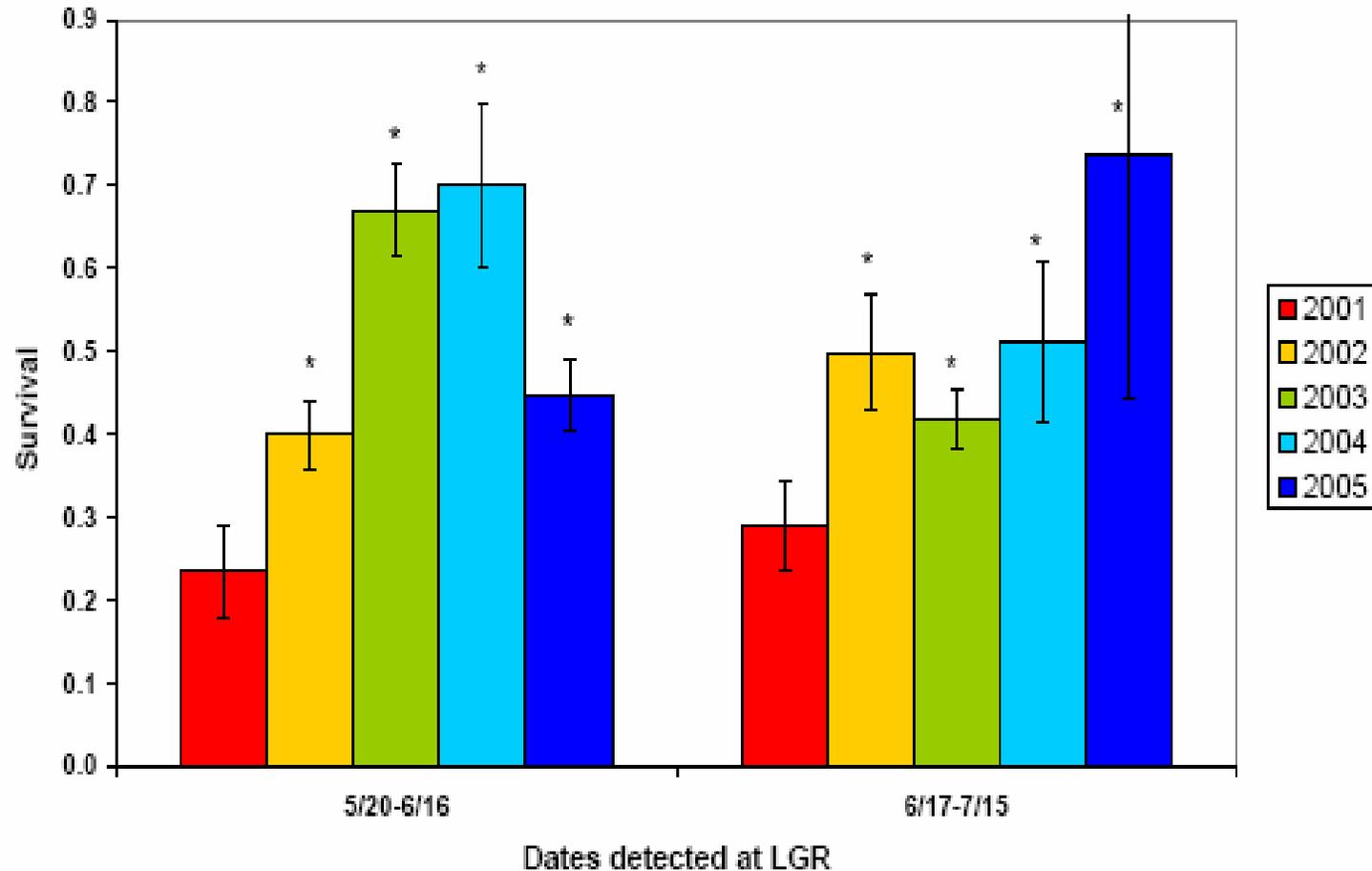
Key Recommendations: Reservoir elevations

- Draw down Lower Granite pool to msl 723 feet during summer migration.
- John Day at minimum irrigation pool (msl 262.5)
- McNary at minimum operating pool (msl 335)
- Ice Harbor, Little Goose, Lower Monumental at minimum operating pools
- Refill Lake Roosevelt to no less than msl 1283 by October 1

Spill Operations

- Spring initiation planning date: March 20 for early migrants including kelt passage.
- Spring Spill: 24-hours all dams; increased volumes over BiOp schedule, meet TDG standards.
- Summer Spill: 24-hours at all dams, slightly increased volumes over BiOp schedule, meet TDG standards.
- Summer ending planning date: September 15 for late juvenile migrants and to reduce adult fallback impacts.
- Conduct spring RSW tests at LWG, LoMo and IHR; conduct summer RSW tests at IHR and LoMo.

Survival for Subyearling Chinook LGR to McN 2001 to 2005



* Denotes statistically significant difference between early season and late season survival estimates at $p = 0.10$ level

Figure 1. Survival of subyearling Chinook from Lower Granite Dam to McNary Dam by detection period for the years 2001 through 2005. Note that 2005 group 1 end date is actually June 12.

Survival for Subyearling Chinook
LGR to McN 2001 to 2005 versus Average Percent Spill

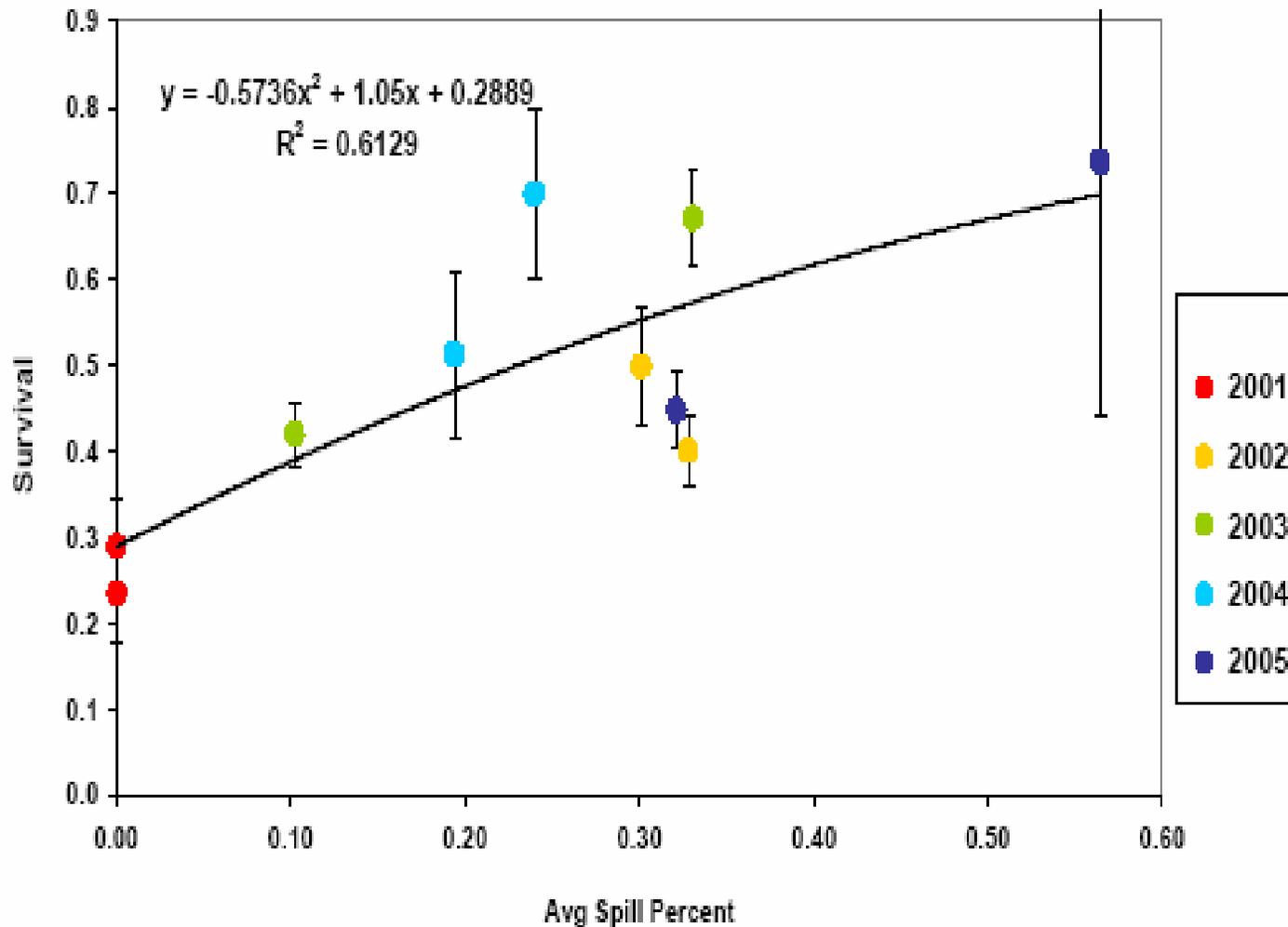


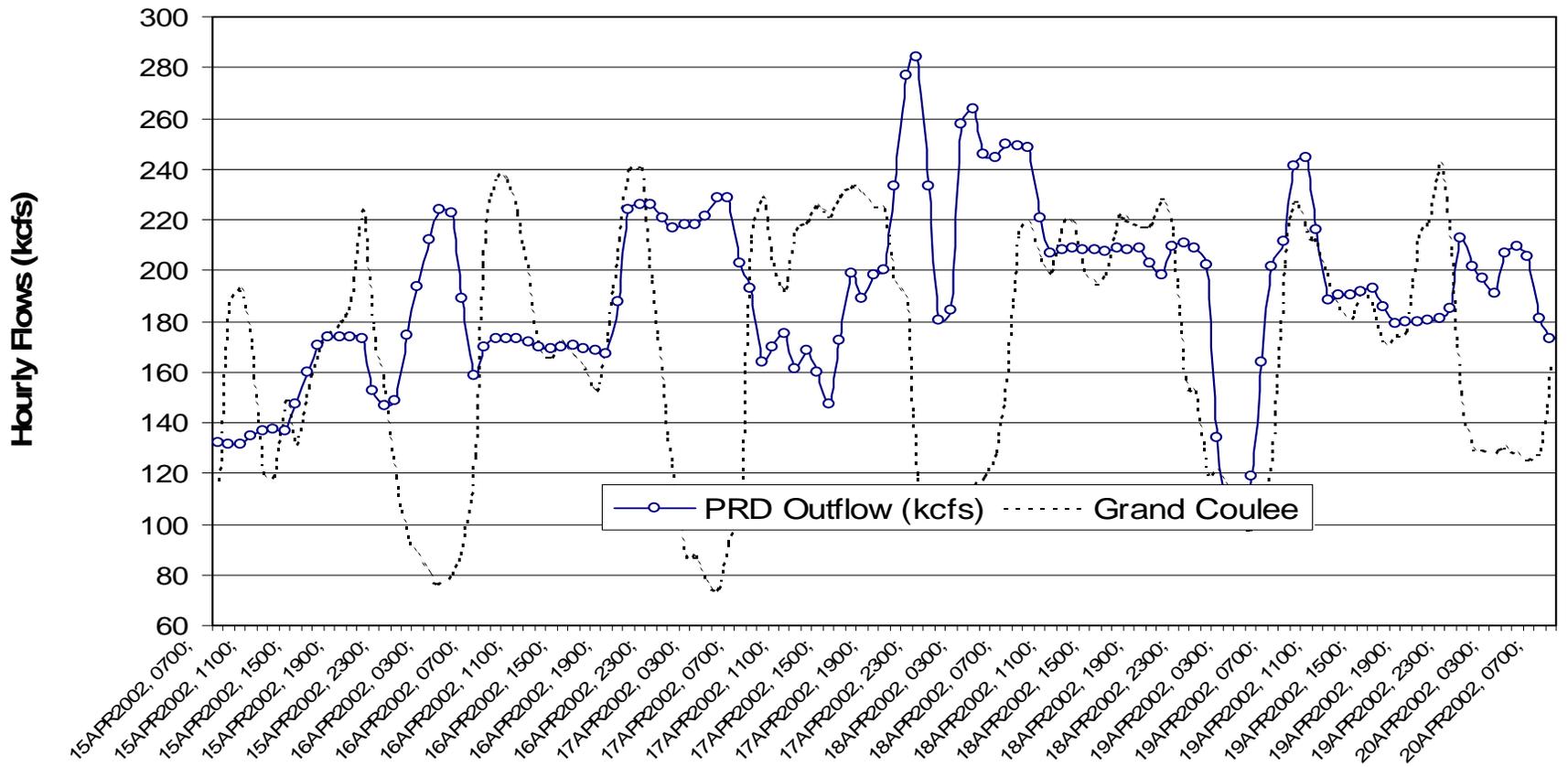
Figure 2. Relationship between Survival and Average Spill Percentage at Little Goose, Lower Monumental, Ice Harbor and McNary dams.

Key Recommendations: Fish Transport, Fish Facilities

- Spread-the-risk for juvenile transportation (no more than 50% of fish transported spring & summer).
- Cease truck transportation
- Improve fish facilities and water quality through additional inspections and better emergency protocols.
- Conduct active adaptive management research to resolve critical uncertainties.

Hanford Reach: Reduce Flow Fluctuations/Stranding/Entrapment

Columbia River at Hanford Reach



Vernita Bridge Flow Changes in 8 hour period



Hanford Reach Fry Losses



Recommendation: No more than 10 Kcfs variation in Hanford Reach daily flows (from Anglin et al. 2005)

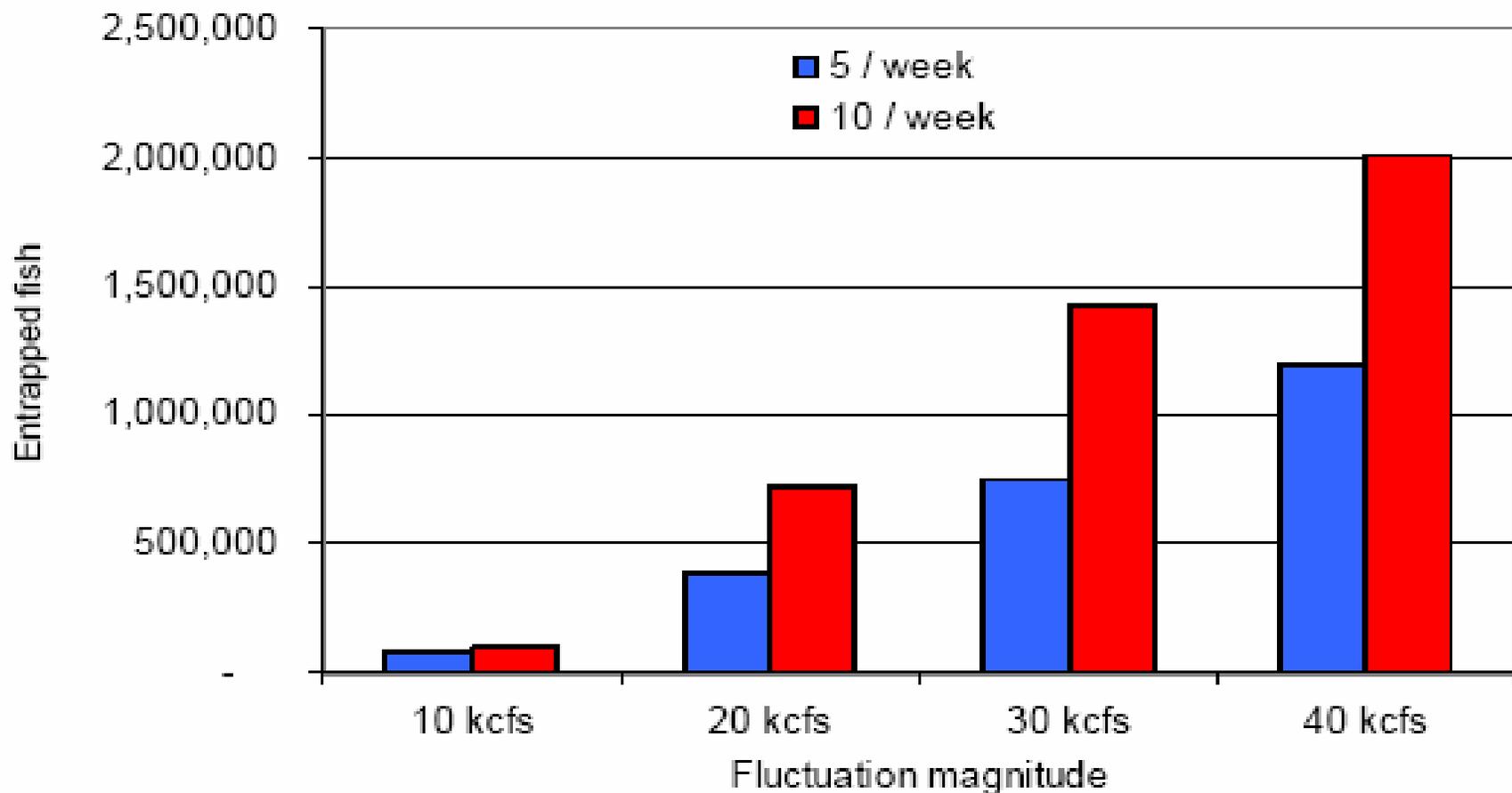


Figure 55. Simulated number of Chinook entrapped for alternative hydro operations of 5 or 10 fluctuations per week and fluctuation magnitudes of 10, 20, 30, or 40 kcfs.



Summary

- CRITFC ROP creates interim “normative river” and aggressive “non-breach” conditions necessary to increase salmon in-river survival and smolt-to-adult returns.
- CRITFC ROP is a stepping stone toward improved survival but other actions are needed to achieve recovery to achieve sustainable, harvestable populations.

