



FPC Findings

Subyearling Chinook
Travel Time and Reach
Survival

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Introduction

- The Montana Plan shifts 10 kcfs from August into September in Columbia R.
- Question: Does 10 kcfs reductions in flow in Columbia River in August have negative impacts on subyearling chinook still migrating downstream towards the estuary in August?

Intro-continued

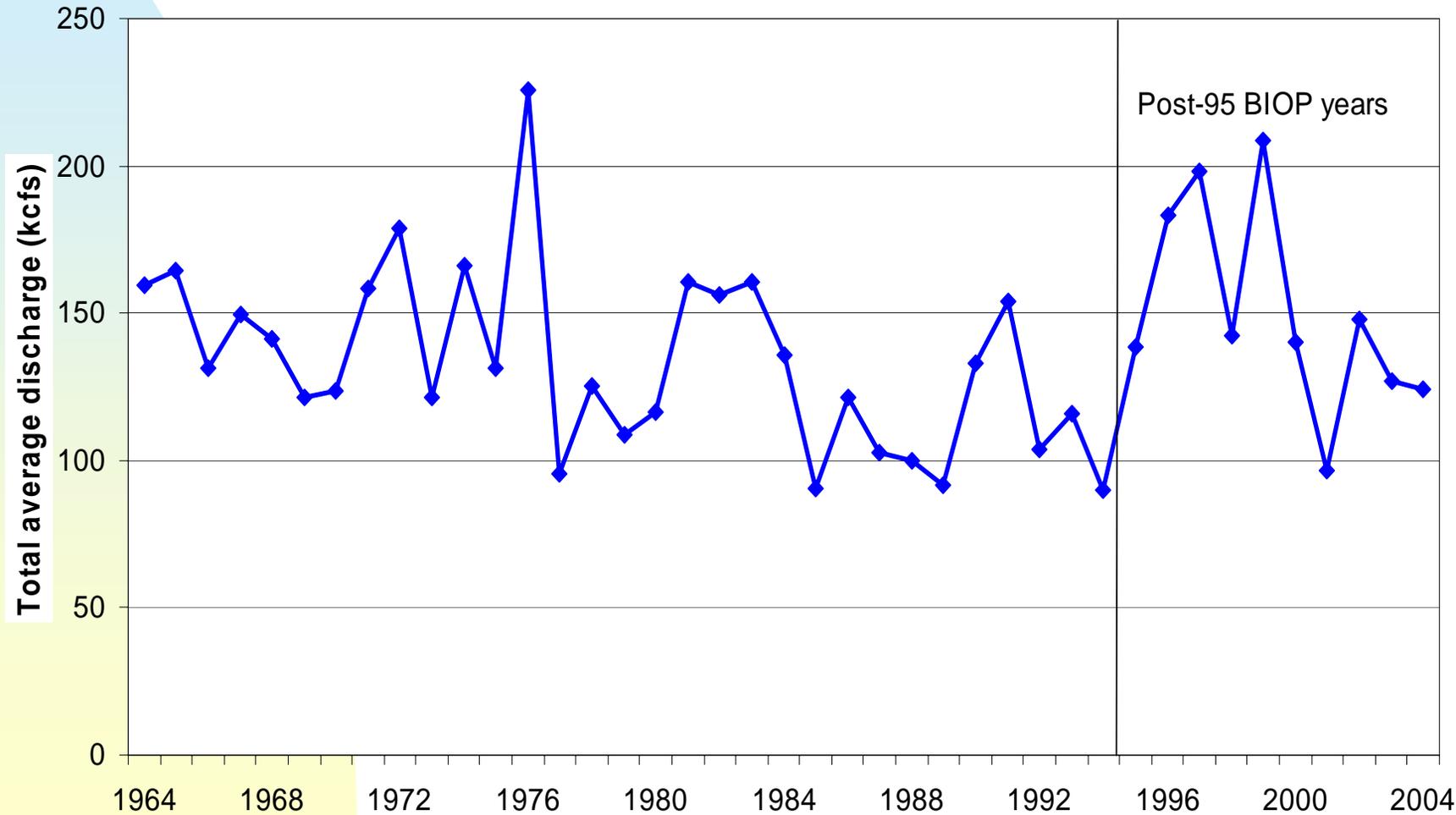
- Data on subyearling chinook (Ch0) PIT tagged and released at Rock Island Dam for the FPC's Smolt Monitoring Program provides evidence that flow reduction in August is not a good idea since negative impacts to Ch0 survival may occur.

Topics of Discussion

- August flows indexed at MCN
- Travel time of PIT tagged Ch0 from MCN to BON in August
- Travel time of PIT tagged Ch0 released at RIS to MCN
- Reach survival of PIT tagged Ch0 released at RIS to MCN tailrace
- Reach survival versus flow relation

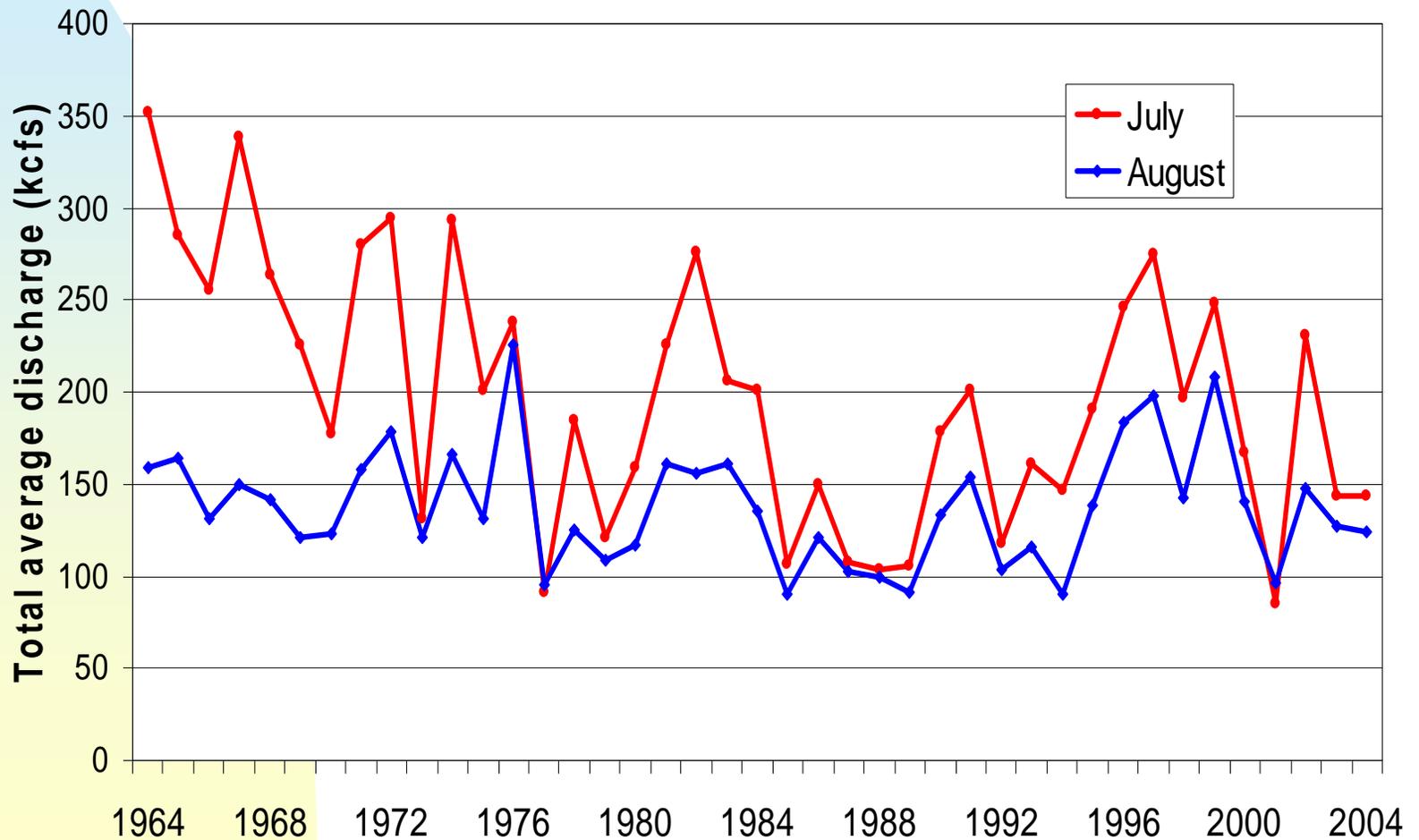
August MCN Flows

Dropped to pre-BIOP 200 kcfs level 2001-2003-2004



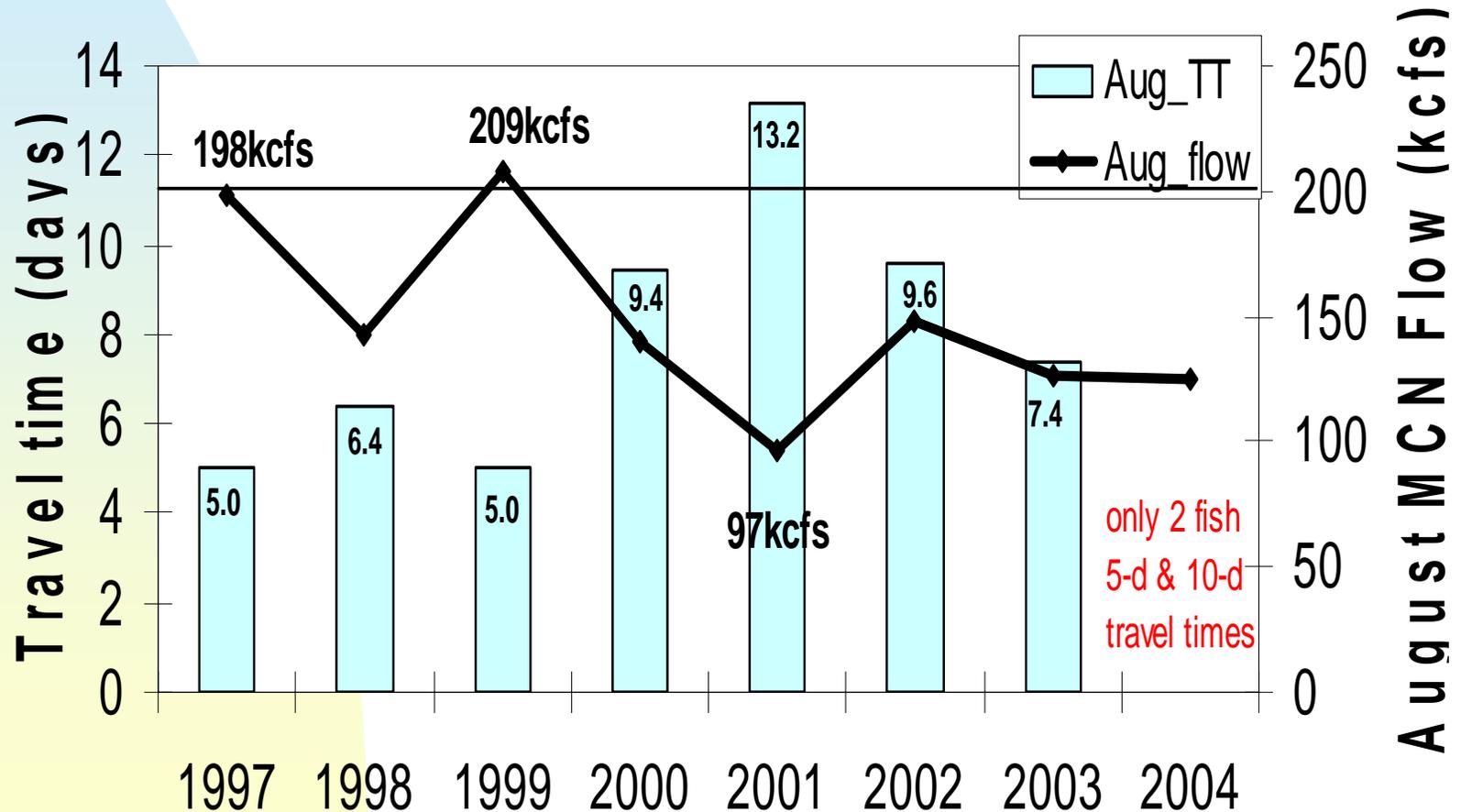
July-August MCN Flows

July Q > Aug Q becoming more similar now



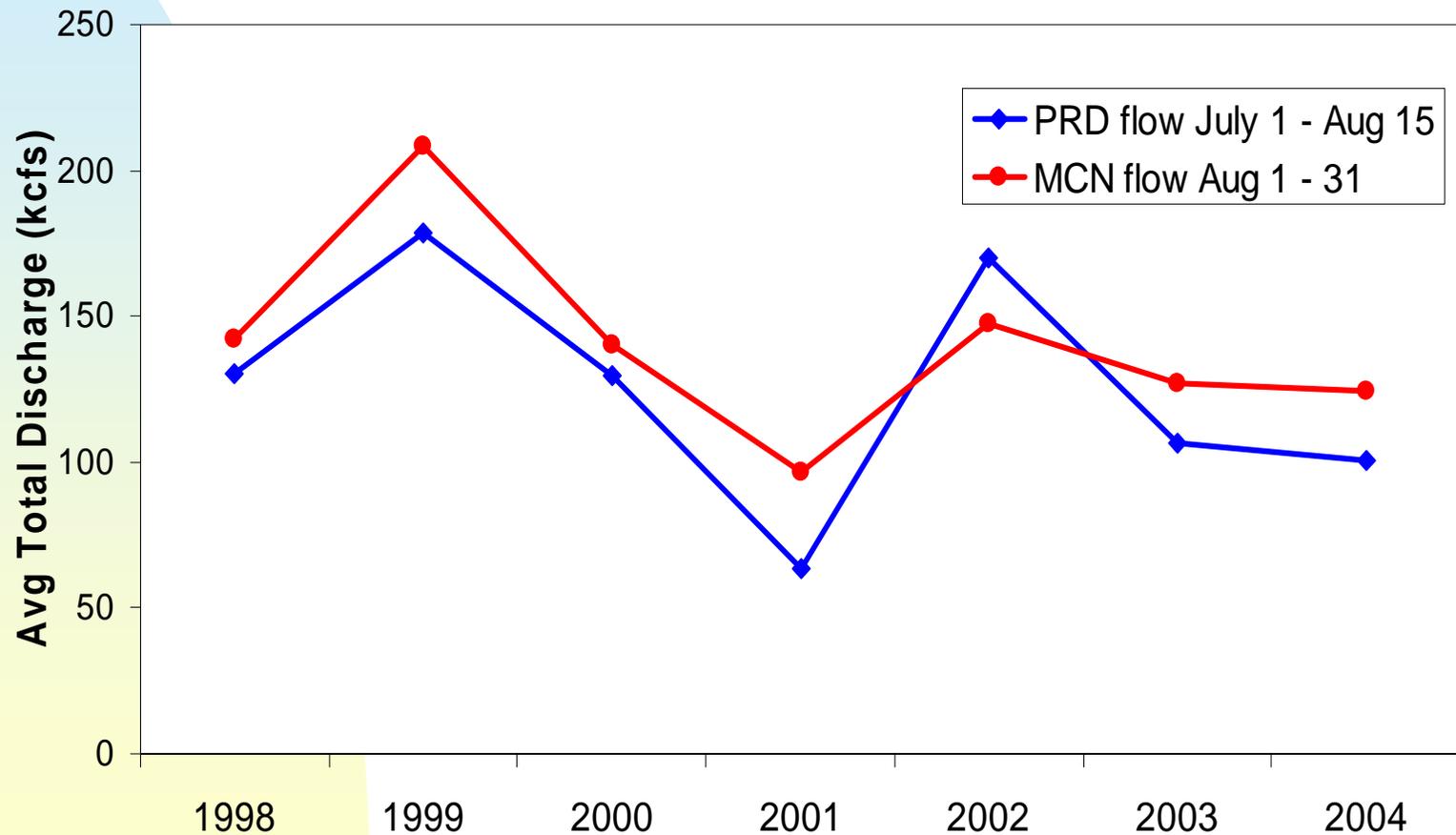
Ch0 Travel time MCN to BON

Reach BIOP 200 kcfs in 1997&99 -- fastest TT



July 1- Aug 15 PRD Flows

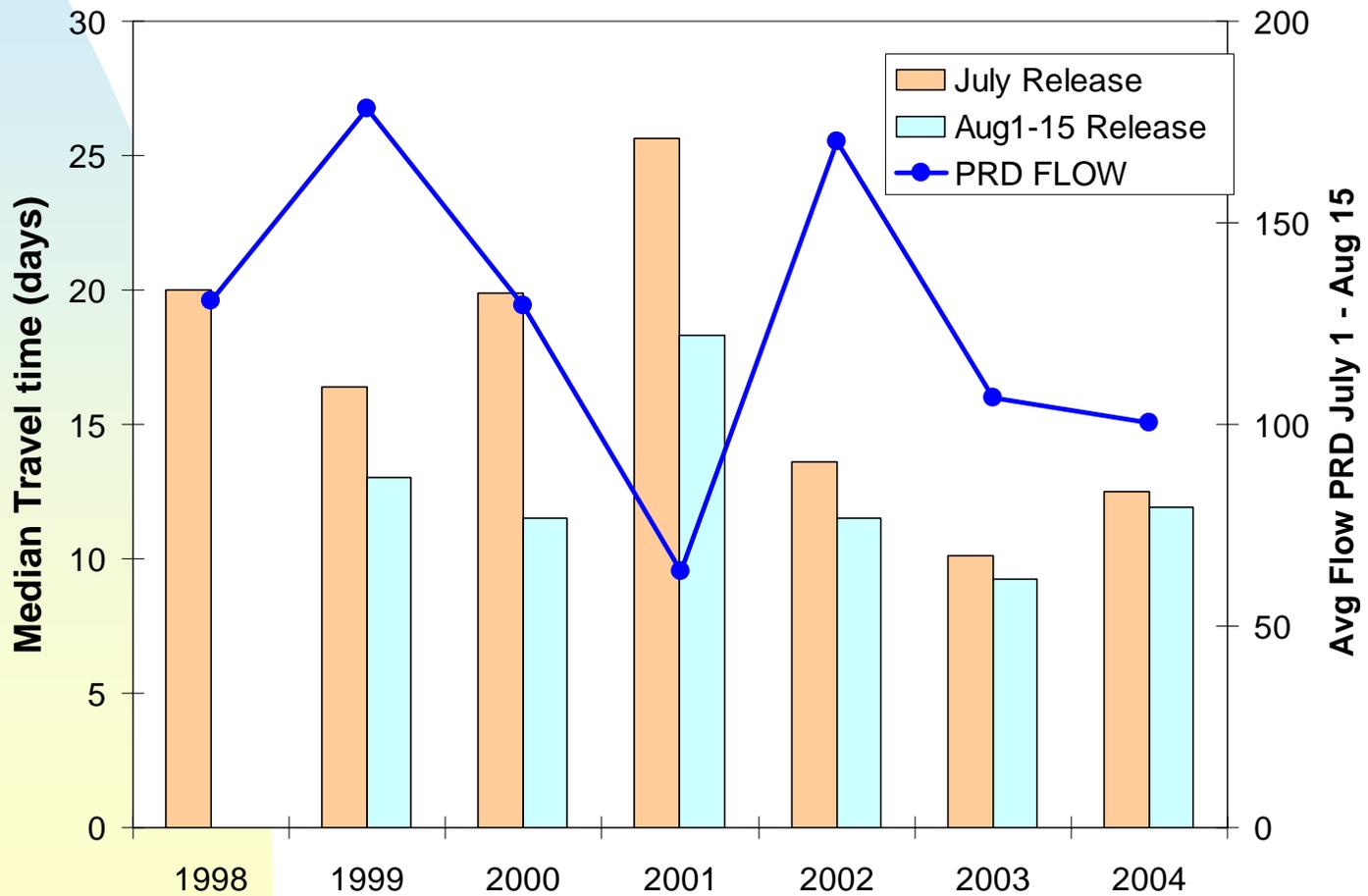
Track closely trend of August MCN flows



Ch0 Travel Time RIS to MCN

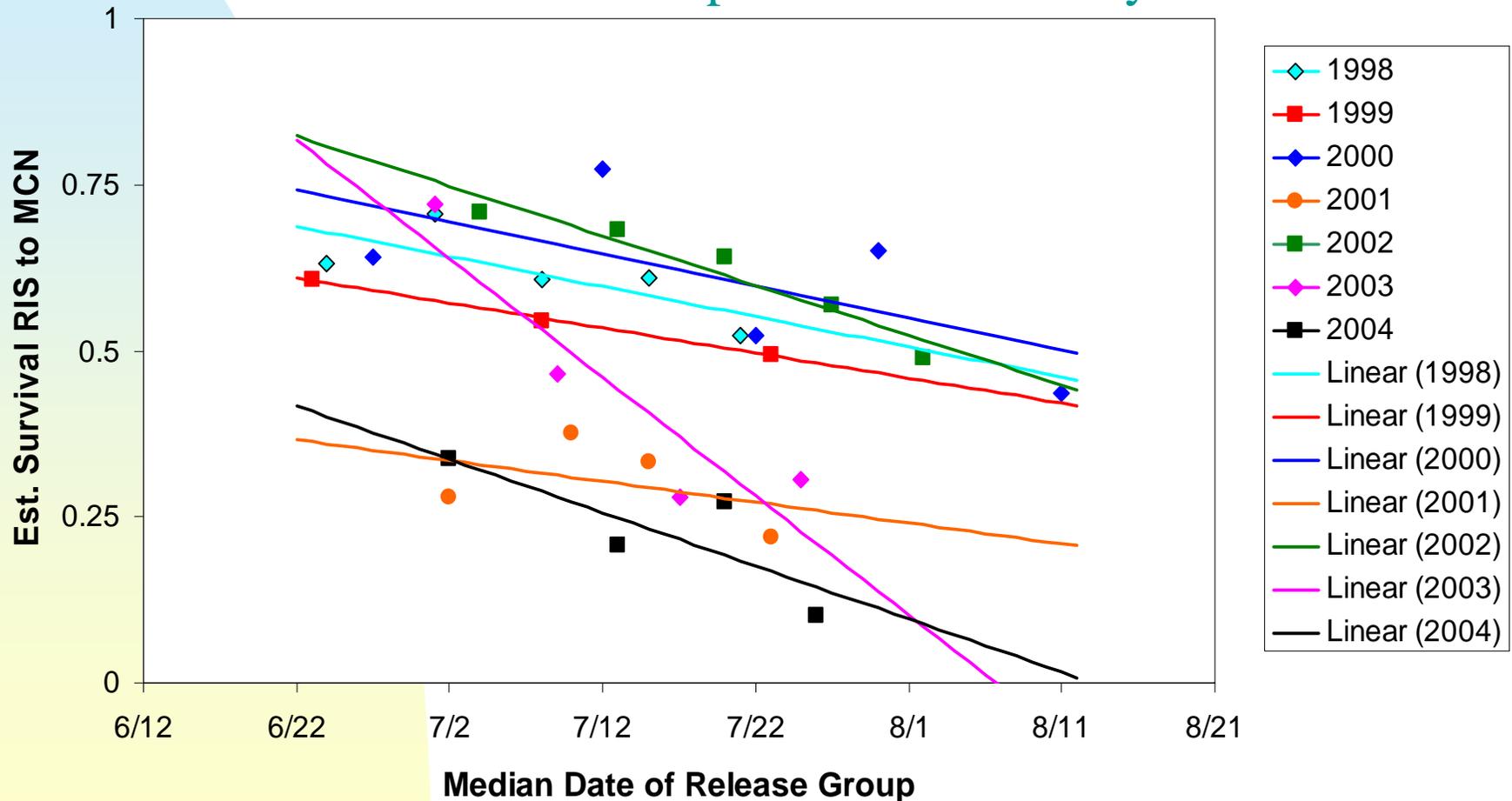
Longest TT in 2001 -- shortest TT in 2003

Median TT longer in July than Aug: Why?



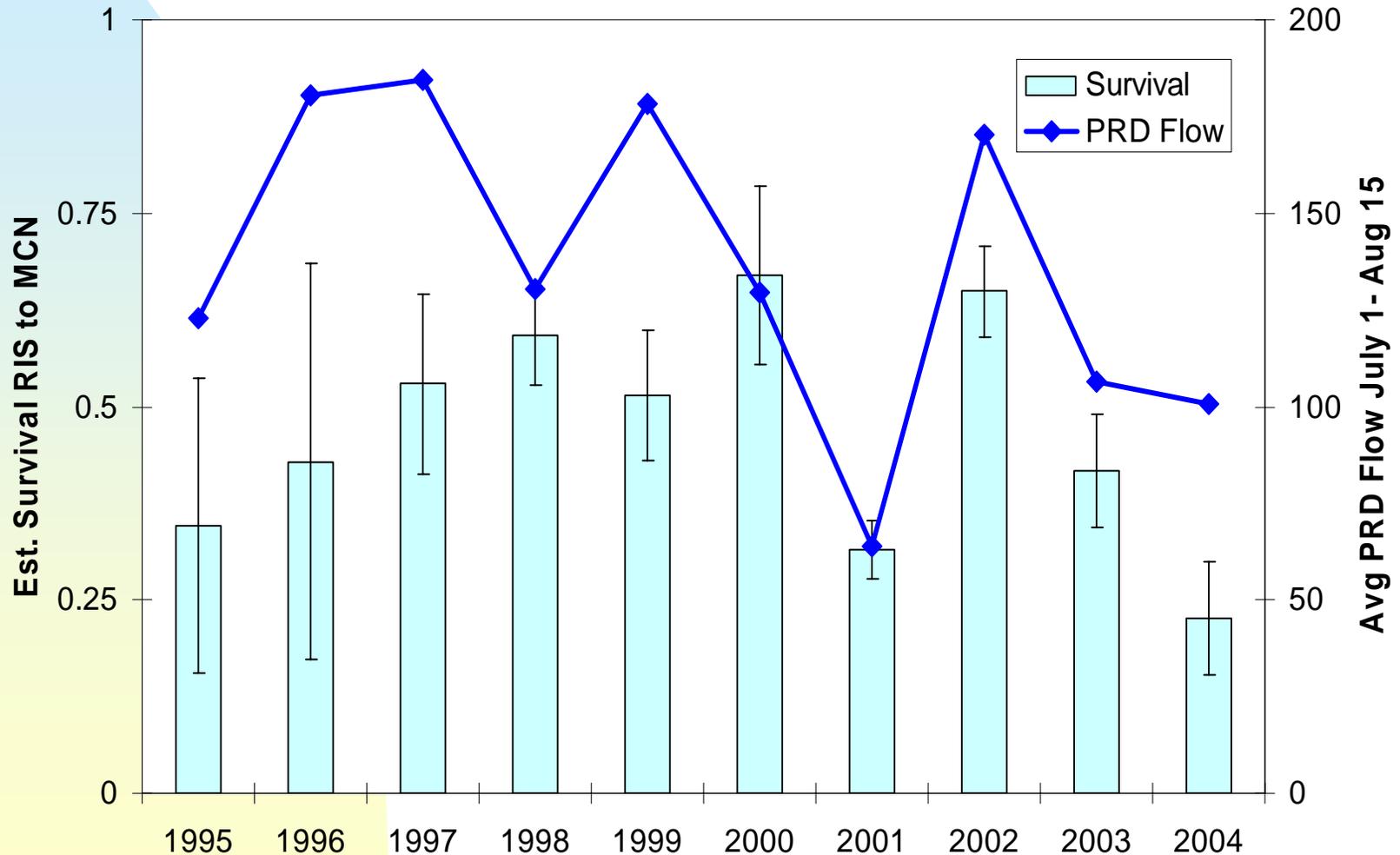
Ch0 Mortality Higher August

Survival drops over season in all years,
but worse impact in lower flow years



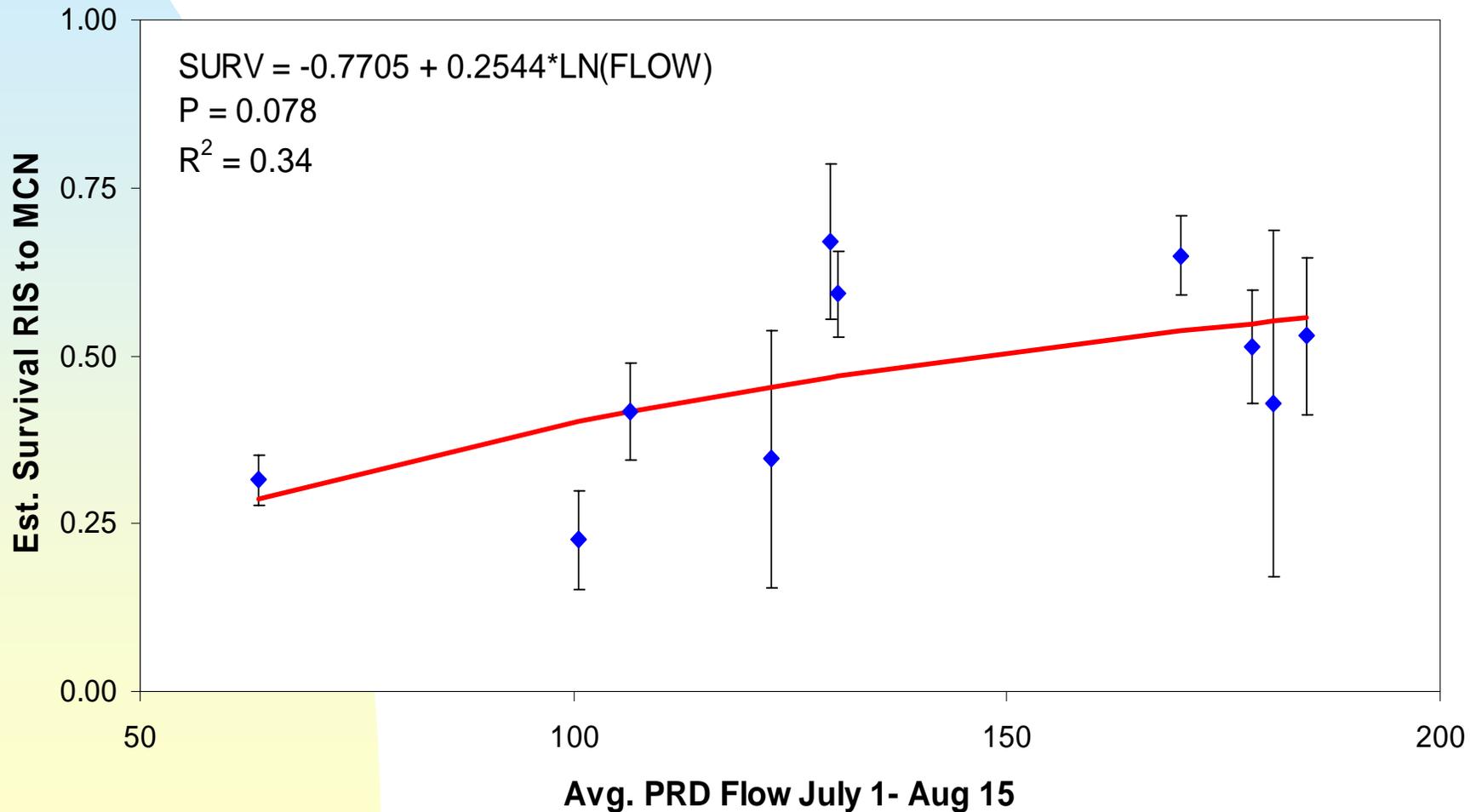
Ch0 Survival RIS-MCN

July releases: higher survival with higher flows



Ch0 Survival to Flow Relation

July releases RIS to MCN survival rates increase with flow



Conclusions

- Recent August flows at MCN back to pre-BIOP levels
- Travel time trends may be confounded by increasing mortality over the season
- Reach survival higher with better flows
- Significant ($P=0.078$) survival / flow relation
- Removing 10 kcfs from Aug would likely have negative impacts on survival