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NOAA Fisheries' "Low Flow" Transport Operations Proposal

Presentation to the ISAB, March 12, 2010

NOAA FISHERIES SERVICE

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2008 ISAB Snake River Spill-Transport Review

- Issues to Consider Relating to Transport
  - Need for more information
  - Impacts to SR lamprey
  - Impacts to MCR steelhead (straying from SR)
  - Impacts to SR sockeye
  - Passage alternatives should be evaluated against the baseline of spill

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2008 ISAB Snake River Spill-Transport Review

- "whenever conditions allow during the late April-May period, a strategy allowing for concurrent transportation and spill is prudent."
  (Recommendation 1, pg 37)

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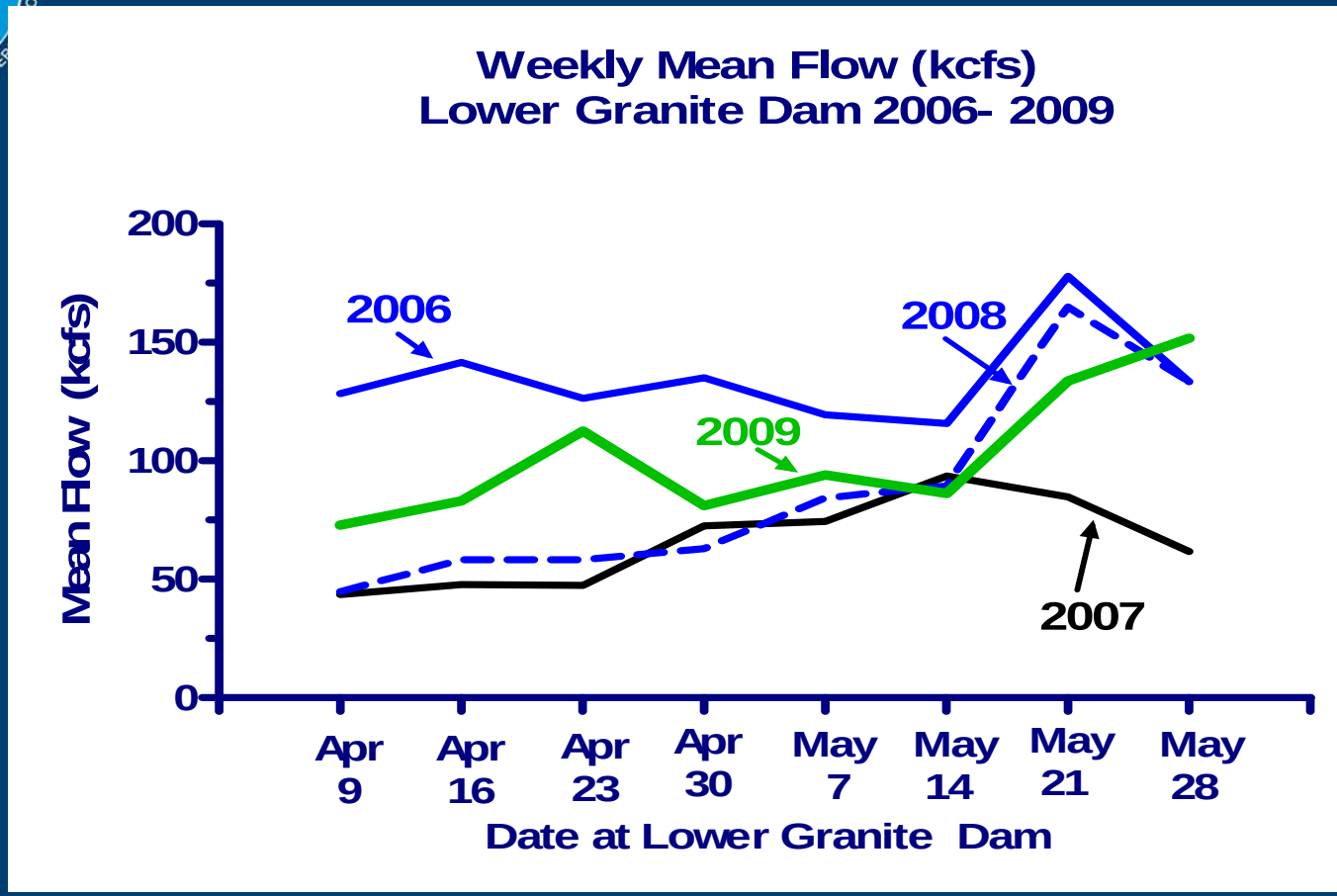
2006-2009 Flows at LGR



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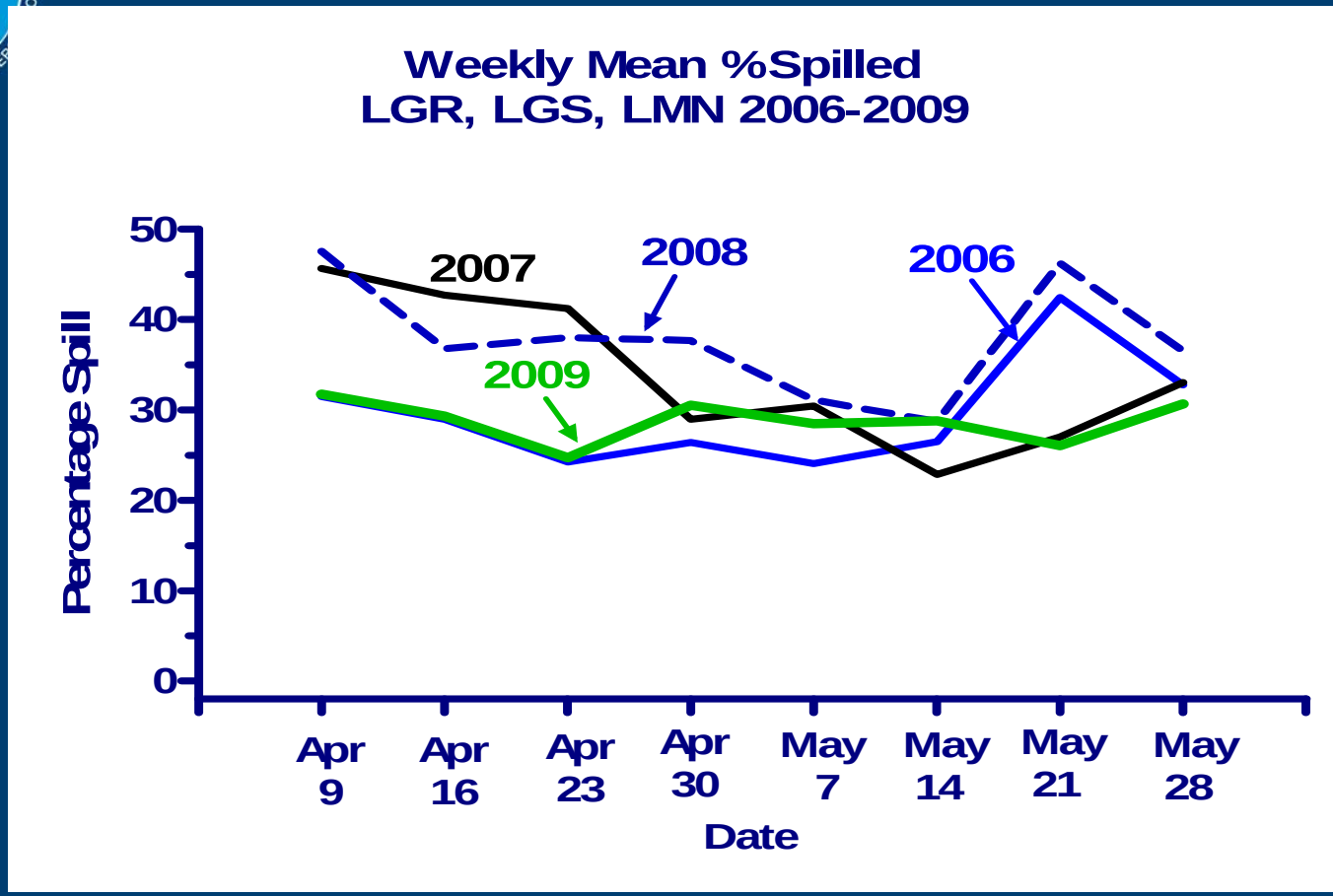
2007-2009 Spill Operations



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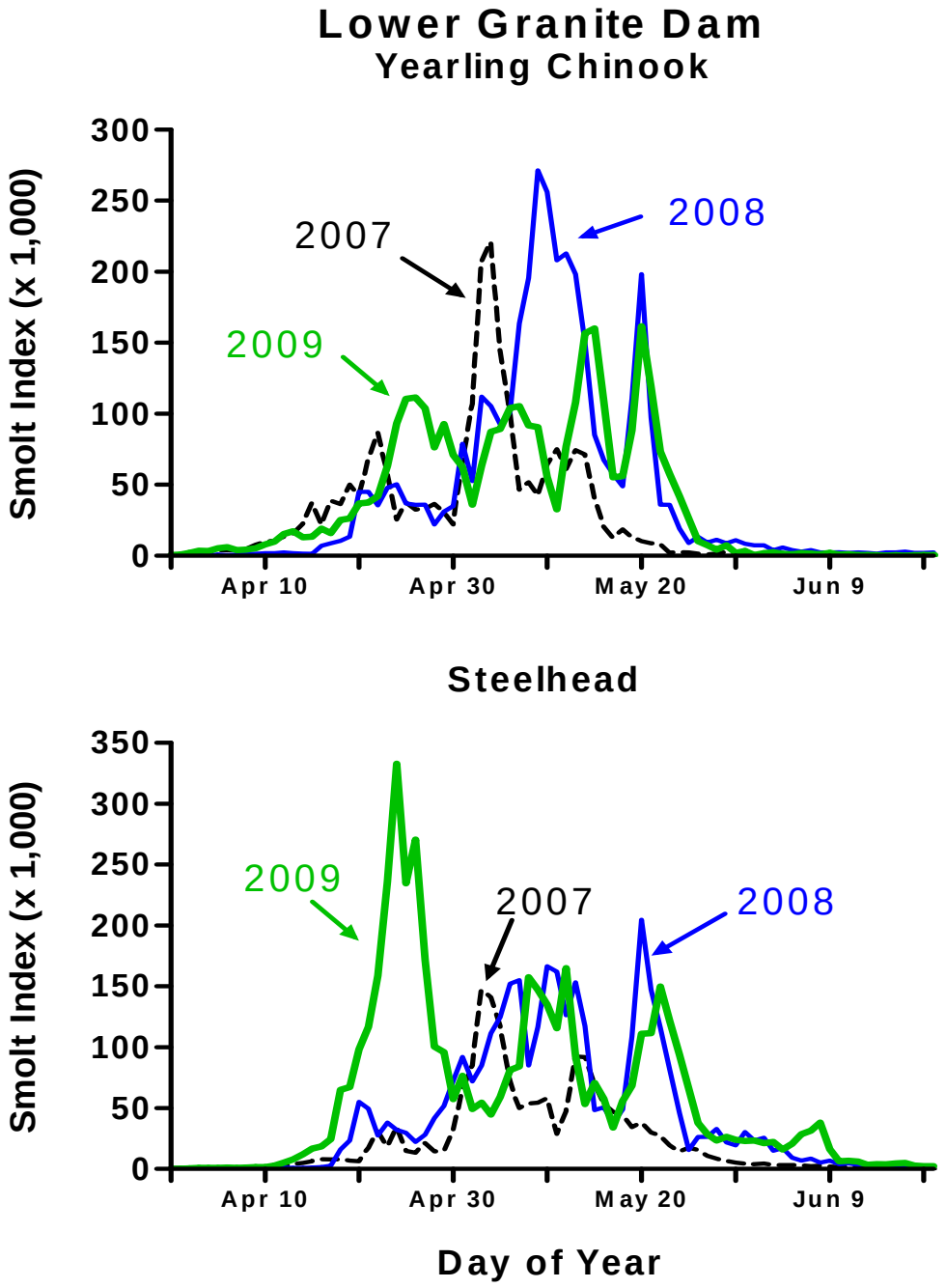
2007-2009 Smolt Indices



Summary of Adult Return Info from 2007

- 2007 Results (Inriver Survival and Adult Returns)
  - T:C0 ratios reduced, but still substantial in low flow years (2.86 for wild steelhead / 1.15 for wild Chinook)
  - Weekly T:C1 ratios show little benefit to wild steelhead (and spr/sum Chinook) until late April
  - Weekly T:C1 ratios show substantial benefit for wild steelhead (and spr/sum Chinook) starting in late-April / early-May

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2010 Migration Season

- 2010 Runoff forecasts are 56% at LGR and 67% at TDA
  - 2007 was 59% and 86%, respectively
- Ocean conditions are expected to be poorer in 2010 than in 2007

Other Considerations: lamprey

- Transport is likely detrimental to Snake River Basin Lamprey – a species of concern
  - Increases predation risk
  - Increases % of juveniles passing via screens
  - Increases % of juveniles passing via turbines

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Other Considerations: MCR steelhead

- Transport is detrimental to Threatened MCR steelhead in Deschutes and John Day rivers
  - Increases wander rates of SR steelhead (3-5%)
  - Increases stray rates of SR steelhead (<3-5%)

Other Considerations: sockeye salmon

- Effect of transport on SR sockeye salmon is unknown, but recent adult returns appear to be driven by ocean conditions and increased hatchery production of smolts (NWFSC 2008)
  - 2009 – 60,000+ PIT tags
  - 2010 - Transport Study funded
  - 2011 – Transport Study likely to be funded

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2008 ISAB Snake River Spill-Transport Review

- Very good analysis of the subject
- Resulted in Obtaining Some Valuable Information
- Resulted in Changed Spill/Transport Operations (compared to BiOp)

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Risk Management in 2010

- Recent returns are relatively high due to good survival in freshwater and good ocean conditions
- There is concern about putting these gains at risk in a low flow / poor ocean condition year

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Risk Management in 2010

- NOAA believes that the data support a decision to defer “spread the risk” operation during the month of May in 2010 because it increases the risk of poor returns to wild SR steelhead (and to a lesser extent to SR spr/sum Chinook)

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Proposed Low Flow Operation

- If seasonal flows are expected to be < 65 kcfs at LGR:
  - Begin “Max Transport” operations no later than May 1 at LGR, May 5 at LGS, and May 8 at LMN
  - Re-start spill operations in June for subyearling migrants (after subyearlings outnumber spring migrants for 3 consecutive days)

Question

- Question: Has NOAA Fisheries correctly interpreted the ISAB's recommendation? If not, please further explain your reasoning in the 2008 recommendation.

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Considerations for ISAB

- The proposed operation is for “Low Flow” years only (<20% of years); and only in May
- Transport rates will remain substantially lower in average or higher flow years
- Improvements to the FCRPS since 2007 (TDA spill wall, JDA weirs and avian arrays, surface weirs at LMN and LGS) will improve in-river survival compared to past low flow years, but is likely not sufficient to offset the T:C0 SAR ratios observed in 2007 (2.86 for wild steelhead)

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Considerations for ISAB

- This is an important management decision – one that will substantially affect the overall abundance of many wild Snake River steelhead and spring/summer Chinook salmon populations

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Questions / Discussion